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Piccoboard 11/99 CE

Best.-Nr. 720635 (35 Mhz), 720640 (40 Mhz) 720641 (41 Mhz), 720672 (72 Mhz/JR), 720673 (72 Mhz/Futaba)

Ikarus Piccoboard

The Ikarus Piccoboard is a custom-produced multi-function control system optimised for the Eco Piccolo.
This sophisticated electronics system is equipped with no less than 3 microprocessors designed to integrate the many functions of the Piccoboard and to provide flawless performance from this revolutionary micro package.
The Piccoboard comprises a high spec FM receiver, a state of the art piezo gyro system, two digital speed controllers, an electronic tail stabilisation and mixing system, plus a power management system with battery elimination circuitry (BEC).

The integrated tail mixing system and piezo gyro removes the requirement for a specialist helicopter transmitter. A standard aircraft 4 channel transmitter is all that's required.
Furthermore, no tail rotor servo is required; considerably improving tail stability and performance.

Technical data

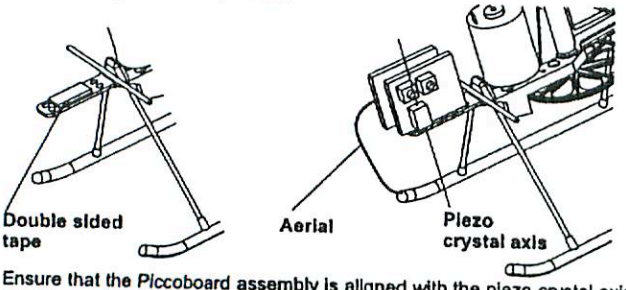
Weight	:	19g
Battery	:	7-8 cells
Motor current drain	:	up to 5A
BEC	:	5V
BEC Output	:	0.8A peak, 0.3A continuous
Dimensions	:	40 x 25 x 20mm

Receiver specification

Modulation	:	FM (PPM)
Sensitivity	:	2 microVolt
Channel spacing	:	10kHz
Intermediate frequency (IF)	:	455kHz
Aerial length	:	40cm

Installation

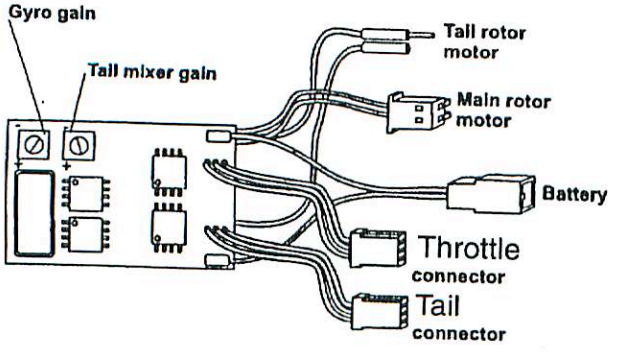
Install the Piccoboard using double-sided tape and pay particular attention to the orientation of the Piccoboard onto the Piccolo radio tray.
N.B. The sensitivity and mixer potentiometers must be uppermost and the piezo crystal (the metal cased component labelled 'Tokin') must be to the bottom exactly as illustrated below.



Ensure that the Piccoboard assembly is aligned with the piezo crystal axis exactly parallel with the helicopter main shaft.
WARNING! Incorrect positioning will render your helicopter either impossible to fly or difficult to control!

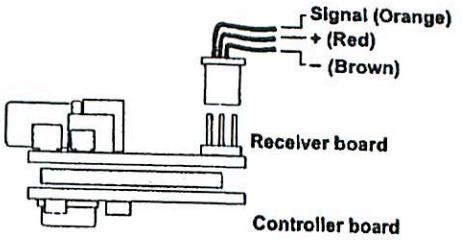
Piccoboard connection

The Piccoboard, in fact, consists of two boards; the receiver board and the control board. Note that emerging from the face of the control board (see diagram below) are two universal connectors (throttle control and tail rotor control) that must be inserted into the appropriate connectors located on the receiver board.

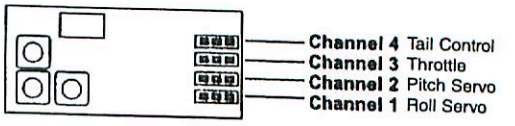


Servo and control connectors

Pay careful attention to the polarity of the connectors as illustrated below.



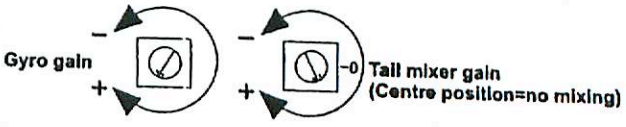
Receiver board



N.B. Carefully check that servo connectors and board connectors correspond with the channel numbering system used by your transmitter before switching on.

Set-up

The Piccoboard has two trimmer potentiometers on its upper outer surface. They control gyro gain and tail rotor mixer gain.
Using a small jewellers screwdriver, carefully rotate these trimmers clockwise to between 75% and 90% of their full travel. This is a standard setting giving stable flight using most modern transmitters.



Transmitter stick positions and automatic neutral positioning

The Piccoboard has automatic neutral selection and positioning. When you switch on, the in-built microprocessors recognise the throttle stick position as the low throttle or motor off setting. For technical people; the pulse width between full speed and low speed is 0.8 millisecond. If your transmitter generates a 1.0 millisecond pulse width in the motor off position, then full power will generate a 1.8 millisecond pulse.

Check that your transmitter throttle servo reversing switch (if your transmitter has servo reversing) is set to normal (as opposed to reverse).

Check that your throttle stick is in the low throttle position.

Check that your transmitter tail rotor channel reversing switch (if your transmitter has servo reversing) is set to normal (as opposed to reverse).

Check that your transmitter tail rotor control stick is in the centre (neutral position).

If you are using a helicopter transmitter, switch off all throttle/tail mixing systems and gyro control systems.

Switching on

Thoroughly read and understand these instructions before switching on.
Remove the blades from your helicopter before operating your Piccoboard for the first time. Make sure that your helicopter is firmly secured before checking control operation for the first time. Ensure that no loose objects or clothing are near the motors. Finally, after you switch on; you must wait for around 5-7 seconds while the microprocessors calibrate the control settings.

DO NOT MOVE THE HELICOPTER OR OPERATE THE TRANSMITTER STICKS DURING THIS CALIBRATION PERIOD.

When calibration is complete; a red LED lights on the Piccoboard. Your system is now ready to operate.

When stopping operation, unplug the flight battery first, then switch off the transmitter.