

**Brunswick Tel-E-Foul Package
53-861076-000**

Introduction

The Brunswick foul detector is a microprocessor based system which has the capability to detect faults in the operation of the foul lights and alert the mechanic. It tests the level of the infrared signals upon power up and alerts the mechanic if the signal is blocked or marginal. It also detects if the foul lamps are bad and appropriately informs the mechanic.

After power on, if an error is detected, the unit will inform the mechanic by turning on the buzzer and flashing the foul lamps. If a marginal signal is detected, (approximately two signal level indicator lights on) the unit will issue a short beep. If it is the left lane, the tone will be constant. If it is the right lane, the tone will be stuttered. If no signal is detected, a long beep will be issued. Again, the pure tone will be the left channel and the stuttered tone will be the right channel. If a foul lamp is bad, two short beeps will be issued. After the buzzer alerts the mechanic, the lamps will alternately flash allowing the mechanic to see which lane pair has the problem.

The foul system will begin normal operation as soon as the error sequence is finished regardless if an error has been detected or not.

Instructions

1. Remove the foul light covers and all old electronics from both lanes. The new electronics has its own divider trim cover and will replace the current divider trim cover. Remove the existing divider trim cover and any other hardware to make room for the new unit.
2. Position the Brunswick foul light assembly so the left and right sensor blocks are in line with the foul lines. Approximate alignment is achieved when the center of the front lens is aligned with the front edge of the foul line. Verify the cover is properly placed with this alignment. If not, the sensor assembly can be moved back and forth by loosening the screws holding its platform to the base. When the Brunswick foul light assembly is properly set, screw it down to the deck with at least two screws in the mounting holes.
3. Position the two AMF/BW jumpers (Located on the printed circuit board at the end of the 6 position connector, JP1) for the configuration you are using. Refer to *Figure 1* for details on how to place the jumpers. **IT IS VERY IMPORTANT TO INSTALL THESE JUMPERS CORRECTLY. IF THE AMF POSITION IS USED ON A BRUNSWICK SYSTEM, DAMAGE WILL BE DONE TO THE AUTOMATIC SCORING UNIT.**

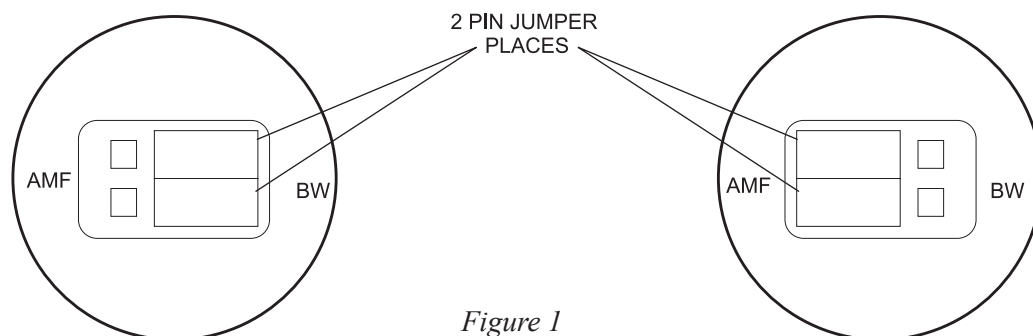


Figure 1

4. Install the two reflectors under the covers across the lane from each foul block. Use the two screws provided with each reflector and insure the reflector is both perpendicular to the lane surface and the foul line. It should also be centered in the cut out of the cover and centered on the foul line.
5. Plug the 6 pin connector with attached wires onto the J5 connector on the printed circuit board. Run the gray jacketed wire under the lane to the ball return cover under which you want to run the power cable to the masking wall. Connect this gray jacketed wire to one end of the long gray jacketed wire. Extend this long wire under the ball return cover and up the masking wall. Plug this end of the long cable into the wires from the transformer. DO NOT plug in the transformer at this time.

Skip step 6 if no automatic scoring is used

6. Connect the automatic scoring relays (Foul indicators) to the automatic scoring system with the wires from J5. The green/yellow pair is for the right lane and the gray/orange pair is for the left lane. These wires must be run under the appropriate lane and connected to the existing automatic scoring wires with the yellow wire nuts.
7. Plug the transformer into the 120 Volt AC power which controls the foul lights. Turn power on and verify the power indicator lamp is lit. Adjust each sensor block until all four signal level indicators are on. With four signal level lights on, the maximum signal strength is achieved. You should be able to get four lights on each lane but the system will work with only one light. Be sure to adjust the sensor block both vertically and horizontally to achieve the maximum signal strength. When the maximum signal strength is achieved, tighten all four screws on each sensor block bracket.
8. Test the unit by placing your hand between the reflector and the sensor block. This will break the beam. The buzzer should sound for about 2 seconds and the appropriate lamp will turn on for approximately 12 seconds. The unit will not retrigger until the lamp has gone out.
9. Install the cover by first marking the position for the hold down screw on the approach surface and drilling a 5/32 inch pilot hole. Then install the cover and screw it down with the 1/4 inch wood screw.
10. Test to insure the proper signal levels are still valid by turning the unit on. The lights should each flash briefly and no buzzer should sound. If the buzzer does sound, check the code for the problem and take the appropriate action. Generally, if the buzzer sounds, the cover is blocking the signal. Recheck your alignment.
11. To use one lane, just unplug the 5 conductor ribbon cable from the sensor block on the side you need to disable. The microprocessor will then stop testing that side upon power up.

SPECIFICATIONS	
INPUT VOLTAGE	120 VAC +/- 10%
CURRENT	200 Ma Max.
OUTPUT	The Appropriate output (Brunswick or AMF) is selected by jumper (JP1) on the PCB. Brunswick - Relay contact, 500 Ma AMF - 12 VAC, 1 Amp