PYSER-SGI LIMITED
PNP- Pocket Scope
Operator's Manual

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OPERATOR'S MANUAL

FOR

PNP- 2+
PNP- XD4
PNP- HG
PNP- XR5
PNP- XH72
PNP- Gen 3

POCKET SCOPE

Table No. 4

LIMITED WARRANTY

The manufacturer of this **POCKET SCOPE**, has provided a limited warranty to the original purchaser. It was attached to the manufacturer's terms and conditions of sale.

General troubleshooting (Cont.)

No	Symptom	Proable Cause	Corrective Actions
3	Poor image quality	a. Dirty or fogged objective lens.	a.Clean lens with lens cleaning tissue. If lens is internally fogged, send unit to repair/ maintenance facility.

Table No. 4
General troubleshooting

No	Symptom	Proable Cause	Corrective Actions
1	No visible image	a. Objective lens cap has not been removed. b. Battery cover loose. c. Incorrect Battery polarity. d. Weak Battery.	a. Remove cap. b. Tighten cover. c. Re-insert Battery correctly. d. Replace Battery
2	Image Flickers.	a. Faulty intensifier tube.	a. Send unit to repair/ maintenance facility.

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Chapter 3

TROUBLESHOOTING

3.1 General Troubleshooting

The following table presents faults which may occur in the **PNP-**. In case of malfunction, identify the matching description under the Symptom heading and carry out the corrective actions until the fault disappears. If the fault cannot be corrected by carrying out the specified actions, transfer the **PNP-** to a repair/ maintenance facility.

Chapter   *1*

DESCRIPTION

1.1 System description

PNP- is a powerful, multi-purpose pocket-sized monocular night scope. The pocket scope is designed to be used either as a stand-alone night vision device or in combination with a wide variety of standard video, still-photo or CCTV equipment.

The **PNP-** is a powerful tool for covert night-time observation and intelligence-gathering purposes using standard photographic media, as well as an effective aid to night-time field missions.

PNP- employs an image intensifier tube characterized by high resolution and a clear, bright image. It is equipped with its own IR LED - type illuminator, which provides additional, close-range covert illumination, when ambient light is insufficient - especially effective inside buildings etc. A unique feature is the standard

"C" mount for the objective lens, enabling standard CCTV camera lenses to be used. Special purpose adaptors enable the **PNP-** to be mounted onto a wide variety of 35mm SLR and video cameras (including CCTV cameras). Thus, standard photographic equipment can be quickly turned into powerful, effective night-time devices, dramatically enhancing your intelligence gathering and observation capability.

As a stand-alone night scope, **PNP-** is small and lightweight enough to be unintrusive. It may be easily hand-held, using a grip or a strap and can be mounted onto a facemask.

Fig. No. 8
PNP- Installation on CCD camera

CCTV (CCD) CAMERA

CCTV (CCD) RELAY LENS

PNP- POCKET SCOPE
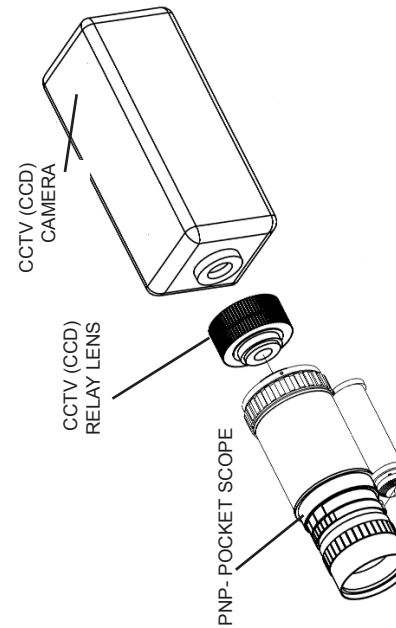
2.7 PNP- Operation with CCD cameras

2.7.1 Installation

1) Mount the CCD relay lens to the **PNP-** eyepiece (after removing the eye guard).
2) Mount **PNP-** with relay lens to the CCD.
3) Mount the desired objective lens to the **PNP-.**

2.7.2 System operation

1) Direct the system to the required scenery.
2) Turn **PNP-** and CCD camera on.
3) Set **PNP-** objective lens aperture to its maximum opening.
4) Adjust eyepiece diopter until sharpest screen is obtained in the monitor.
5) Adjust objective lens focus ring while observing an object until the sharpest image is obtained in the screen.

