Kerbal Space Program - Bug #7332

TVR-400L Stack Quad-Adapter to weak in combination with Vector engines

03/12/2016 10:57 AM - rudi1291

Status:	Needs Clarification	**Start date:**	03/12/2016
Severity:	Low	**% Done:**	0%
Assignee:			
Category:	Parts		
Target version:			
Version:	1.0.5	**Language:**	English (US)
Platform:	Windows	**Mod Related:**	No
Expansion:			

Description

Description: The TVR-400L Stack Quad-Adapter (2.5m to 4x1.25m) is to weak in combination with Vector engines running at 100%

Steps to Replicate:
1) Build a simple craft using the TVR-400L and mount 4 vectors below it (or use the one i uploaded)
2) Load it onto the launchpad/runway
3) Leave the throttle at 50% and press space to activate the engines. Nothing should fall off, all engines fire.
4) Press X to cut the engines.
5) Press Z to set all engines to 100% immediately. The TVR-400L (and its engines) fall off, everything else stays on.

Expected: The TVR-400L stays on the craft like all the other adapters.

Result: TVR-400L falls off, making it useless (more or less) in combination with the Vector.

Workarounds:
- Use another adapter
- Use struts
- Use cubic octagonal struts to mount the engines. Looks (almost) the same, but works

Notes:
I donÂ´t know if this is really a bug, 4 Vectors are damn powerful and put a lot of stress on that part. But all the other adapters donÂ´t show this behaviour.

I tested the same thing with swivel engines. They donÂ´t cause it to fall off.

History

#1 - 03/13/2016 10:14 AM - Kasuha

Vector is very powerful engine, I would even say it's overpowered - it is the most efficient engine for lifters, you can place any amount of it below any fuel tank, and its power and its gimbal are constant source of dynamical issues such as rocket bending and oscillations, or (like in this case) joint snapping, that make players install Kerbal Joint Reinforcement mod because they're lazy to take care of it in a realistic way (such as gradually increasing thrust or reducing unnecessarily large gimbal range of the engine; SAS has issues with it too though).

When I tested this, joint *above* the bottom fuel tank was snapping before the joint between the adapter and the fuel tank. That suggests there is a shockwave propagating through the ship caused by abrupt introduction of thrust and that causes these problems.

The only surprising observation I made was that when I used the "Mk2 stack quad adapter" (1.25 m variant quadcoupler) it was not happening. Greater length of the adapter might have played role in dampening the impulse here.

#2 - 07/17/2016 09:44 AM - TriggerAu

- Status changed from New to Needs Clarification

Files

Structural Test Parts Vector.craft	167 KB	03/12/2016	rudi1291
screenshot101.png	2.68 MB	03/12/2016	rudi1291
screenshot100.png	2.68 MB	03/12/2016	rudi1291
Structural Test Parts Swivel.craft	167 KB	03/12/2016	rudi1291