## The Truth About Air at the Cage Level PART II



In the late 1980's, Allentown customers requested an IVC that provided dryer bedding to extend cage change outs to at least two weeks, while also providing safer micro- and macroenvironments for their animals and their personnel. Allentown initially responded to this request with a system that delivered air through the lid, yet abandoned this method after discovering that it could not meet Allentown's high performance standards.

Enter ACL – Allentown's system for delivering a low velocity, gentle wash of air across the bedding, and exhausting air at the top of the cage. ACL keeps the bedding dryer, longer. It also helps delay the creation of ammonia, keeps CO2 down, and oxygen levels up...all while using less air, less energy, and less pressure, which results in far less potential for leakage and short-circuiting and no dead spots in the cage.

#### Why IVCs?

Static caging was limited in its ability to provide good micro- or macroenvironments in the lab. And, the regular cage changes at three to five days used massive amounts of bedding and created an enormous amount of labor. Enter ventilated cages, which lengthened the change-out cycle by keeping the bedding dryer longer, reduced labor and expense while improving environmental conditions for animals and staff.



#### ACL vs. AIL

A gentle wash of low velocity HEPA-filtered air into the cage allows a system that operates on less pressure, less energy, less air and no dead spots within the cage. While other cage ventilation systems, including air in the lid systems, try to overcome their deficiencies with more air, more energy, more potential for noise and vibration and more potential for leakege due to higher pressure...



they are working a lot harder than they have to. Allentown's ACL is the better system, using LESS while providing the best micro- and macroenvironments in the industry. Less air, less pressure, less noise & vibration and less energy means the best research environment for your research and your personnel.

#### Air Through the Lid

Mother Nature dictates that heated air must rise. When air was introduced through the cage lid it fought against that natural movement of air and also against physical impediments such as the food hopper. This disrupted the airflow enough so that it didn't reach the bedding. Subsequently, the bedding remained moist and became



a breeding ground for ammonia. Turning up the air improved conditions a bit, but also increased the potential for noise and vibration and the use of more energy...and also added more pressure within the cage.

#### Leaks!!

Aside from physiological effects that higher pressure may have on research animals, IVCs ventilated with high pressure have a greater potential for leakage. When a system depends upon high pressure, any compromised seal-



point on a rack or cage will be exploited. The air under higher pressure will seek out the point of least resistance and make its way out into the room. ACL uses low pressure for three main reasons: 1. To avoid adding an unnecessary variable to the cage environment which may impact the animal's physiology. 2. Low velocity air is easier to provide and produce, and has the least impact on the micro and macroenvironments. 3. We don't need high pressure for our IVC system to operate.







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### Containment

The name of the game is containment...right? That's the reason animal transfer stations, safety cabinets and IVC's are in use in the first place...all provide containment and all have exhaust plenums that are negative to the room in order to keep that containment. So why then would anyone want an IVC system that didn't contain???



Some Air in the Lid systems which operate at high pressure can potentially have exhaust ports that can become positive to the room depending upon blower settings and how many racks are attached to that blower. What does that mean? It means dirty, unfiltered, contaminated air blown directly into the room. It means you just paid a whole bunch of money for a fancy static rack.

Allentown's ACL system will never have an exhaust plenum that is positive to the room. You can set our blowers to any ACH, in positive or negative modes...and our exhaust plenum will always be negative to the room. That is just more proof of the efficiency and hands-down superiority of the Allentown ACL system.

Want proof? There's a simple test you can do while changing the ACH settings on your IVC blowers. It's called the tissue test. Go to www.TruthAtCageLevel.com to learn all about it. Here's a hint...Allentown passes every time!





www.TruthAtCageLevel.com