1.2 PNP-Specifications

Optical

Magnification x 2 standard 50mm lens
  Field of view 20º

Objective lenses
  Mounting type "C" mount (1"-32 TPI) interchangeable
  Standard lens 50mm, F1.4
  Lens options All range of "C" mount lenses including zoom, tele and wide-angle

Eyepiece
  Focal length 25mm
  Diopter adjustment +2 to -6 diopter
  Eyeguard Flexible plastic, removable (for adaptor mounting)
  Mounting thread M28 x 1.25

Specifications (Cont.)

Controls

Operating switch   Rotary-type three-position: OFF, ON, IR

Electrical

Power source   Twin 1.5V "AA" size alkaline battery

Operating time   112 hours (viewing), 30 hours (viewing with IR LED illumination)

IR source
    Type   IR LED
    Output wavelength   880nM
    Output power   60mW/sr

2.6.2 System operation

1) Direct the system to the required scenery.

2) Turn **PNP-** and Handycam on.

3) Set **PNP-** objective lens aperture to its maximum opening.

4) Adjust Handycam zoom until full **PNP-** phosphor screen is seen in the Handycam view finder.

5) Set **PNP-** eyepiece diopter to midway.

6) Adjust objective lens focus ring while observing an object until the sharpest image is obtained in the Handycam view finder.

**Fig. No. 7
PNP- Installation on Handycam
video camera**

PNP- POCKET SCOPE

HANDYCAM VIDEO
CAMERA RING
ADAPTOR

HANDYCAM VIDEO CAMERA
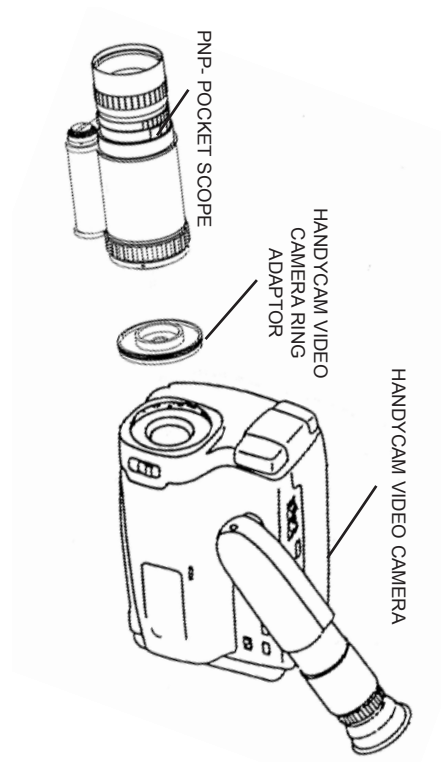
Physical

Dimensions   (LxWxH)
                  100x49x63mm

Weight   260 gr. (excl. battery
                  & objective lens)

Tripod Mount   Standard ¼ UNC
                  threading

Construction   Black, aluminium
                  rubber finish.
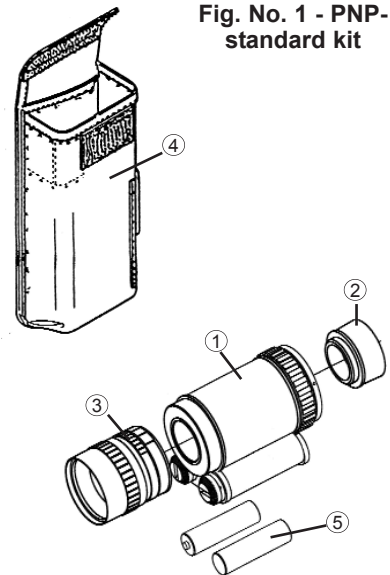
1.3 PNP- Standard equipment and accessories

Fig. No. 1 - PNP-standard kit

2.6 PNP- Operation with Handycam video camera

2.6.1 Installation

1) Use any Handycam (Sony, Sanyo, Panasonic etc….) with 37mm threaded objective lens.

2) Mount the Handycam ring adaptor to the **PNP-** eyepiece (after removing the eye-guard).

3) Mount the **PNP-** with the adaptor, to the Handycam objective lens.

4) Mount the desired objective lens to the **PNP-.**

5) Install the system onto a tripod, if required.

2.5.2   System operation

1)   Set the SLR camera objective lens to the infinity mark (∞); aperture to its maximum opening.

2)   Direct the system to the required scenery.

3)   Turn **PNP-** on.

4)   Set **PNP-** objective lens aperture to its maximum opening.

