

# DD13 HARDSTART with Starter faults 677-3

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[Justin Patterson](#) 3 posts since Feb 15, 2019

**DD13 HARDSTART with Starter faults 677-3** Nov 27, 2020 9:18 PM

I recently ran into a unit (GHG 14 DD13) that presented with a Hard Start/Extended cranking (up to 2 minutes). Followed all of the hard start/no start troubleshooting and replaced the LPRV on the High pressure fuel pump. After getting the system primed, I now had a NO START condition. I had double checked all my work and could not find a reason with anything I had done. I ran a manual FSIC when cranking and while all of my fuel pressures were well within spec, the desired rail pressure never came off of 0 psi. There was a stored fault in the MCM (677-3 Engine Starter Relay Shorted to High Source) that I hadn't looked at. After troubleshooting that fault, and replacing the Starter Relay mounted on top of the Starter assembly, the desired rail pressure was now coming up as expected. We suspect that the short in the relay was taking enough voltage from the MCM to prevent it from firing.

- [\(3AKJGHDVXGSHE3242\) 11-6-2020 1548.26.DrumrollLog](#) 65.7 KB
- [\(3AKJGHDVXGSHE3242\) 11-9-2020 0947.31.DrumrollLog](#) 100.6 KB



[Steve Reppard](#) 125 posts since Jun 29, 2020

**Re: DD13 HARDSTART with Starter faults 677-3** Nov 10, 2020 2:22 PM

Reading your notes and I'm a little confused. You stated fuel pressures were in spec and then stated desired was 0psi? Starter relay should not effect rail pressure readings or commanded.



[Justin Patterson](#) 3 posts since Feb 15, 2019

**Re: DD13 HARDSTART with Starter faults 677-3** Nov 24, 2020 11:30 PM

Steve Reppard wrote:

Reading your notes and I'm a little confused. You stated fuel pressures were in spec and then stated desired was 0psi? Starter relay **should not effect rail pressure readings or commanded.**

I agree, they should not effect the desired rail pressure at all. I threw me for a loop, and I was not at all convinced that the issues where related. ALL the fuel pressures indicated that the unit should fire, except for the commanded, which stayed at 0 psi when cranking. Once the starter relay was replaced, the commanded fuel pressure came up and matched actual, and the unit fired with no hesitation.



[Steve Reppard](#) 125 posts since Jun 29, 2020

**Re: DD13 HARDSTART with Starter faults 677-3** Nov 25, 2020 12:15 PM

Do you have logfiles of before and after?

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[Justin Patterson](#) 3 posts since Feb 15, 2019

**Re: DD13 HARDSTART with Starter faults 677-3** Nov 27, 2020 9:19 PM

I have attached them to my original post now.