



Kowa Company, Ltd.

Electronics & Optics Division
 4-14 Nihonbashi-honcho 3-chome,
 Chuo-ku, Tokyo 103-8433, Japan
 Phone: (3)5623-8062 Facsimile: (3)5623-8060
<http://www.kowa-prominar.ne.jp>
 e-mail: info@kowa-prominar.ne.jp

Kowa Optimed, Inc.

20001 So. Vermont Ave. Torrance, CA 90502, U.S.A.
 Phone: (800)966-5692 Facsimile: (310)327-4177
<http://www.kowa-usa.com>
 e-mail: scopekowa@kowa.com

Kowa Europe GmbH

Immermannstrasse 43B
 40210 Duesseldorf, F.R. Germany
 Phone: (211)1793540 Facsimile: (211)161952
 e-mail: Scopes@Kowa-Europe.com

興和株式会社

電機光学事業部
 〒103-8433 東京都中央区日本橋本町3-4-14
 TEL. (03) 5623-8077 FAX. (03) 5623-8070
<http://www.kowa-prominar.ne.jp>
 e-mail: info@kowa-prominar.ne.jp

Specifications are subject to change without any prior notice.
 製品の仕様および外観は、改良のため予告なく変更されることがあります。

Recycled Paper 再生紙を使用しています

0788500BT



Eyepiece

TE-10Z / TE-17W / TE-20H

Photo Attachment

TSN-PA2D / TSN-PZ

Instruction Manual

アイピース、フォトアタッチメント 取扱説明書



Eyepieces

Photo Attachments

Thank you for your purchase of an accessory for your KOWA spotting scope. Before using this product we recommend that you read this instruction manual thoroughly in order to ensure proper use and setup.

この度はKOWAスポッティングスコープ用アクセサリをお買い上げいただきまして、誠にありがとうございました。本製品をお使いになる前に、この取扱説明書をよくお読みいただき、正しくお使いください。

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 breathe 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.

Storage

- Storing the eyepiece/photo attachment 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 eyepiece/photo attachment to dry thoroughly indoors at room temperature, replace all lens caps, and then store the eyepiece/photo attachment in a dry place.
Place the eyepiece/photo attachment in an airtight container together with desiccant when storing for extended periods of time.

Cautions Before Use

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.

Attention

- Attach the eyepiece/photo attachment to the spotting scope properly to prevent it from being dropped.
- Do not place the eyepiece/photo attachment in an unstable location. If it falls or tips over, injury may occur.
- Do not carry or transport the TSN-PA2D/PZ and camera while mounted to a spotting scope to prevent it from falling and causing damage or injury.
- Kowa is not responsible for any damage that occurs to any equipment used in conjunction with this product.
- Skin inflammation or irritation may occur with long time or long term contact with rubber parts. If such a condition occurs, consult a physician.
- When using the eyepiece/photo attachment with the spotting scope in an urban setting, make sure that you do not disturb the privacy of others.
- Do not apply force to any moving parts as it can cause damage to the product.
- We recommend the use of a sturdy tripod and/or the universal mount system TSN-DAS3/DAS1 etc. to prevent the equipment from falling over and to prevent image blurring when photographing.

Eyepiece

These eyepieces are used for TSN-880/770 series spotting scopes.

Standard Eyepiece Accessories

- Rear lens cap
- Front lens cap
- Soft case
- Instruction manual (This manual)

* When storing the eyepiece replace all lens caps and place in the soft case.



	TE-10Z	TE-17W	TE-20H
Magnification	20~60X ZOOM	30X WIDE	25X LER
Real Field of View	2.2°~1.05°	2.4°	2.1°
Exit Pupil	4.4~1.5mm (TSN-880) 3.9~1.3mm (TSN-770)	2.9mm (TSN-880) 2.6mm (TSN-770)	3.5mm (TSN-880) 3.1mm (TSN-770)
Relative Brightness	19.4~2.3 (TSN-880) 15.2~1.7 (TSN-770)	8.4 (TSN-880) 6.8 (TSN-770)	12.3 (TSN-880) 9.6 (TSN-770)
Eye Relief	17.0~16.5mm	20.0mm	32.0mm
Field of View at 1,000m/yds	38.4~18.3m/yds	41.9m/yds	36.7m/yds
Length	105mm (4.13in)	86mm (3.39in)	103mm (4.06in)
Weight	315g (11.0oz)	310g (10.6oz)	320g (11.2oz)

Multi-step Twist-up Eyecup (TE-10Z, TE-17W) Rubber Eyecup (TE-20H)

The TE-10Z and TE-17W feature a multi-step twist-up eyecup. The eyecup of the TE-17W has 4 steps and the TE-10Z has 3 steps. The eyecup can be removed by turning it counterclockwise. The eyecup of the TE-20H is a long rubber eyecup and can be removed by pulling it off.