5)   Adjust eyepiece diopter until the sharpest phosphor screen is obtained through the SLR eyepiece.

6)   Adjust objective lens focus ring while observing an object until the sharpest image is obtained through the SLR eyepiece.

7)   Adjust the shutter speed according to the SLR lightmeter.

TABLE NO. 1
PNP- Standard equipment list

No.	Equipment	Qty
(1)	**PNP-** pocket scope	1
(2)	Eye guard	1
(3)	50mm F1.4 objective lens	1
(4)	Carrying pouch	1
(5)	1.5V "AA" size battery	2
(6)	Operator's manual	1
(7)	HANDYCAM video camera ring adaptor	1
(8)	35mm SLR ring adaptor	1

TABLE NO. 2
PNP- Optional accessories

Equipment
CCTV (CCD) relay lens Face-mask Face-mask adaptor Carrying case Helmet mount lanyard

Fig. No. 6
PNP- Installation on 35mm SLR camera

35mm SLR CAMERA

35mm SLR RING ADAPTOR

PNP- POCKET SCOPE

OBJECTIVE LENS
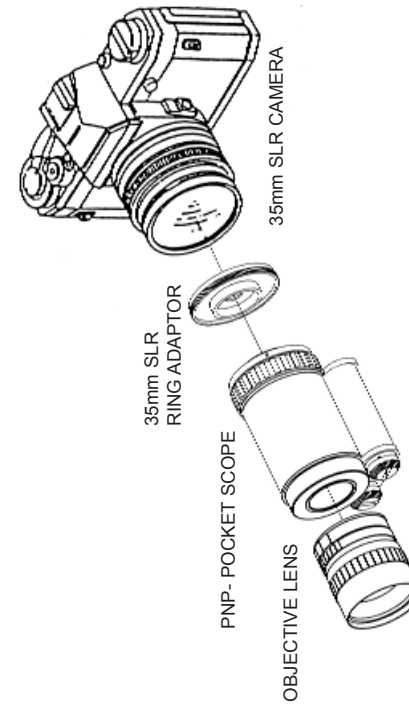
2.5 PNP- Operation with 35mm SLR cameras (interchangeable lenses)

2.5.1 Installation

1) Use any SLR camera with 35-50mm focal length lens.
2) Load a high sensitivity film B/W (400+1600 ASA) and set the camera accordingly.
3) Mount the SLR adaptor to the **PNP-** eyepiece, (after removing the eyeguard).
4) Mount the **PNP-,** with the SLR adaptor, to the camera lens (use standard adapting ring if required).
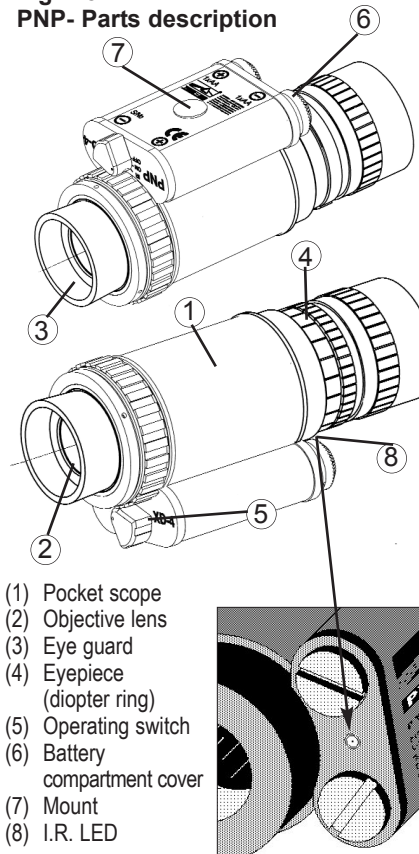

ATTENTION

The SLR adaptor fits a 49mm filter thread. If your SLR filter thread is different, attach to standard intermediary adaptor from 49mm to your SLR Filter thread.

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5) Mount the desired objective lens to the **PNP-.**
6) Install the system onto a tripod, if required.

1.4 PNP- Main parts

Fig. No. 2
PNP- Parts description

(1) Pocket scope
(2) Objective lens
(3) Eye guard
(4) Eyepiece (diopter ring)
(5) Operating switch
(6) Battery compartment cover
(7) Mount
(8) I.R. LED

1.4.1 Objective lens

One of the unique features that makes the **PNP-** so versatile is the "C" type objective lens mount.
The **PNP-** is supplied with a standard 50mm F1.4 lens that can be easily changed with a wide range of "C" mount lenses and SLR lenses with "C" mount adaptors including zoom, tele and wide-angle lenses.

