

## Williams Star Trek: The Next Generation Extended Ball Guide Installation

The following document walk you through the installation of Pinball-Mods.com's [STNG Extended Lane Ball Guides](#) on a William Star Trek: The Next Generation Pinball machine. This upgrade is a bolt-on modification which requires no irreversible changes to your pinball machine. We recommend you read this document in its entirety prior to purchasing the product; then print it for your reference during the actual installation of the Ball Guides on your machine.

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### Tools/Materials Needed:

- Kit Contents
- Philips Screw driver
- A [Dremel sanding drum](#) or belt sander

### Optional Tools/Materials:

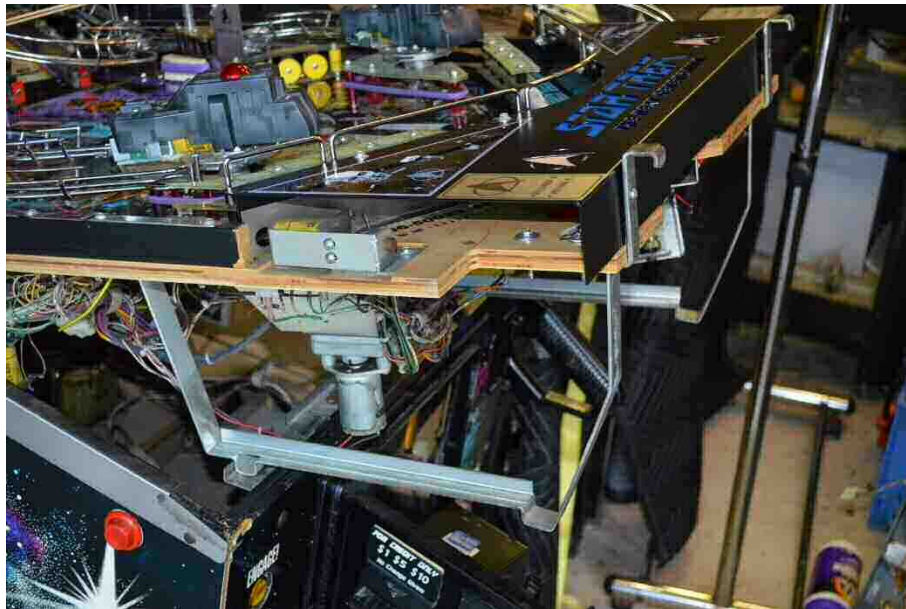
- A cordless power screwdriver such as a [Bosch PS21-2A](#)

The process to install this kit is so simple that earlier vendors did not bother to create install documents. The install should only take about half an hour. The kit reuses the standoffs, plastics, screws, and spacers from your currently installed guides. Save all the parts when you disassemble the existing guides. We recommend you do one side at a time so you have a reference if you need to remember how the parts go together.

The extended lane ball guides featured in this install document help reduce the rather large outlane gap present in the pinball machine by added as much as a ½ an inch to the flipper feeder lane. This reduces the ball drains to the outlane – but will not eliminate them entirely. Proper nudging of the game is still a required skill.

## STNG Lane Install (step by step)

- 1) Remove the lockdown bar and glass on your machine. Pull the playfield into its service position. I usually work from the left of my machine but you'll probably want enough room on both sides so that you can work in the flipper area.



*Figure 0.1 Playfield at Service position*

- 2) The kit comes with two stainless steel guides joined with a couple of “mousebites” to prevent them from rubbing together during shipping and helps prevent scratches. That said; you’ll need to separate these guides. To do this bend the two pieces back and forth at the mouse bites to break them apart.



Figure 0.2 Break apart guides

- 3) The mouse bites may interfere with ball travel; so, it’s best that you remove them with a [Dremel sanding drum](#), file, or belt sander before installation.



Figure 0.3 remove mouse bites

- 4) Let's start with the Left side. Disassemble the flipper ball guide by loosening the six Philips head screws. You don't need to completely remove them; just loosen them by about ½ an inch so the whole assembly comes loose. Once you clear the t-nut below the Playfield; the assembly will easily come off the playfield once step 5 is completed.



