

Product Manual

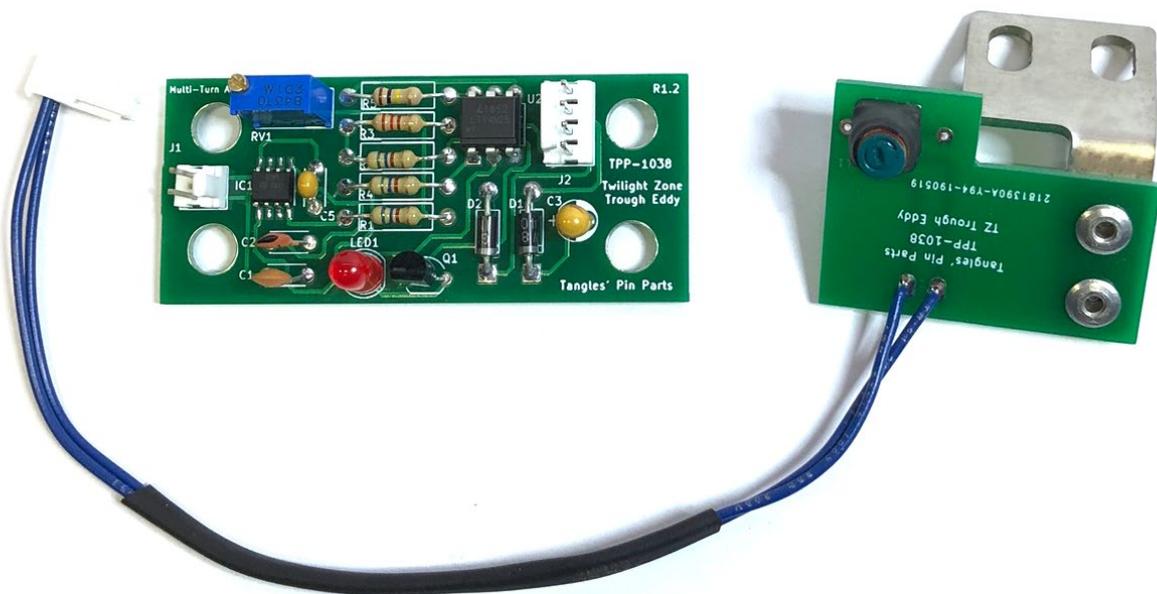
Twilight Zone Trough Proximity Sensor

P/N **TPP-1038**



Tangles'
Pin Parts

Replaces original parts A-16534 and A-16538



The Tangles TZ Trough Proximity board (TPP-1038) utilises a modern quality construction and highest grade components to deliver a reliable replacement part for the original A-16534 and A-16538.

This assembly boasts the following features:

1. Includes replacement Sensor coil and metal bracket. (replacing A-16538)
2. New design sensor coil offers greater detection distance.
3. Adjustable via a multi-turn potentiometer to provide the most reliable detection.
4. Multi-turn adjustment provides long term stability of calibration.

The TPP-1038 is a drop in replacement for the original Bally part and fits the original mounting holes. This part is supplied with 4 nylon mounting posts and a metal mounting bracket for the sensor coil.

INSTALLATION

Mount the sensor board with the two original self-tapping screws. The sensor mounting bracket allows for an adjustment of the distance between the lowest ball in the trough and the sensor coil. Adjust this distance to be 2mm to 3mm (See Picture 1).

Install the main circuit board using the supplied mounting posts and the original screws.

Plug the sensor into the 2 pin Molex plug.

Plug the wiring harness with the 4 wire Molex plug.

CALIBRATION

Adjust the Eddy Board after it and the sensor board have been installed into the machine.

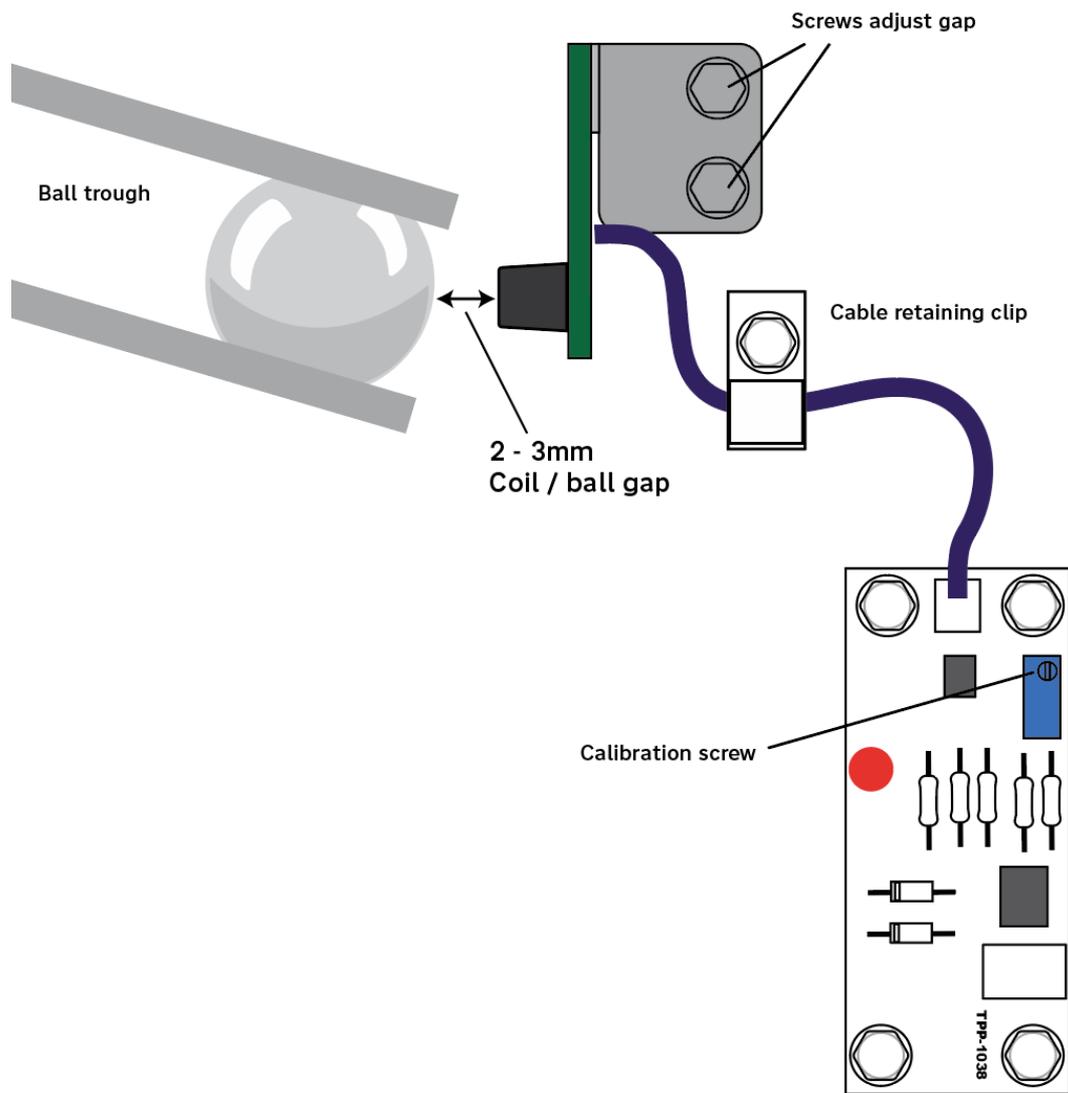
Adjustment must be performed with no balls in the ball trough.

