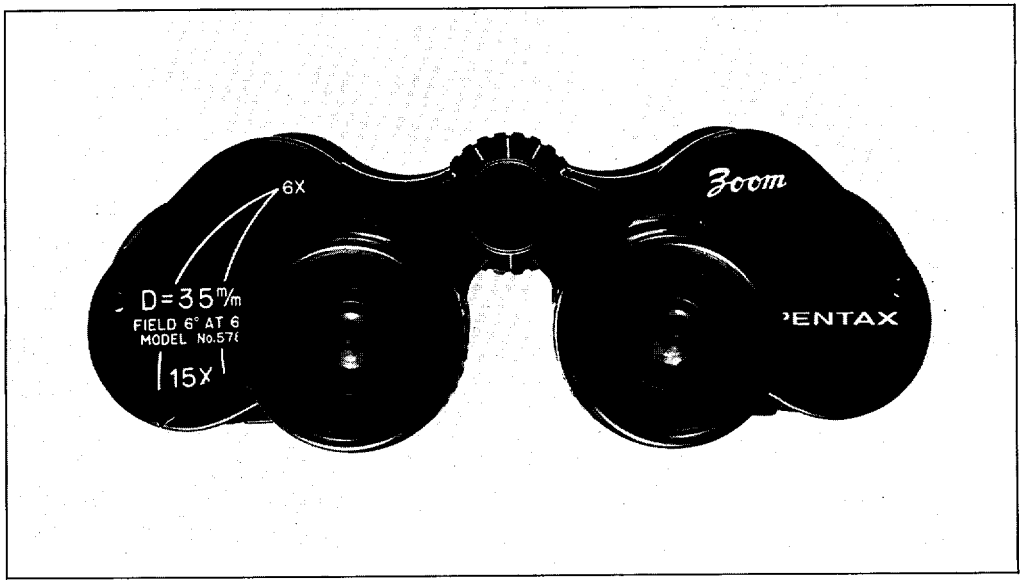
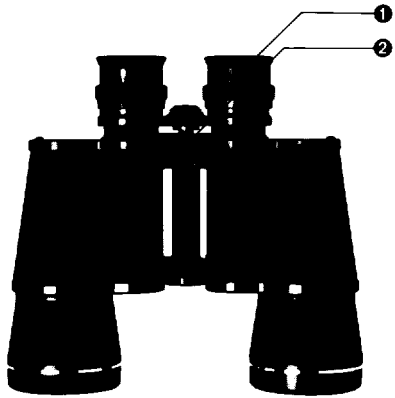
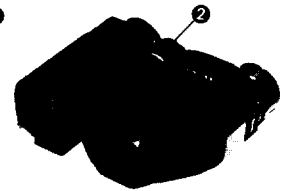
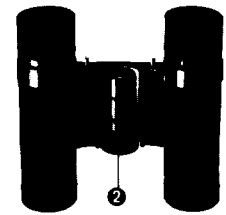
PENTAX BINOCULARS MONOCULARS



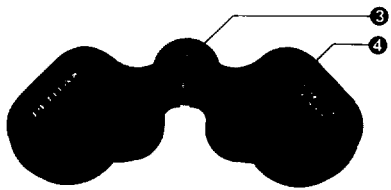
BINOCULARS

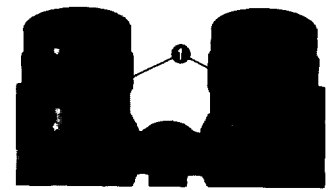






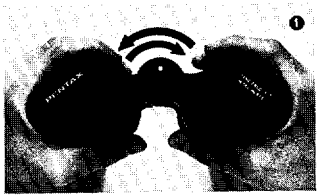
1. Dioptor adjusting ring
2. Center focusing wheel
3. Left eyepiece
4. Right eyepiece
5. Zoom lever



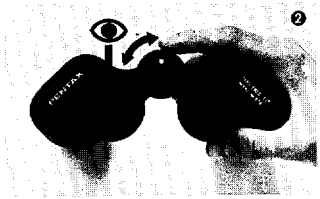


ZCF•BWCF•DCF•MCF

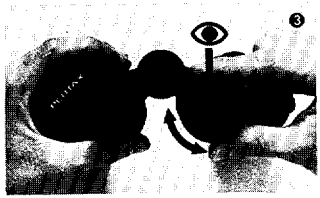
If your binoculars are the CF (Center Focusing) type, focus as follows:



❶ Adjust the spacing between the two eyepieces, as shown in the photo, by adjusting the two barrels until your field of view becomes a single sharp-edged circle.



❷ Looking through the left eyepiece, bring the object into sharp focus by adjusting the center focusing wheel.

