

# Kerbal Space Program - Feedback #23186

## Intake Issues

07/15/2019 06:57 AM - m\_creech

<b>Status:</b>	New		
<b>Severity:</b>	Low		
<b>Assignee:</b>			
<b>Category:</b>	Parts		
<b>Target version:</b>			
<b>Version:</b>	Not Applicable	<b>Language:</b>	English (US)
<b>Platform:</b>	Windows	<b>Mod Related:</b>	No
<b>Expansion:</b>	Core Game		

### Description

Two things to cover, first a specific one and then a general comment:

The Adjustable Ramp Intake (Radial) creates a great deal of drag for a part of its size and mass, and this is due to the part's length and the angle of attack (AoA).

To demonstrate I built a small drone, and simply by changing the wing angle of incidence got a tremendous performance boost.

Rotating the wing leading edge slightly upward decreased the fuselage AoA by 3.28 degrees, part drag for the intake dropped from 2.67kN to 0.77kN, and the top speed increased almost 240 m/s (the numbers can be found in the included pics). That drag was enough to stop the drone from going beyond Mach 1 in level flight, ironically caused by the supersonic optimized intake. Just for curiosity's sake, I swapped the ramp intake for a Small Circular Intake on the faster version of the drone, and it became the fastest of the three by a small margin.

This brings me to the second issue: The intakes in KSP don't make much sense. Intake design is critical to aircraft performance. Just as an example, modern fighter aircraft are tremendously powerful with huge thrust-to-weight ratios, but they mostly can't go as fast as the old Concorde could, not nearly for as long, and it was supercruising without afterburners. Similarly the SR-71 would not have functioned without that inlet design, which is something KSP specifically tries to evoke with the Engine Pre-cooler, Shock Cone Intake, and Whiplash engine. I find that in the game, apart from thermal tolerance and that drag issue above, any combination of intake and engine will work at any speed without penalty.

I have seen the developers adjust rocket engine performance several times now due to their being "unrealistic", "unbalanced" or what-have-you. A subsonic pitot-type intake can't go Mach 4 in the real world. I think the learn-through-play ethos of Kerbal would be helped by an edit here.

### Files

Slow.png	377 KB	07/15/2019	m_creech
Faster.png	339 KB	07/15/2019	m_creech
Fastest.png	393 KB	07/15/2019	m_creech