1.4.2 Image intensifier

The **PNP-** utilizes a range of tubes characterized by low weight and high gain, which also reduces the dazzle effect which normally occurs when viewing a bright light source through an image-intensifier night scope.

1.4.3 Eyepiece assembly

The eyepiece has a 25mm focal length and a diopter adjustment of +2 to -6 diopter. A removable and flexible plastic eye guard enables interfacing the **PNP-** to 35mm SLR and video cameras (including CCTV cameras) using special-purpose adaptors fitted to the same threading (see Fig.No.5).

Equipment list
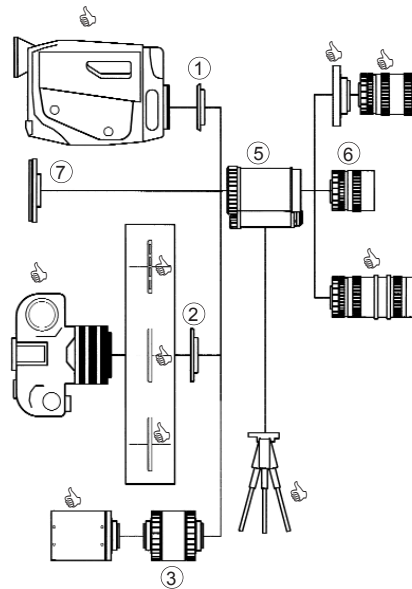
(1) Handycam video camera ring adaptor
      (for 37mm threaded filter)
(2) 35mm SLR ring adaptor
      (for 49mm threaded filter)
(3) CCTV (CCD) relay lens
(4) **PNP-** pocket scope
(5) 50mm F1.4
(6) Eye guard

☝ Items normally provided by customer.
     Available at camera supply stores.

2.4 PNP- Applications

Fig. No. 5
PNP- Applications

1.4.4 I.R. LED Illuminator

The **PNP-** is equipped with a built-in I.R. LED-type illuminator which provides additional, close-range covert illumination when ambient light is insufficient.
The illuminator is activated using the operating switch.

1.4.5 Operating   switch

Operation of the scope is controlled by a three-position rotary switch:

- OFF - All power off.

- ON   - The scope is on enabling night vision.

- I.R   - The scope is on and the built-in I.R. LED illuminator is activated.

1.4.6 External mount

The **PNP-** has a standard ¼ UNC threaded hole in its lower part that enables attachment of tripod, or face mask.

Fig. No. 4
PNP- Face mounting

2.3 PNP- Operation with face-mask

2.3.1 Face-mask adjustments

1) Fully loosen forehead and face straps.
2) Loosen chin strap. Ensure one of its ends is free of its snap fastener.
3) Pull face-mask over head.
4) Tighten mask against face, face straps first.
5) Draw chin straps through buckle and tighten.

2.3.2 PNP-Installation

1) Install the face-mask adaptor on the **PNP-** and tighten.
2) Align the adaptor with face-mask socket. Push and mount the scope in the face mask.
3) Adjust scope distance from eye using eye relief buttons.
4) Operate the **PNP-** by turning the operating switch to "ON" position.
5) Set objective lens aperture to its maximum opening.
6) Adjust eyepiece diopter until the sharpest phosphor screen is obtained.
7) Adjust objective lens focus ring while observing an object until the sharpest image is obtained.

Chapter 2

OPERATING INSTRUCTIONS

CAUTION

The PNP- is a delicate electro-optical device - handle it with care!

WARNING

Permanent damage to the PNP- may result if the PNP- is used in normal room illumination or bright ambient light. Do not direct the PNP- at a bright light source such as the sun, street lights, vehicle lights, or other bright light source, otherwise permanent damage may occur to the image intensifier tube.

2.1 Battery installation

1) Ensure operating switch is in OFF position.
2) Open battery compartment covers by unscrewing caps.
3) Insert battery into compartment, notice the polarity marking (see Fig. No. 3).
4) Close battery compartment covers.

2.2 Operation

1) Prior to use remove protective lens cap.
2) Turn the operating switch to ON or I.R. position if illuminator use is needed.
3) Set objective lens aperture to its maximum opening.
4) Adjust eyepiece diopter until the sharpest phosphor screen is obtained.
5) Adjust objective lens focus ring while observing an object until the sharpest image is obtained.

Fig. No. 3
Battery installation