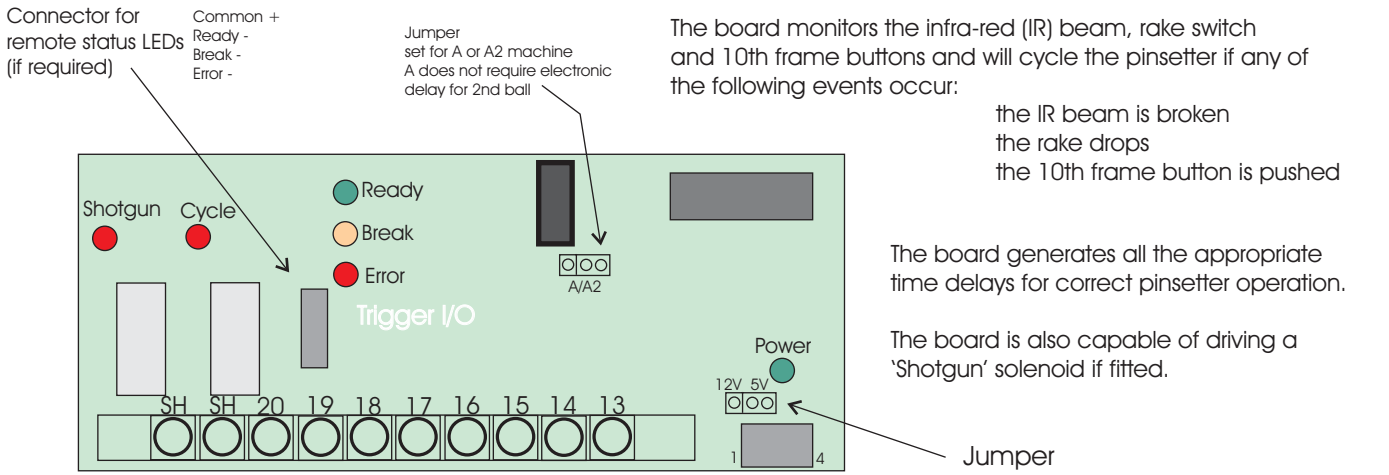




Infra-red Ball Trigger

For Brunswick A2 (or A conversion)



The board generates all the appropriate time delays for correct pinsetter operation.

The board is also capable of driving a 'Shotgun' solenoid if fitted.

Shotgun

Same connections as existing time delay board
[See page 2 for detail](#)

LEFT LANE

RIGHT LANE

Jumper set for 12V or 5V IR units

- 1 +5V or +12V
- 2 IR trigger input (IR trigger is normally 0V, goes to 12V when beam is broken)
- 3 Output from microcontroller to IR (used only on CS infra-red units)
- 4 Common -V

TIME DELAY VARIES WITH BALL SPEED

For correct operation of this board a Rake Switch must be fitted.

The 'Ready' LED indicates that the IR beam is OK.

If the beam remains broken for longer than ~1.2 seconds the 'Error' LED will light.

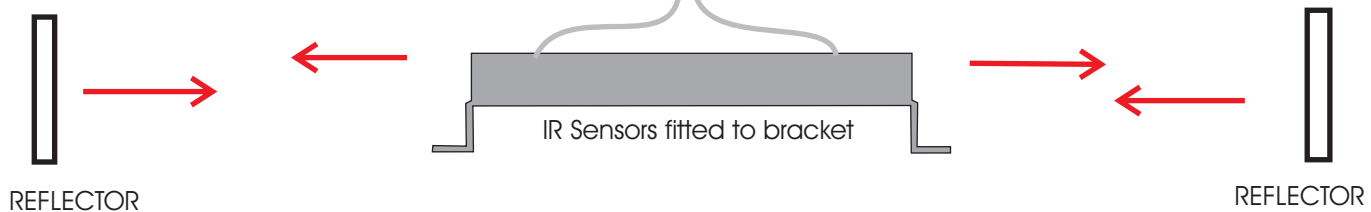
The pinsetter will still cycle on rake drop (if mech. link still fitted) or 10th frame button if the IR beam becomes inoperative.

If the IR beam is re-established the 'Ready' LED will indicate this after the next complete pinsetter cycle.

The 'Break' LED will flicker as a ball passes through the beam.

The 'Break' LED will flash if the rake is down when the pinsetter is first turned on.

The 10th frame button must be pushed to cycle the pinsetter and return to normal operation.

