



Owners Manual

Motion Sensing TV Signal Switch

Introduction

This device is designed to encourage users to maintain a minimum level of performance on an exercise bicycle for an extended period of time. It incorporates proximity sensors to detect rotation of the wheel. So long as this motion continues above a threshold speed, the electronic switch passes a signal to a TV set. When the motion slows below that speed or stops altogether, the TV signal is blocked.

The threshold speed and the dropout delay may be adjusted to suit the user. A bypass switch is included on the unit to permit normal TV operation when the exercise bicycle is not in use.

Safety Considerations

This device must be used under responsible adult supervision. It must never be used to encourage or compel physical performance inappropriate for the health and physical condition of the user. Access to moving parts must be prevented at all times while the exercise bicycle or other application is in motion. Wires and cables must be arranged so that there is no possibility of a tripping hazard. Wires and cables should be protected from strain to avoid damage to the internal electronic components and to the wires themselves.

Physical Description



The Motion Sensing TV Signal Switch consists of an aluminum box measuring approximately 4¼ x 2¼ x 1½ inches. A TV Cable connector (standard type F) is provided to connect to a TV Cassette player or other device, and another TV Cable connector (also type F) for connecting to the TV set. (Cables not included.)

A power supply unit measuring approximately 1¾ x 1¾ x 2½ inches is attached to the switch unit by a A bypass switch on the side of the unit allows normal

operation of the TV set when the exercise bicycle is not in use. *Note: the power supply must be plugged in to provide a good quality TV signal through the unit.*

The motion detector elements include two sensing elements with mounting brackets for installation on the exercise bicycle frame, and a single magnet that mounts to the rotating wheel using adhesive foam tape. The motion detector elements are connected to the switch unit using a standard telephone extension cable (not provided).

Note: four-wire cable is required; some telephone extension cables have only two wires, and cannot be used with this system.

Installation and Setup

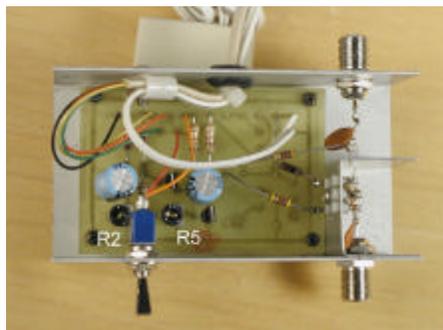
1. Install the Motion Activated TV Switch between the TV Cassette player (or other source, such as a cable TV channel selector) and the TV set. Use standard TV coax cables with "Type F" connectors. Plug the switch unit power supply into an outlet and turn on the Cassette and the TV set. Normal TV picture and sound should be present when the bypass switch is in the "bypass" position, but the picture should gradually deteriorate and become unusable when the switch is placed in the "bicycle" position.



Note: the switch unit was designed to operate on low-numbered TV channels, such as channel 3, normally used to carry the signal from the cassette player to the TV set. The switch will pass all normal analog cable

channels through when in the "on" or "bypass" condition, but will typically not completely turn off signals above channel 6. If the switch unit is unplugged, the TV switch will be in an intermediate state, neither completely on nor completely off.

2. Mount the moving magnet unit on the rotating wheel of the exercise bicycle and mount the sensor units on the frame so that the magnet passes within about ¼ inch and parallel to each of the two sensor units. Ideally, sensor units should be spaced diametrically opposite along the wheel so that the timing between the magnet passes is approximately equal. Unequal spacing will work correctly, but the sensor positions must be arranged so the time to pass from sensor "B" to sensor "A" is shorter than the time to pass again from "A" to "B".
3. Use tie-wraps, tape, or other means to secure the sensor cable to the exercise bicycle frame. Make sure the cables cannot become entangled in the mechanism. Tie the cable securely so that an accidental tug on the cable cannot put a strain on the sensors.
4. Connect the sensor cable to the Motion Activated TV Switch unit using a standard 4-conductor telephone extension cable. Route the cable carefully to avoid any possibility of tripping people or snagging moving toys or appliances.
5. Set the switch on the Motion Activated TV Switch unit to the "bicycle" position. The picture and sound should gradually become unusable while the bicycle is stopped. When the bicycle is moving, the TV signal should become clear.
6. The bicycle wheel speed required to turn on and maintain the TV signal can be adjusted by rotating the internal control "R2" inside the switch unit. This control is found to the left of the bypass switch on the circuit board. (See the accompanying photograph.)



Note: this control is fragile. Do not use force. Start with the control in approximately the middle of its 270° rotation range. Rotate clockwise to require a higher speed, and counter-clockwise to require a lower speed. It is easier to set this control if the turn off delay control (next item) is set to a shorter time. After the speed is set correctly, the turn off delay can be set to the desired time.

7. The length of time required for the TV switch to turn off can be adjusted by rotating the internal control "R5" inside the switch unit. This control is found to the left of the bypass switch on the circuit board. (See the accompanying photograph.)

Note: this control is fragile. Do not use force. Start with the control in approximately the middle of its 270° rotation range. Rotate clockwise to lengthen the turn-off delay, and counter-clockwise to shorten it. Set this control long enough to avoid having the TV signal drop out during each turn of the wheel when the bicycle is operating at minimum possible speed. Be aware that it will always take much longer to turn off after operating at a high speed than it will after operating at minimum speed.