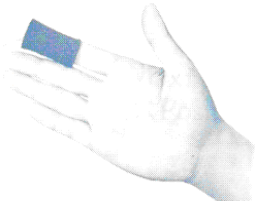

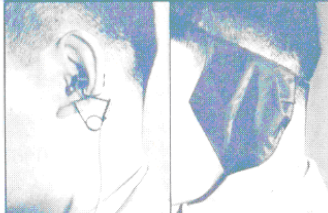


# PHOTOELECTRIC PLETHYSMOGRAPH PICKUPS

## MPP-3 series

Designed for Recording Photoelectric Plethysmogram, or Monitoring Peripheral Pulse Rate

The MPP-3 series of pickups is designed to detect a photoelectric plethysmogram or the presence of a pulse in the peripheral vessels and to measure a change in the pulse rate. Any variation in the volume of blood at the peripheral body site is detected and converted into an electrical signal by the combination of a source lamp and a CdSe photocell. The MPP-3 series comes in three different configurations as illustrated to meet your specific application. When using the pickup, the Resp./Plethysmo Coupler AR-650H is required.

MPP-3A (fingertip, roll-on)	MPP-3B (fingertip, clip-on)	MPP-3C (earlobe mounting)
		
For short-term measurement of either the photoelectric plethysmogram or the pulse rate.	For short-term measurement of either the photoelectric plethysmogram or the pulse rate.	For either photoelectric plethysmogram or pulse rate measurement on an earlobe. A foreign light shielding cover is supplied with the pickup.

### SPECIFICATIONS

- 1) **Frequency Response:** 0.1 to 50Hz
- 2) **Output Voltage:** approx. 5mV, in combination with the AR-650H.
- 3) **Net Weight:** (excluding cord):  
MPP-3A; 5g/3B; 30g/3C; 7g

### SAMPLE SYSTEM COMPOSITION

Polygraph Systems RM-6000/6200/6300, Mini-Polygraph RM-6100



## GENERAL

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The MPP-3 series of pickups are designed to detect a photoelectric plethysmogram or the presence of a pulse in the peripheral vessels and to measure a change in the pulse rate. Any variation in the volume of blood at the peripheral body site is detected and converted into an electrical signal by the combination of a source lamp and a CdSe photocell.

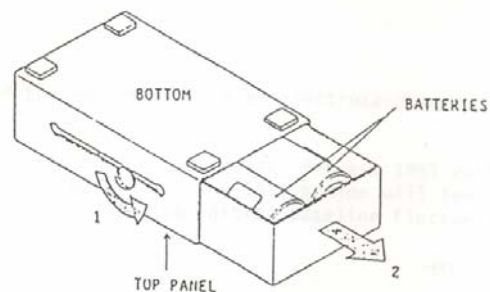
This variation is recorded by using an electrocardiograph (ECG) or a recorder equipped with a high sensitivity amplifier. Power for the lamp is supplied from the MPP-3U Power Unit using two batteries.

## PRECAUTIONS

1. Recording sensitivity can be adversely affected if the body site perfectly clean or if the patient is cold and suffering from poor circulation. For optimum results, ensure that the body site is clean and warm. During cold weather make sure the patient is warm and if necessary rub the body site to stimulate blood circulation.
2. Make sure the batteries are functioning normally. Weak batteries cause the lamp to dim and result in a low reading sensitivity. The standard batteries used with this model are IEC R20, SIZE D or JIS UM-1.
3. The highly sensitive photocell is subject to AC interference (50Hz or 60Hz) when used under fluorescent lighting. This distorts signal measurement. Shield the pickup from outside light sources using the light shield strap provided with Model MPP-3A (finger-tip or roll-on type) or the light shield cover supplied with Model MPP-3C (earlobe-mounting type).

## REPLACEMENT OF BATTERIES

1. Before replacing the batteries, switch off the plethysmograph. Use a coin to loosen the two screws on either side of the power unit.
2. Invert the power unit container.
3. Replace the batteries using either batteries. Make sure the polarity of the batteries is correct.



## SPECIFICATIONS

Frequency Response: 0.1 to 50Hz

Output Voltage: 5mV (Approx) (finger tip / earlobe)

Power Source: Two 1.5V, IEC R20, Type D, or JIS UM-1 batteries

## Dimensions and Net Weight:

MPP-3U; 130 x 40 x 75 (W x H x D) (mm). 300 grams (Approx) (with batteries)

MPP-3A; 11 x 4 x 17<sup>1</sup>/<sub>4</sub> (mm). 5 grams (Approx) (with batteries)

MPP-3B; 22 x 22 x 40 (mm). 30 grams (Approx) (with batteries)

MPP-3C; 10 diameter x 9 (mm). 7 grams (Approx) (with batteries)

## STANDARD ACCESSORIES

1. MPP-3U Output cord ----- 1
2. MPP-3C Light shield cover ----- 1

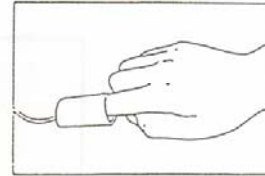


## INSTRUCTIONS FOR USE

### 1. PLACEMENT OF PICKUPS

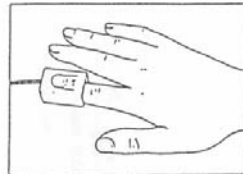
#### MPP-3A FINGER-TIP, ROLL-ON TYPE

Place the detection part of the pickup on the measuring site as illustrated. Wrap the finger with the light shield strap. The tightness of the pickup strap greatly affects the waveform shape and sensitivity. Adjust the tightness of the strap to obtain best results.



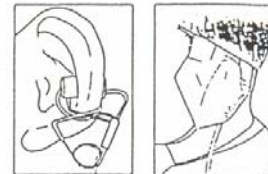
#### MPP-3B FINGER-TIP, CLIP-ON TYPE

Insert the finger tip snugly into the pickup as shown. If the spring is too tight, widen the pickup cover.



#### MPP-3C EARLOBE MOUNTING TYPE

Clip the pickup on the earlobe as shown, and protect it with the light shield cover.



### 2. TAKING A PLETHYSMOGRAM

Connect the pickup to the MPP-3U Power Unit and the output cord to an electrocardiograph or amplifier/recorder system.

Turn the unit ON. The light on the pickup indicates the unit is ready. Depress INST button for several seconds to obtain a stable plethysmogram waveform. The INST button will temporarily short-circuit the internal circuit and stabilize the initial baseline fluctuation.

The recording waveform may fluctuate during measurement if the measuring site is not secure. If this happens, depress the INST button and wait until the waveform stabilizes.

The GAIN control is provided to adjust the output level. When using the plethysmograph with an ECG with a standard sensitivity of 10mm/mV, adjust the GAIN to the correct proper waveform amplitude on the recording paper.