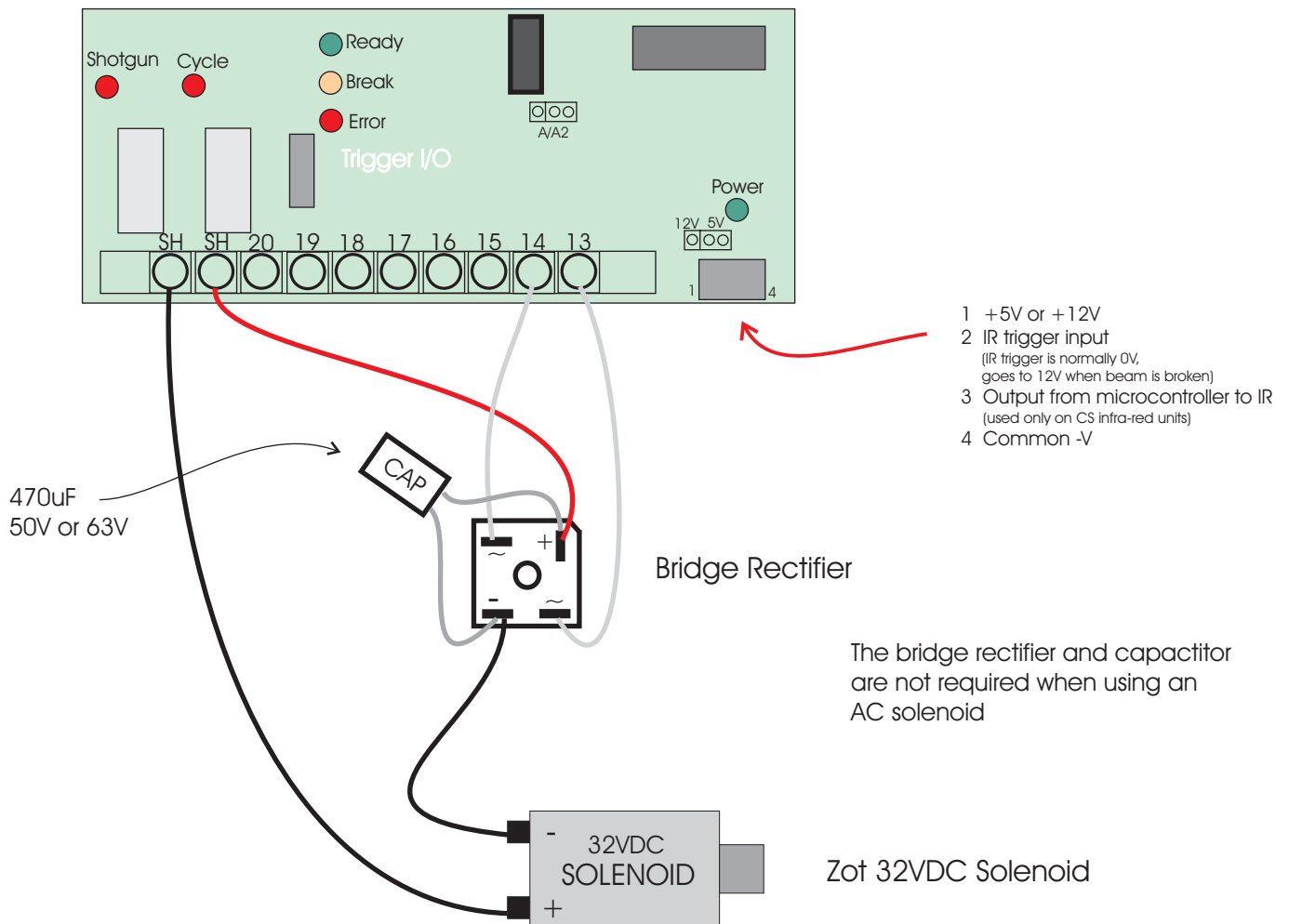


Connections to Time Delay board

- 13. AC in
- 14. AC common
- 15. 2nd Ball
- 16. Rake / Cycle common
- 17. Cycle return
- 18. Rake return
- 19. Cycle Solenoid
- 20. Cycle Solenoid
- SH. Shotgun Solenoid
- SH. Shotgun Solenoid



Connecting the 32VDC (fast rake drop) Shotgun Solenoid



The bridge rectifier and capacitor are not required when using an AC solenoid