The eyecup threads of all the eyepieces are the same and can be used to attach other accessories to them.



Waterproof

All eyepieces are waterproof to JIS Protection Class 5 and filled with dry nitrogen gas to prevent the lens from fogging. However, they are not intended for use under water or in extremely heavy rain.

* Please refer to the instruction manual of the spotting scope for the procedure of attaching the eyepiece to the spotting scope.

Functions

Photo Attachment

These photo attachments are used for TSN-880/770/660/600 series spotting scopes.

Standard Photo Attachment

- Rear lens cap
- Front lens cap
- Soft case
- Instruction manual (This manual)

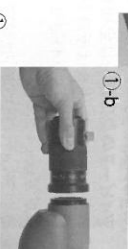
* When storing the photo attachment replace all lens caps and place in the soft case.



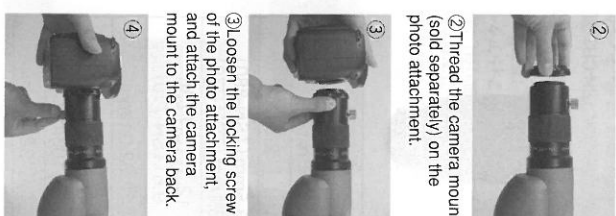
	TSN-PA2D For 35mm SLR Cameras	TSN-PZ For 35mm SLR Cameras
Focal Length	950mm (TSN-880/770) 800mm (TSN-660/600)	680~1000mm (TSN-880/770) 560~840mm (TSN-660/600)
F-Number	10.8 (TSN-880) 12.3 (TSN-770) 12.1 (TSN-660) 13.3 (TSN-600)	7.7~11.4 (TSN-880) 8.8~13.0 (TSN-770) 8.5~12.7 (TSN-660) 9.3~14.0 (TSN-600)
Minimum Focusing Distance	5m (16.4ft) (TSN-880/770) 6m (19.7ft) (TSN-660/600)	5m (16.4ft) (TSN-880/770) 6m (19.7ft) (TSN-660/600)
Length	11.7mm (4.61in)	105mm (4.13in)
Weight	230g (8.11oz)	350g (12.35oz)

*When using an APS-C format digital SLR camera, the focal length will be approximately 1.5 times the figure above. When using a four-thirds format digital SLR camera, the focal length will be approximately 2 times the figure above. Refer to the manual of the camera for more information.
*When using a full size 35mm film format (24mm x36mm) and APS-H format (28.7mm x19.1mm), the TSN-PZ only be used at tele side without vignetting. Vignetting will occur at all other focal lengths.

Installation



1. Remove the protective ring from the spotting scope accessory mount threads (photograph 1-a), and thread the photo attachment to the spotting scope (photograph 1-b).
2. Thread the convention ring TSN-CR3(sold separately) to the photo attachment. Then thread the TSN-CR3 / photo attachment to the spotting scope.



2. Thread the camera mount (sold separately) on the photo attachment.
3. Loosen the locking screw of the photo attachment, and attach the camera mount to the camera back.
4. Reverse the order above. When removing the camera back from the photo attachment, press the lens lock release button of the camera, while turning the photo attachment. Refer to the manual of the camera for more information.

Usage

How to Photograph

Focus with the focusing knob of the spotting scope while looking through the finder of the camera. Due to the extremely large focal length, it may be difficult to focus because of the narrow depth of field.

• The spotting scope and photo attachment do not have an adjustable aperture diaphragm. The camera's shutter speed/film speed (ISO) settings can be changed for exposure compensation. Refer to the instruction manual of the camera to change these settings.

• The use of a cable shutter release, a wireless remote control, or timer is recommended to eliminate shaking and image blur.

• Due to the extremely large focal length, image blur can be caused by the wind.

• When photographing, set the camera to manual mode or aperture priority mode. Some cameras only have a manual mode and exposure compensation may be required when using aperture priority mode. It is highly recommended to take several practice shots before photographing. Refer to the instruction manual of the camera for more information on camera modes.

• Use a camera mount that matches your brand of Pentax K, Nikon F, Canon EOS, Olympus OM, Sony α, Konica α, Konica Minolta α, Four-Thirds.

The company and product names shown in this manual are the trademarks or registered trademarks of their respective companies.