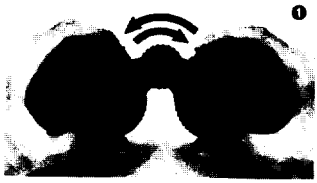


❸ Then, with your left eye closed, look at the object through the right eyepiece and bring the object into sharp focus by adjusting the diopter adjusting ring on the right eyepiece.

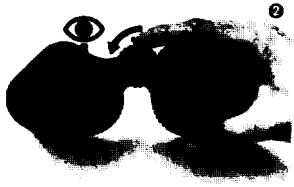
● After this adjustment has been made, you can focus on any object by merely turning the center focusing wheel.

ZOOM

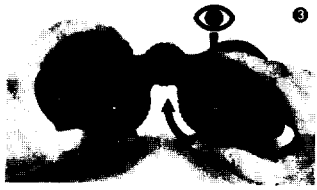
If your binoculars are the zoom type, focus as follows:



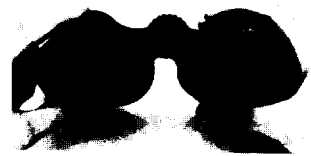
❶ Adjust the spacing between the two eyepieces.



❷ Looking through the left eyepiece, bring the object into sharp focus by adjusting the center focusing wheel.

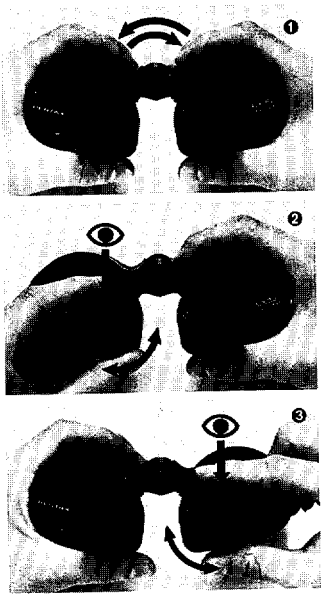


❸ Then with your left eye closed, look at the object through the right eyepiece and bring the object into sharp focus by adjusting the dioptor ring on the right eyepiece. Focus on your object by turning the center focusing wheel.



❹ By turning the zoom lever, you can now enjoy varying degrees of magnification.

IF If your binoculars are **IF** (Individual Focusing) type with dioptor adjusting rings on both eyepieces, focus as follows:



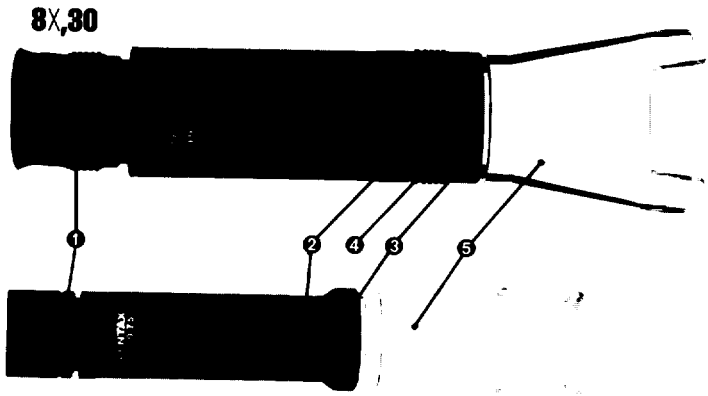
❶ Adjust the spacing between the two eyepieces.

❷ Look at your object with your left eye, and bring the object into sharp focus by adjusting the dioptor ring on the left eyepiece.

❸ Then adjust the right eyepiece by the same method.

MONOCULARS

8X,30



❶ Eyepiece and Focusing Ring
❷ Objective Lens
❸ Close-Up Lens
❹ Close-Up Lens Focusing
❺ Stand

As a Telescope (without the Close-Up Lens Attached)

1. Hold the eyepiece to your eye and point the lens at the object you are sighting.
2. Turn the focusing ring until the object comes clearly into focus.
3. Measuring the Distance of Objects
   a) Rotate the monocular until the scale is vertically aligned over the object. (Be sure the entire object is visible from top to bottom.)
   b) Distance equals =

$$\frac{\text{size of object}}{\text{scale reading}} \times 80$$

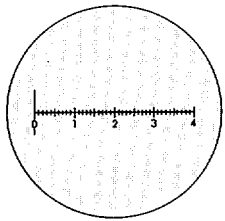
Read the number on the scale which aligns with the top of the object (2, 1.5, etc.). Divide the height of the object by the scale reading and multiply by 80. The distance in meters of the object measured

corresponds roughly to the figure obtained. For example, if the scale reading given is 2, and the object is 10 meters high:

$$\frac{10}{2} \times 80 = 400 \text{ (meters)}$$

The object sighted is approx. 400 meters away.

Precalculated distances for objects up to 3 meters



high are given in the following chart.

