



Vaccon custom vacuum solutions enable high speed rail manufacturers to provide a safer ride

Customer Challenges:

Utilizing compressed air in passenger trains to operate both the air-braking and vacuum toilet systems often puts a strain on both, posing a safety risk for the braking system. To eliminate these issues, a train equipment manufacturer sought a more efficient solution to reduce the toilet’s air consumption. Vaccon worked with the customer engineers to develop a custom vacuum pump which consumes less air, improves the system’s performance, and fits into the existing toilet assembly.

Application Requirements:

Consumption Restraints:	Air consumption must be reduced to conserve air for the braking system
Maintain Current Performance:	Maintain existing vacuum levels and evacuation speeds with reduced air consumption
Fit into Current Footprint:	Replace original pump without modifications to the installed system
Accept All Existing System Connections:	Pump must utilize current system fittings, valves and other hardware
Chemically Compatible Construction:	Pump materials must withstand the waste compounds found in the system
Minimum Product Lifetime:	At least 5 years between maintenance or unit replacement

Vaccon Solution:

Vaccon designed and manufactured a custom vacuum pump that consumes less air, alleviating the strain when both systems are operating, without sacrificing the toilet’s performance. With more available air, the train braking system operates safer and more reliably. The Vaccon solution consists of a custom pump body for a J Series pump providing a drop in place solution that utilizes the existing valves and fittings of the current system assembly. The Vaccon solution is easy to install, compact, cost effective, and meets all the customer’s design and performance requirements. Vaccon continues to establish collaborative relationships with customers ensuring we deliver the most innovative and efficient vacuum product solutions to improve productivity and maximize profits.

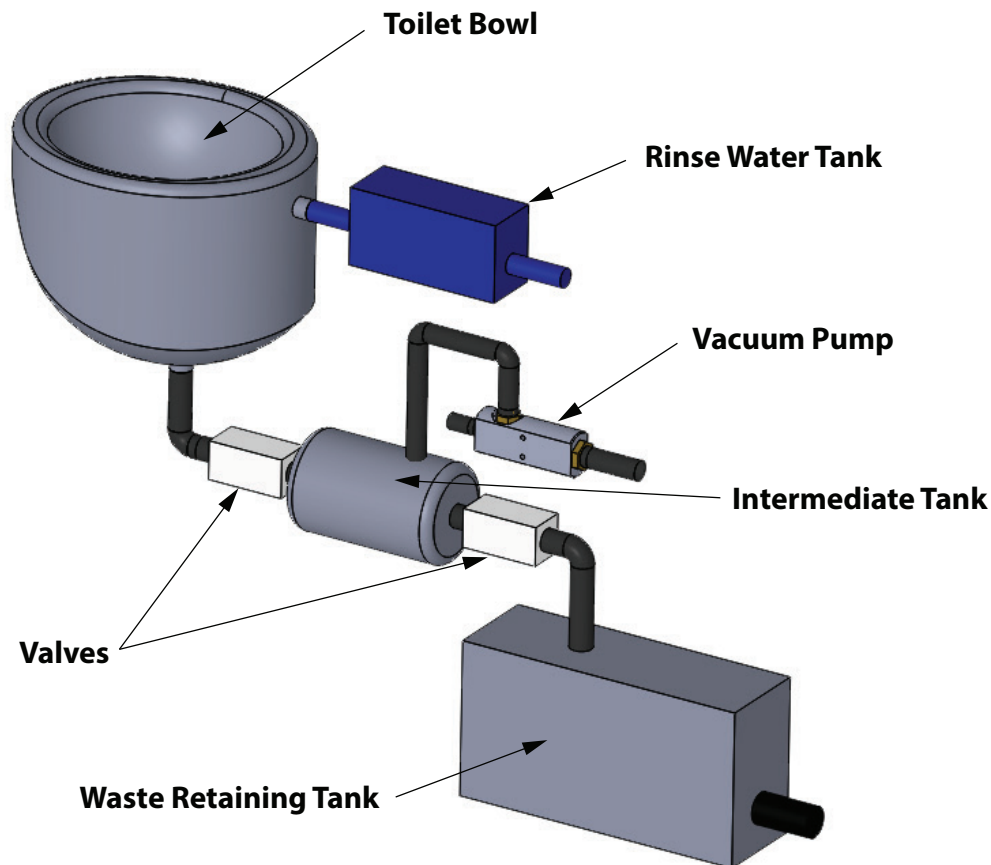
Vaccon Benefits:

Safer:	Reduced air consumption conserves air for the critical on-board air braking system, with safer operation even when both systems are working at the same time
Saves Money:	Efficient air usage without sacrificing performance, no additional equipment needed
Saves Time:	Quick installation – drop in place pump mounts into current system without further modification
Efficient:	Lower air consumption while maintaining evacuation speed and vacuum level
Compatible:	Pump accepts all existing connections, valves and fittings.
Reliable:	Matter passes straight through pump without clogging – maintenance free operation with no downtime
Durable:	Constructed from PVC and stainless steel to withstand corrosive waste materials
Long Lasting:	Vaccon’s pumps easily meet the 5 year performance guarantee

Application Note: Vacuum Toilet - Waste Management System

Typical Operation

1. Rinse water turns on
 2. Flush valve opens for a specified interval, vacuum pump is activated
 3. Vacuum pump pulls waste to intermediate tank
 4. Flush valve closes
 5. Vacuum pump shuts off
 6. Valve to the waste retaining tank opens
 7. Gravity releases waste into retaining tank
- In some cases, dual valves on the pump operate both tanks



The vacuum toilet waste management solution in this application note is applicable to the following industries (NAICS/SIC codes):

336510 / 3743	Railroad & railway rolling stock equipment manufacturing
336411 / 3721	Airplane/Aircraft manufacturing
423860 / 5088	Transportation equipment manufacturing
336210 / 3711	Heavy duty vehicle / bus manufacturing
336612 / 1234	Sailboat / yacht manufacturing