NUMMECH PRODUCTS – SHOCKER/NERVE PIE FRAME

NOTE: This is an advanced installation process. These frames are NOT simple drop-in parts; you will need to permanently modify parts of the frame as well as your Shocker trigger. If done correctly, you can still use the components with other Shocker/Nerve frames.

Overview for installation procedure:

- Most triggers must be shortened on the backside
- Each frame comes with a 3d printed trigger pin bushing to reduce side-to-side wobble. The bushing might require modification if too tight.
- A longer pre-travel set screw is included for triggers with compatible threads; such as SmartParts SFT triggers (#4-48 thread)or NewDesignz SFT triggers (#6-32 thread)
- The frame uses a trigger stop component to hold the return spring. If using an SFT trigger, the trigger stop will need to be shortened.
- ONLY triggers with a vertical set screw will allow for pre-travel adjustment. Some other triggers can be used, but they will not have a pre-travel adjustment.

Master compatibility list:
Perform an internet search for "shocker pie frame compatibility", which will take you to a page on ZDSPB.com.
Direct link: www.zdspb.com/tech/mguide/shockersft/parts_frame_pieframe.html

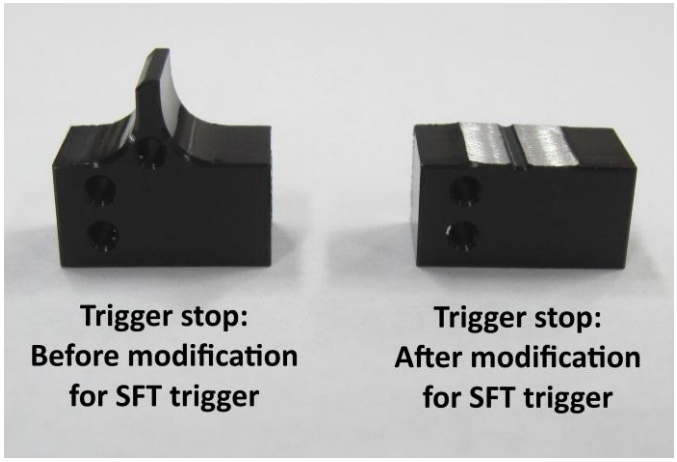
Tools required for installation and modifications:

1. Imperial/SAE allen key set
2. Handheld file that can be used on metals.
3. (Optional) Bench top vise to clamp the trigger between pieces of wood.
4. (Optional) Dremel or similar handheld cutting tool.
5. Low-strength Loctite or other threadlocker is recommended for use with trigger set screws.

Pie frame triggerstop modification:
Pie frames use a removable “triggerstop” component which acts as a post-travel stop for NXT triggers. If you wish to use an NXT trigger, no triggerstop modification is required.
However, if you wish to use an SFT trigger, you must file down triggerstop’s top area to accommodate the SFT trigger.

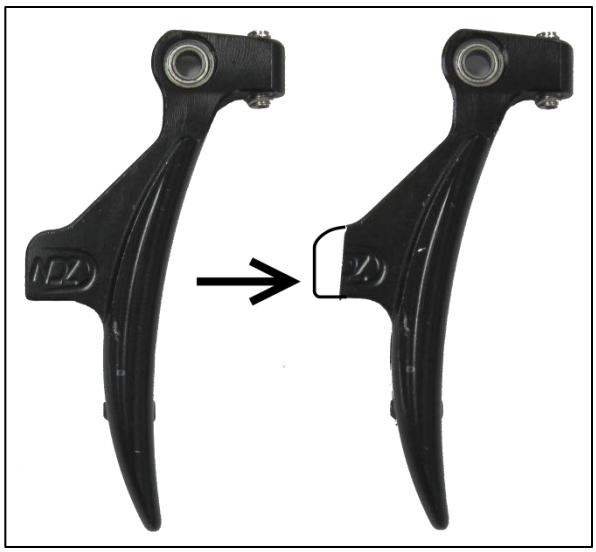
Pre-modified triggerstops are available from Nummech, or you can modify your own:

1. Remove the triggerstop from the Pie frame using a small punch or needlenose pliers. The pins are 1/16” (same as the powerswitch actuator pin).
2. If available, clamp the triggerstop in a benchtop vise between two pieces of wood.
3. Use a hand file, hacksaw, Dremel cutoff wheel, or any other tool to remove the top area of the triggerstop. (see picture on the right)
4. Drop the triggerstop back into the Pie frame then re-install the two 1/16” pins.



Note: replacement triggerstops are available from Nummech in the event that you wish to swap out one that is modified for NXT triggers with one that is un-modified for SFT triggers.

Shortening modification to the trigger's back side:



Pie frames have been redesigned to position your trigger and lower circuit board closer together. Therefore, most triggers will need to be shortened because they contact the microswitch too early in their swing. This is a permanent modification but does not prevent the trigger from being used in other markers. Follow these steps for modifying your triggers:

1. Remove the trigger's rear set screws so you can remove material from the area where they belong.
2. If available, clamp the trigger into a benchtop vise, between two pieces of wood.
3. Use a metal object to mark the trigger's backend approximately 1/8" or 3mm from the back. This is your target for the cutting modification.
4. Use a hand file, hacksaw, Dremel cutoff wheel, or any other tool to shorten the back end of the trigger. Be cautious to avoid cutting too much material, because you will NOT be able to put material back on!
5. Apply a SMALL dab of Loctite onto the set screws, then re-install them into the modified trigger.
6. Install the lower circuit board and modified trigger into the Pie frame. Test out the swing to examine the point at which the microswitch "clicks" when the trigger is pulled. You will need to perform adjustments to the microswitch firing point until the "click" is to your liking.
    a. If the microswitch is being correctly actuated by the firing point set screw, your task is complete.
    b. If the trigger still contacts the microswitch too early in its swing and it cannot be adjusted by the firing point set screw, more material must be removed from the backside of the trigger itself.