Adjustment must be performed with the machine powered on.

The screw adjustment provided on the board is a multi-turn adjustment with 25 turns of motion.

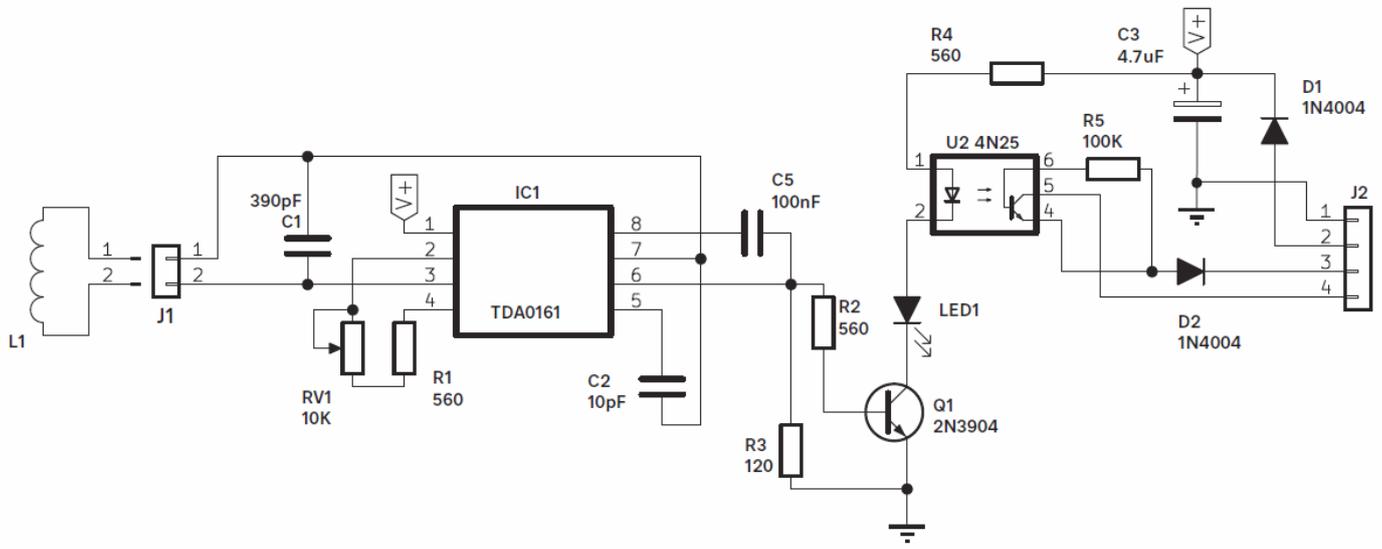
- Turn the adjustment screw anti-clockwise until the red LED comes on.
- Turn the adjustment screw clockwise until the LED just goes off.
- Turn the adjustment an extra quarter turn clockwise.

The calibration may now be tested by installing one (metal) ball in the ball trough. The detection LED should come on.



Picture 1

Illustration of Installation



TPP-1038 Schematic

PARTS LIST

DESIGNATOR	DESCRIPTION
U1	TDA0161
U2	4N25
Q1	2N3906
C1	390pF Disc Ceramic
C2	10pF Disc Ceramic
C3	100nF MLC
C4	4.7uF Tantalum
D1,D2	1N4004
R1,R2,R4	560Ohm ¼ Watt
R3	120Ohm ¼ Watt
R5	100K ¼ Watt
RV1	10K Bournes 3296W
J2	AMP 640456-4
LED1	LED Red 5mm

Trouble Shooting

Problem	Proposed Solution
LED Always on	Sensor coil not plugged in.
LED Always On	Remove balls and perform calibration procedure.
LED Always Off	Gap between sensor and ball too big. Set gap to between 2 and 3 mm.