Figure 0.4 loosen Philips head screws

- 5) The last screw is a wood screw, spacer, and washer at the top of the lane guide to the left of the cannon. Remove the wood screw, taking care to not lose the washer or the small spacer... go back; re read that. (yes, I speak from experience! ) That washer is tiny and is the only thing protecting the wood from a spacer indentation. In figure 4 above; the wood screw is on the orange/black border right under the cannon wire form.

- 6) Lay out the lane assembly on your workbench. You'll see it's two plastic peices and the old ball guide separated by set of black spacers which snap into the holes of each plastic and ball guide.



Figure 0.5 lane assembly

The bottom ball guide should just slide off the screws once out of the game. Remove black spacers from the existing ball guide and reattach them to the new guide provided in the kit.

- 7) The new guide is labeled with an etched "L" for the Left side and a etched "R" for the right side. On both sides the etched sides go toward the playfield while clean sides face the player. This means you'll install the black spacers to the etched side of the ball guide.



Figure 0.6 Attach Spacers to Guide

Yes; I realized I switched to the right side for this picture; I did not grab a picture of the left side with spacers attached.

- 8) Now would be a great time to verify the bulbs in your lanes are not darkened or blown... or maybe replace with a set of LEDs if desired.
- 9) Slide the new ball guide back into the screws and reassemble in reverse. Save the old ball guides so you can reinstall if the game gets to easy with these new lane guides.

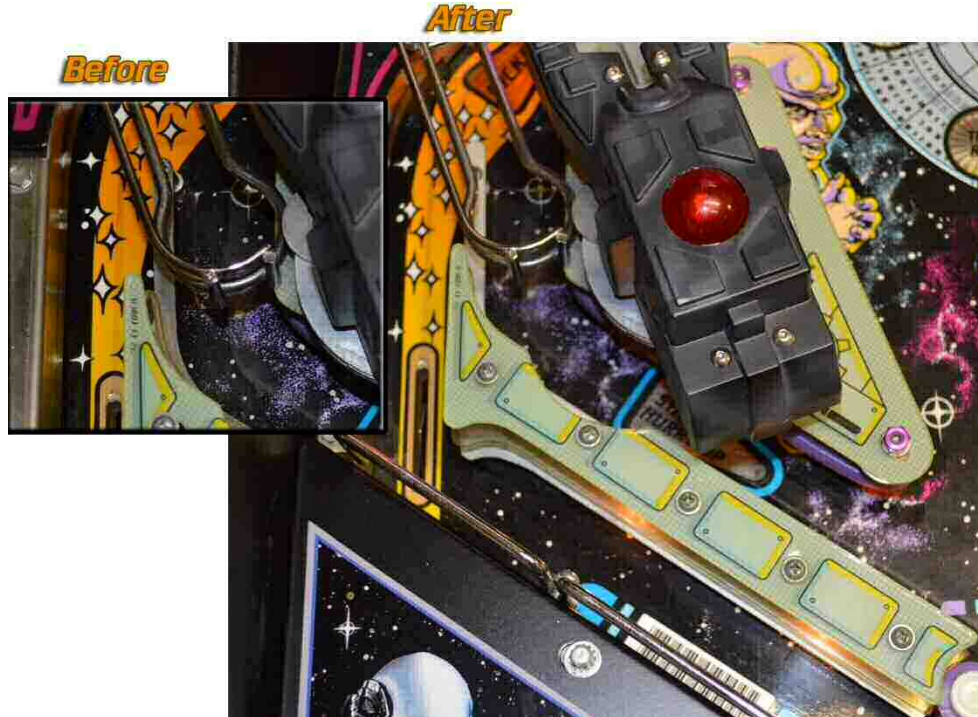


Figure 0.7 Before/After left install

Unfortunately; I don't have any tricks to reassemble the woodscrew, spacer, and washer with the cannon wireform still in the way. Just some patience and some clever finger manipulation should allow you to find the existing wood hole with the screw. I recommend you install the wood screw first leaving it loose until you get the other six machines screws installed. I did the wood screw first; then the machine screw closest to the flipper to get the lane guide "Square" then worked my way up the lane guide giving the woodscrew a final tightening last.

Take care when tightening down on the assembly; you do not want to crack these old plastics with a powered screwdriver set to "max". Just tighten enough to be snug; but not so tight that the plastic is developing a bow under the screws.

- 10) The right side is exactly the same as the left; just repeat the steps above.