Note: you MUST remove the trigger's set screws prior to any trigger modifications. You will not be able to remove material surrounding the set screw, which could cause permanent damage to the screw and prevent it from being removed in the future. There is no alternative, the screws MUST be removed, and if they're stripped out then the only course of action is to use channel lock pliers or a benchvise to unscrew the stripped screw. If necessary, contact Nummech for replacing trigger set screws.

Triggers that use a vertical pre-travel set screw:

Two new LONGER half-inch set screws are included with each frame, which can be used with many triggers that utilize a vertical set screw for pre-travel adjustment. This includes the following triggers: Smart Parts SFT, New Designz SFT, Violent NXT, Custom Products NXT, and Critical NXT.

To install the new pre-travel set screw…

1. Remove the stock pre-travel set screw from the trigger.
2. Apply a small dab of Loctite onto the new ½" length set screw.
3. Install the new set screw into the top of the trigger.
4. The trigger must be installed into the Pie frame before the pre-travel adjustment can be fine-tuned.

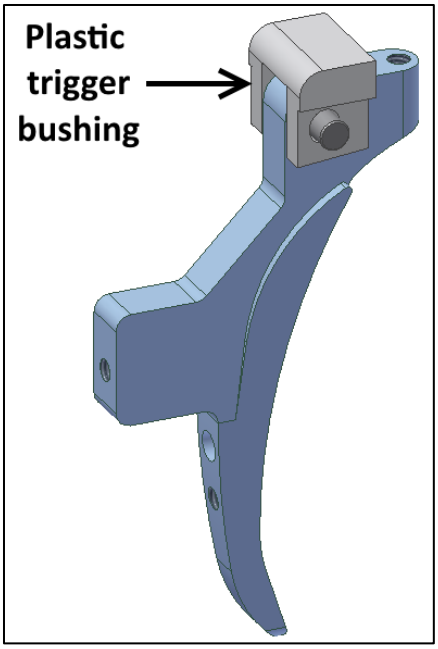
The longer screw is usually required because the Pie frame's trigger position is slightly further downward compared to factory frames. The longer screw is necessary to reach the marker body's underside surface.

Triggers that do not use a vertical pre-travel set screw:

Triggers not using a vertical set screw are not recommended for use with a Pie frame. Triggers of this style include Smart Parts NXT, New Designz NXT, Custom Products SFT.

These triggers can be installed, but they will NOT have pre-travel adjustments. Your options are limited to somehow making a homebrew adjustment, permanently modifying the frame or trigger, or simply living with the built-in trigger swing with no adjustment.

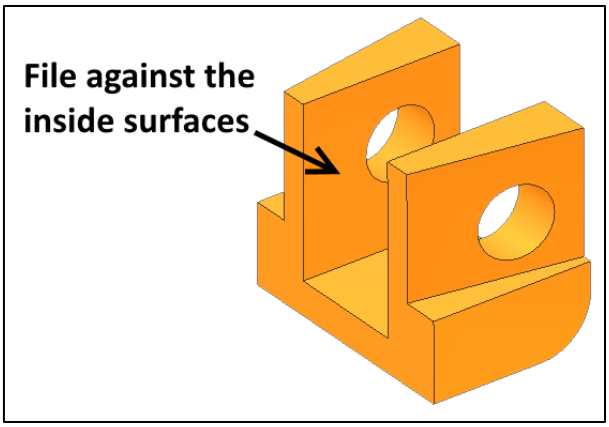
Trigger pin bushing:



Pie frames use a plastic "trigger bushing" to help reduce side-to-side trigger slop. This component wraps around the top of the trigger and is held in place using the trigger's pivot pin.

The trigger bushing will usually need to be widened to allow a custom-fit with your specific Shocker/Nerve trigger. Every trigger is slightly different thickness, so a custom fit is often required. Follow these steps to fit your bushing:

1. Install your trigger, pin, and return spring within the Pie frame. Test out the trigger's swing and see if the swing is to your liking. If it's acceptable, you are done and need not proceed. If the trigger has too much side-to-side wiggle, continue on.
2. Remove the trigger and install the plastic trigger bushing in its approximate location within the Pie frame. Now install the trigger and pin like normal. Chances are the trigger will be too wide to fit within the bushing – THIS IS NORMAL.
    a. If the trigger slides in but has too much resistance to movement, you know that only a small amount of material needs to be filed off from the bushing.
    b. If the trigger doesn't even fit within the bushing, you know that a larger amount of material must be filed off from the bushing.



3. Disassemble the components and use a hand file to slowly and carefully remove a small amount of material from the inside surface of the trigger bushing. See the right diagram. Only remove a SMALL amount of material, then check if the trigger fits within the bushing. If the trigger fits, try installing the components in the Pie frame and check the trigger swing.
4. Repeat the process of slowly removing material until the trigger bushing no longer presses on the trigger, allowing it to swing freely to your liking. Be sure to check with the trigger's return spring, since this will affect the trigger's feel.
5. If you remove too much material, you will not be able to use the trigger stop. A spare trigger stop is included with the frame in case you need it.

Note: the trigger bushing will be a tight fit when the trigger pin is installed through it within the Pie frame. The bushing has a tapered shape because the inside of the frame is tapered, so pushing the trigger bushing forward can cause it to squeeze inward on the trigger. When checking the trigger pull, be sure to install the trigger's pivot pin to ensure the bushing is in the correct location.