

The following troubleshooting guide for Polara's original 8-wire Navigator Accessible Pedestrian Signal covers the most common symptoms and causes. Should you find any new unaddressed issues, please write down in detail the symptom(s) and any fixes you have found and send them to us so we can update this guide.

These troubleshooting guidelines assume that the system has been previously installed and was working properly before the listed symptoms occurred.

The Navigator uses a solid state electronic switch. It has no electrical contacts or replaceable parts. Unless a component fails or an abnormal mechanical condition occurs, you should never have a problem with the switch. It is designed to last for millions of actuations.

Should you remove the button diaphragm assembly you will see a small orange rubber pad. Just a light push on this piece of rubber should trigger the switch. **Note: Do not press hard on this piece of rubber or you will damage the switch.** The switch is not field replaceable. Should it fail you will have to replace the push button station.

Our control board which mounts in the ped head, is designed to monitor the voltage on the push button wires coming from the traffic controller. If the push button station repeatedly plays the message "Button Fault", this means the control board is not seeing the voltage on the button wires, typically due to a short or loss power. Additional details on this and other occurrences follow.

Navigator Troubleshooting / Repair Guide

Symptom	Possible Causes	Solution
<ul style="list-style-type: none"> • No sound at all, no vibration during walk, LED does not light. 	<ul style="list-style-type: none"> • Blown fuses. Check for voltage across fuses. If you see voltage, fuse(s) is blown. 	<ul style="list-style-type: none"> • Power down unit and replace fuse(s). Uses 0.5 amp slow blow 5mm x 20mm.
	<ul style="list-style-type: none"> • Power from source in ped head not getting to control board. 	<ul style="list-style-type: none"> • Check wiring and connections.
	<ul style="list-style-type: none"> • Catastrophic failure on control board. 	<ul style="list-style-type: none"> • Replace control board
<ul style="list-style-type: none"> • No sound but vibration and LED work 	<ul style="list-style-type: none"> • Bad speaker 	<ul style="list-style-type: none"> • Replace speaker
	<ul style="list-style-type: none"> • Failure of components on control board 	<ul style="list-style-type: none"> • Replace control board
<ul style="list-style-type: none"> • Unit is providing sounds but one sound is not playing or is garbled 	<ul style="list-style-type: none"> • Sound/voice IC has bad connection to socket on one or more pins. 	<ul style="list-style-type: none"> • Push on IC at location IC3 firmly while supporting board to ensure it is fully seated in header. If problem persists try removing and reinserting IC but be very careful to not bend the leads.
	<ul style="list-style-type: none"> • If this occurs after an IC is replaced, most likely one or more pins has become bent underneath. 	<ul style="list-style-type: none"> • If these steps do not fix the problem you can try replacing the voice IC (it may have somehow become corrupted) or replace the control board.
<ul style="list-style-type: none"> • No locate tone • No button click • No location message (if present) • No LED • Walk message works 	<ul style="list-style-type: none"> • Blown fuse on Don't Walk side. (Left side fuse) 	<ul style="list-style-type: none"> • Power down unit and replace fuse.
	<ul style="list-style-type: none"> • Dip switch is shut off 	<ul style="list-style-type: none"> • Change setting on dip switch

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Symptom	Possible Causes	Solution
<ul style="list-style-type: none"> • No sound or vibration during walk. Locating tone, button click and LED work during Don't Walk. 	<ul style="list-style-type: none"> • Blown fuse on walk side (right fuse) 	<ul style="list-style-type: none"> • Power down unit and replace fuse.
<ul style="list-style-type: none"> • Constant Call • Controller shows repeated triggering of button. Rapid re-triggering of button (rapid ticking sound occurs) either constantly or intermittently at button, usually after button is pushed. Additional symptom may include; voice on location may play a few times then "Button Fault" message starts playing. • Controller is seeing solid short. Repeating "Button Fault" verbal message at push button station. 	<ul style="list-style-type: none"> • Magnet has become detached from button diaphragm. 	<ul style="list-style-type: none"> • Replace button diaphragm assembly with a factory replacement or re-epoxy magnet to diaphragm assembly. If you choose to re-epoxy the magnet, roughen magnet surface, clean thoroughly with alcohol, then re-bond to diaphragm assembly. Keep fillet around outside of magnet to a minimum. Too large of a fillet will interfere with push button frame.
	<ul style="list-style-type: none"> • Failure of transient voltage suppressor (TVS) in the button or on the control board. 	<ul style="list-style-type: none"> • You must disconnect things to isolate source. First disconnect the two wires on the terminals labeled "Button" on the control board. If the call to the controller does not go away it is the TVS in the push button station. If the call to the controller goes away it is the TVS on the control board at location TVS2. Using a pair of dikes you can cut through the TVS. Try to not damage or rip off the PCB pads. This TVS is not critical to the operation and protection of the control board. Reconnect button wires to see if problem is gone. If it is still present, control board should be replaced.