Note

- Objects most suited for accurate measurement are those of which heights can easily be estimated such as people (1.5 to 2 meters), automobiles, animals, buildings (where the height is known in advance), etc.
- Distance calculation is most accurate when the exact height of the object is known and it is entirely visible from bottom to top.
- Scale readings are not given at less than 30 meters (the monocular's minimum focusing distance)

As a Microscope (with the 25X Close-Up Lens Attached)

- **Scale Reading** (mm)

Scale		05	1	1.5	2	2.5	3	3.5	4
Height of Object	1m	160	80	53	40				
	1.5	240	120	80	60	48	40		
	2	320	160	107	80	64	53	46	40
	2.5	400	200	133	96	80	67	57	50
	3	480	240	160	120	96	80	69	60

Distance (m)

1. Place the monocular over the object and center the object in the middle of the Stand.
2. Turn the monocular focusing ring until the scale comes into focus.
3. Then, turn the Close-Up Lens focusing ring until the object comes into focus.
4. Measure distances with the scale (from 0.1mm to 4mm) as you would with a ruler by centering the scale over the object.

Note

- As depth of field is shallow at 25X magnification, adjust the position of the object with your fingers or tweezers to focus on different points.
- In places where the Stand would interfere (on construction sites, etc.), use the Close-Up Lens without the stand. In this instance, place the object the same distance from the Close-Up Lens as when using the Stand (approx. cm) and focus.

7X,20

As a Telescope (without the Close-Up Lens Attached)

- Hold the eyepiece to your eye and point the lens at the object you are sighting.
- Turn the focusing ring until the object comes clearly into focus.

As a Microscope (with the 22X Close-Up Lens attached)

- Attache the close-up lens and the stand to the monocular.
- Place the monocular over the object and center the object in the middle of the Stand.
- Turn the monocular focusing ring until the object comes into focus.

Strap

To reinstall the strap if it has been removed, feed the strap through the strap bracket and pull it until the strap stop firmly latches in the bracket.

Remarks

1. Do not leave fingerprints or smears on the surfaces of the objective lenses and eyepieces, especially when storing them for a long period of time. Wipe such stains away periodically with clean cotton cloth or gauze soaked in alcohol.
2. Your binoculars or monocular (except BIF/DCF HD models) are not water-resistant. There are several places where water can get inside and do a great deal of damage. Take care to protect the body from rain or splashing water. If your binoculars or monocular should get wet, dry it off with a clean, soft cloth.
3. When not using your binoculars or monocular, it is important to store them in a cool, dry, clean and well-ventilated place.
   It's also a good idea to keep your pair of binoculars or monocular in its case while you are not using it.
4. Although BIF/DCF HD models are water-resistant, do not purposely dip your BIF/DCF HD binoculars into salt-water or water. If your binoculars should get soaked by salt-water, please clean them with water and dry them off with clean, soft cloth.

SPECIFICATIONS

Type	Magnification(mm)	Diameter of Objective Lens	Diameter of Exit Pupil	Angle of View	Relative Brightness	Field of View at 1000 yards	Field of View at 1000m (m)	Height & Width		Weight	
								inch	cm	oz.	g.
7x, 35 ZCF	7x	35mm	5.0mm	6.5°	25	374ft	114m	5.9x6.7	15.0x17.0	17.6	500
7x, 50 ZCF	7x	50mm	7.1mm	7.1°	50	407ft	124m	7.0x7.9	17.8x20.0	35.3	1000
8x, 30 ZCF	8x	30mm	3.8mm	7.5°	14	430ft	131m	4.4x6.4	11.1x16.2	18.0	510
10x, 50 ZCF	10x	50mm	5.0mm	5.5°	25	315ft	96m	6.8x7.9	17.3x20.0	35.3	1000
12x, 50 ZCF	12x	50mm	4.2mm	5.5°	18	315ft	96m	6.6x7.9	16.7x20.0	35.3	1000
16x, 50 ZCF	16x	50mm	3.1mm	4.0°	10	230ft	70m	6.7x7.9	17.0x20.0	35.3	1000
7x, 35 BWCF	7x	35mm	5.0mm	11.3°	25	649ft	198m	4.7x7.2	12.0x18.2	28.2	800
8x, 40 BWCF	8x	40mm	5.0mm	10.0°	25	574ft	175m	5.2x7.2	13.3x18.2	28.9	820
6x, 30 BIF	6x	30mm	5.0mm	8.5°	25	489ft	149m	4.9x6.8	12.5x17.3	21.9	620
7x, 50 BIF	7x	50mm	7.1mm	7.1°	50	407ft	124m	7.1x8.2	18.0x20.8	51.5	1460
8x, 30 BIF	8x	30mm	3.8mm	8.5°	14	489ft	149m	4.9x6.8	12.5x17.3	21.9	620
7x, 20 DCF	7x	20mm	2.9mm	7.5°	8.4	430ft	131m	3.8x3.9	9.7x10.0	6.4	182
9x, 20 DCF	9x	20mm	2.2mm	6.2°	4.8	354ft	108m	3.6x3.9	9.1x10.0	6.7	190
8x, 30 DCF	8x	30mm	3.8mm	7.0°	14.4	400ft	122m	4.8x4.7	12.3x11.9	16.9	480
9x, 30 DCF	9x	30mm	3.3mm	6.7°	10.9	384ft	117m	5.6x4.7	14.2x11.9	18.3	520
7x, 21 DCF HD	7x	21mm	3.0mm	7.5°	9.0	393ft	131m	4.1x4.2	10.5x10.8	13.0	370
8x, 24 MCF	8x	24mm	3.0mm	6.5°	9.0	374ft	114m	4.4x4.3	11.2x11.0	12.0	340
10x, 24 MCF	10x	24mm	2.4mm	5.1°	5.8	295ft	90m	4.2x4.3	10.8x11.0	11.6	330

