



# SPOTTING SCOPE

## TSN-82SV

### Instruction Manual



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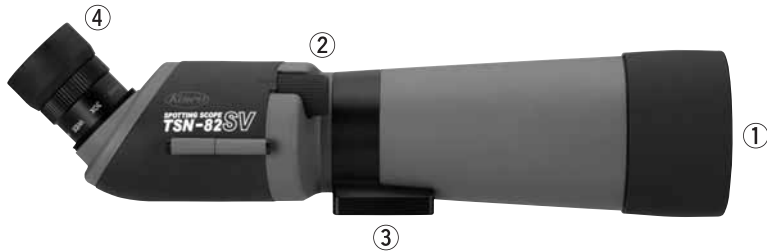
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## Foreword

Thank you for purchasing your Kowa TSN-82SV spotting scope. Please take a few minutes to read the following instruction manual in order to better understand the operation, capabilities, care and maintenance of your spotting scope.

## Features and Specifications



TSN-82SV Standard Objective Lens, Angled

① Objective Lens    ② Focus Knob    ③ Tripod Mount    ④ Eyepiece

### ● Main Body Specifications

	TSN-82SV
Effective Diameter of Objective Lens	82mm
Minimum Focusing Distance	6m (20ft)
Main Body Length	383mm (15.1in)
Main Body Weight	1490g (52.5oz)

### ● Standard Accessories

- Objective Lens Cap
- Eyepiece Mount Cap
- Instruction Manual (this document)

\* 86mm filter threads on the objective.

\* Observation with the hand-held spotting scope is difficult because of image blurring.

Use a stable tripod for observation.

\* Specifications and appearance of the product are subject to change without prior notice.

\* The TSN-820/820M Series eyepieces cannot be used with the TSN-82SV.

## Functions and Use (1)



### Sighting Tube

When the object you wish to view is difficult to find, the sighting tube can aid you in finding the object.



### Bayonet Eyepiece Mount

The bayonet mount system of the spotting scope allows the eyepiece to be easily attached and removed.



### Focus Knob

The focus knob of the TSN-82SV allows a smooth and accurate focusing. Turn the focus knob clockwise for far focus and counterclockwise for close focus. Minimum focusing distance is 6m (20ft).

## Functions and Use (2)



### Sliding Sunshade

Slide the sunshade away from the scope body to protect the lens from exposure to rain or to keep direct sunlight from entering the spotting scope.



### Dust Protection Glass

Protects the spotting scope body from dust and moisture.



### Rotating Tripod Mount

The rotating tripod mount allows the spotting scope to be set at various angles while attached to a tripod. The body of the spotting scope can be turned by loosening the lock screw counterclockwise and rotating the spotting scope to the desired position.



The lock screw.

## Optional Accessories

### ● Eyepiece Specification



	TE-9Z	TE-14WD	TE-9WD	TE-17HD
<b>Magnification</b>	21~63×ZOOM	32×WIDE	50×WIDE	27×LER
<b>Real Field Of View</b>	1.8° ~0.95°	2.2°	1.3°	2.0°
<b>Exit Pupil Diameter</b>	3.9~1.3mm	2.6mm	1.6mm	3.0mm
<b>Relative Brightness</b>	15.2~1.7	6.8	2.6	9.0
<b>Eye-Relief</b>	16.5~16mm	20mm	15mm	32mm
<b>Field Of View at 1,000m</b>	31~17m	38m	23m	35m
<b>Field Of View at 1,000yds</b>	93~51ft	114ft	69ft	105ft

\* The TSN-660/600 Series eyepieces can be used with the TSN-82SV.

\* The TSN-820/820M Series eyepieces cannot be used with the TSN-82SV.

\* The magnification printed on the eyepiece is for the TSN-660/600 Series spotting scopes.

When the eyepiece is used with the TSN-82SV, the magnification will change.

The magnification of the eyepieces when used with the TSN-82SV can be found in this instruction manual (the list mentioned above) or in a product catalog.

\* Eyepiece converter (TSN-EC Series) cannot be used with the TSN-82SV.

### ● Digital Camera Adapter



TSN-DA1



TSN-DA4



[ Digiscoping ]

### ● Stay-On-Case



Able to set the scope on tripod even with the case on.



### Adapter Ring

TSN-AR28/30/305/37/  
43/46/52/55/58/62/72

## Maintenance and Storage

### Care and cleaning of the lens

- Use a blower, can of air, or soft oil-free brush to remove dust from the lens surface.
- Fingerprints and other substances left on the lens surface can cause mold growth. After removing dust, lightly wipe the lens with a soft lens cloth, gauze, or cleaning paper (available at a camera shop) dampened with a small amount of lens cleaner. Wipe the lens surface gently in a circular motion, starting from the center and working out to the edge. If the lens surface is still dirty repeat the process again, using a new piece of cleaning paper or an unused portion of the cloth.
- After this, use the moisture from your breath to fog the lens and wipe it clean, using a new piece of cleaning paper or cloth.
- A commercial lens cleaner can leave behind a film on the lens surface so use as small a quantity as possible.

### How to clean the body

- Remove dust and debris with a blower or can of air and wipe with a clean soft cloth. Do not use solvents such as acetone, benzene, paint thinner, or products that contain these solvents to clean the body. These products can discolor or deform the outer surface of the body.
- Carefully brush dirt and debris from the focus knob, sliding hood, and other moving parts.

### Storage

- Storing the spotting scope without cleaning can leave stains on the surface and promote mold growth. Cleaning is especially important after using the spotting scope in dusty or humid conditions, or after use in the rain or near the coast.
- After cleaning, allow the spotting scope to dry thoroughly indoors at room temperature, replace all lens caps, and then store the spotting scope in a dry place. Place the spotting scope in an airtight container together with desiccant when storing for extended periods of time.

### ■ Inquiry about repair

If there is a need to return your scope to the manufacturer for repair or maintenance, please contact Kowa's distributor.

- \* Kowa is not responsible for any damage caused by mishandling and or natural disasters such as, fire, earthquakes, floods, etc.
- \* Kowa is not responsible for any damage caused by an unauthorized service company.

## Safety Precautions

### Warning

- Never look at the sun. Severe eye damage could occur up to the permanent loss of eyesight.
- Make sure that small pieces and packaging such as eyepiece caps, covers, plastic bags etc. are out of the reach of children. If such an item is swallowed, serious injury, suffocation, or death could occur.

### Caution

- Set the spotting scope correctly, otherwise it may fall, causing damage or injury.
- Do not place the spotting scope in an unstable location. If it falls or tips over, injury may occur.
- Do not leave the product in direct sunlight. Fire may occur.
- Do not leave the product near open flames, inside a car, or in any place where extreme temperatures may occur. This can cause optical damage and lead to the failure of waterproofing.
- Skin inflammation or irritation may occur by long term contact with rubber parts. If such a condition occurs, consult a physician.
- When using the spotting scope in an urban setting, make sure that you do not disturb the privacy of others.
- This product is waterproof which allows for use in the rain. However, immersion in water and use of the focus knob when wet should be avoided whenever possible.
- Do not attempt to repair or open up the spotting scope body. This will void the warranty.

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