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Symptom	Possible Causes	Solution
<ul style="list-style-type: none"> • Constant Call (Continued) • Controller sees a call and button is very sensitive to light touch following the vibration. 	<ul style="list-style-type: none"> • See symptom –“Button triggers with only very light touch” that follows. Try that repair. If symptom continues it is due to one of following causes. 	<ul style="list-style-type: none"> • Perform same repair as under symptom “Button triggers with only very light touch”
	<ul style="list-style-type: none"> • Air is trapped and causing button to trigger (this is rare) 	<ul style="list-style-type: none"> • Call factory to discuss options
	<ul style="list-style-type: none"> • Button switch has intermittent (embossed tape) connection 	<ul style="list-style-type: none"> • Call factory to discuss options
<ul style="list-style-type: none"> • Button won’t hold call long enough to get 3 second voice on location message 	<ul style="list-style-type: none"> • Bad button switch 	<ul style="list-style-type: none"> • Replace button station
<ul style="list-style-type: none"> • Repeating “Button Fault” message, but push button transmits a normal ped call. 	<ul style="list-style-type: none"> • Faulty wiring between pushbutton station button terminals and ped head control unit button terminals. 	<ul style="list-style-type: none"> • Correct faulty wiring

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Symptom	Possible Causes	Solution
<ul style="list-style-type: none"> • Button triggers with only very light touch 	<ul style="list-style-type: none"> • O-ring material behind button diaphragm has become compressed and is not holding button away from switch correctly. 	<ul style="list-style-type: none"> • Remove button ring and diaphragm assembly. (Be careful, diaphragm edges are very sharp and magnet is very strong. Do not set it near any other metal objects.) Inspect magnet, make sure it is still well bonded to diaphragm assembly. Try tugging on it with your fingers. It should remain firmly bonded to diaphragm. Note size of gap between ends of o-ring on frame. You will want to increase this gap by $\frac{1}{2}$ - $\frac{3}{4}$". Remove o-ring then restart both ends with the increased gap. O-ring will now be oversized to groove. Press it in at three positions leaving excess o-ring evenly over hanging groove then force o-ring into groove. This causes the o-ring to be denser which keeps the diaphragm further from the switch. Also, take diaphragm and push on the tabs opposite each other towards the magnet so they bend slightly. You want to get the diaphragm to bow slightly ($\frac{1}{16}$" to $\frac{1}{8}$") towards the magnet to move the magnet away from the switch. Reassemble diaphragm and ring to push button frame. Make sure diaphragm is properly seated and locked into ring. There should be a consistent minimal gap between the diaphragm and ring. If the gap varies, it is not properly seated.

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Symptom	Possible Causes	Solution
<ul style="list-style-type: none"> • Button rattles during vibration. (This is not a defect. Normal tolerance variations can cause this. If you find it objectionable follow solution) 	<ul style="list-style-type: none"> • Greater than desired gap between frame, diaphragm and ring because ring is improperly installed, or this is normal. 	<ul style="list-style-type: none"> • Ensure ring is properly installed and tight. If it is, apply a small bead of clear silicone between the ring and diaphragm, from the 2 o'clock position to the 10 o'clock so it is around approximately 3/4th of the ring. Using your finger to smooth and remove excess material so there is just a small amount between the ring and diaphragm. Allow curing and then check to ensure vibration is still easily detectable. If vibration is still strong but sound is still too loud, apply silicone around area previously not siliconed. If vibration is too weak remove some of the silicone.
<ul style="list-style-type: none"> • Volumes not loud enough 		<ul style="list-style-type: none"> • Call factory to discuss