Remarks

- *6x, 30 BIF and 8x, 30 BIF binoculars are available with special rubberized coating for maximum protection against foul weather.*
- *BIF/DCF HD water-resistance specifications: After 5 minutes under 0.2 kg per sq cm air-pressure, water leakage into the binoculars will be less than 5% without moving the eyepiece.*

6-22x, 40 ZCF Width-178mm (6.9") Height-150mm (6.6") Thickness-65mm (2.5") Weight-740g (25.9 oz.)

Magnification	6x	8x	9x	11x	13x	15x	18x	20x	22x
Effective Diameter of objective lens (mm)	40	40	40	40	40	40	40	40	40
Diameter of eyepiece lens (mm)	16	16	16	16	16	16	16	16	16
Diameter of exit pupil (mm)	6.66	5.00	4.44	3.63	3.07	2.66	2.22	2.00	1.81
Angle of view	5.5°	4.5°	4.2°	3.8°	3.4°	3.2°	2.8°	2.7°	2.6°
View at 1000 yards (ft.)	288	236	220	199	178	167	146	141	136
View at 1000 meters (cm)	96.1	78.6	73.3	66.3	59.3	55.8	48.9	47.1	45.3

6–15x, 35 ZCF Width–195mm (7.6") Height–143mm (5.6") Thickness–65mm (2.5") Weight–1,080g (37.8 oz.)

Magnification	6x	7x	8x	9x	10x	11x	12x	13x	14x	15x
Effective diameter of objective lens (mm)	35	35	35	35	35	35	35	35	35	35
Diameter of eyepiece lens (mm)	15	15	15	15	15	15	15	15	15	15
Diameter of exit pupil (mm)	5.83	5.00	4.37	3.88	3.50	3.18	2.91	2.61	2.50	2.33
Angle of view	6.0°	5.8°	5.5°	5.2°	5.0°	4.8°	4.5°	4.4°	4.2°	4.0°
View at 1000 yards (ft.)	314	306	288	271	262	253	236	230	219	210
View at 1000 meters (cm)	105	102	96.11	90.2	87.3	84.4	78.6	76.5	73.0	69.8

9–20x, 35 ZCF Width–195mm (7.6") Height–143mm (5.6") Thickness–65mm (2.5") Weight–1,080g (37.8 oz.)

Magnification	9x	10x	11x	12x	13x	14x	15x	16x	17x	18x	19x	20x
Effective diameter of objective lens (mm)	35	35	35	35	35	35	35	35	35	35	35	35
Diameter of eyepiece lens (mm)	16	16	16	16	16	16	16	16	16	16	16	16
Diameter of exit pupil (mm)	3.88	3.50	3.18	2.91	2.69	2.50	2.33	2.18	2.05	1.94	1.84	1.77
Angle of view	4.7°	4.5°	4.3°	4.1°	4.0°	3.8°	3.7°	3.6°	3.5°	3.4°	3.3°	3.3°
View at 1000 yards (ft.)	245	236	224	213	210	201	192	189	183	178	173	173
View at 1000 meters (cm)	81.5	78.6	74.8	71.0	69.8	66.9	64.0	63.1	61.1	59.1	57.7	57.7

Monocular	8x,30	7x, 20
Magnification	8X	7X
Effective Diameter of Objective Lens	30mm	20mm
Angle of View	6.2°	7.5°
View at 1000 Meters	108m	131mm
Diameter of Exit Pupil	3.8mm	2.9mm
Relative Brightness	14.4	8.2
Dimensions	124 x 42mm	99 x 28mm
Height (monocular only)	124mm	99mm
Weight (monocular only)	190g	58g
With Close-Up Lens Magnification	25X	22X
Height (with stand)	213mm	180.5mm
Weight (with stand)	260g	85g
Scale Range	0.1mm-4mm (1 gradation=0.1mm	–

PENTAX®

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