

Flow Control for the IsoLair Granular Applicator

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Why Flow Control ?

Air Speed  Ground Speed

Flight is by airspeed

Application Calibration is by ground speed

50 knt airspeed 5 knt headwind	= 45 knt ground speed
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50 knt airspeed 5 knt tailwind	= 55 knt ground speed
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= 20 % variance in application

Why Flow Control ?

Gravity Feed  Flow Change

Full Hopper Flow  ¼ Hopper Flow

Same micrometer setting  Same Flow

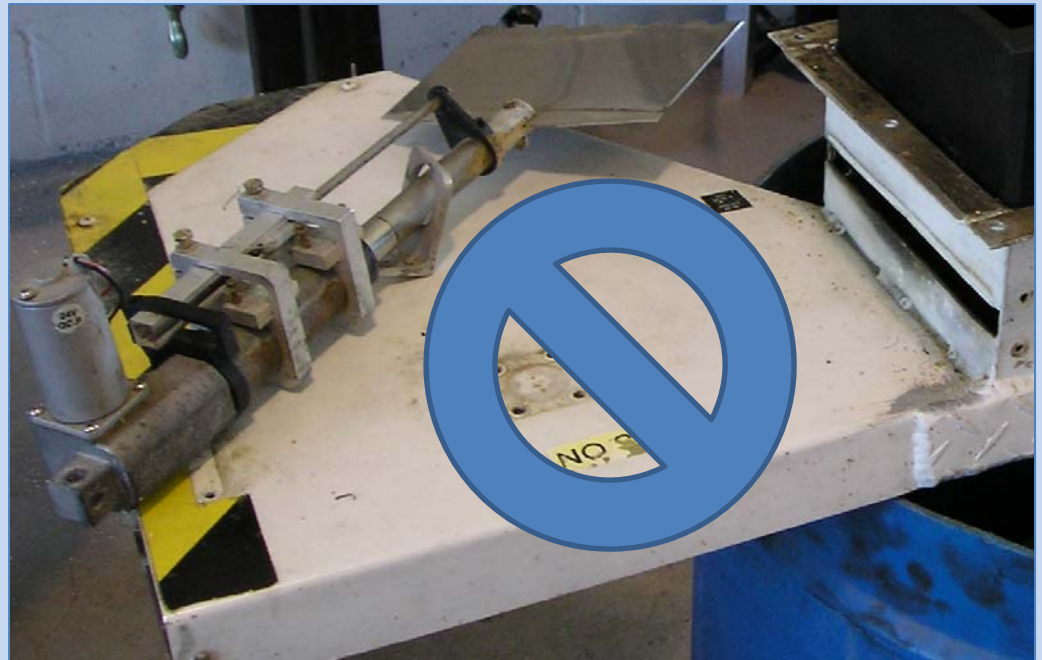
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Delivery of Granules

Consistent

Repeatable

VariableIn-Flight



Solution

Variable Positive Displacement Delivery

Impeller Driven

Impeller delivers a set amount

Impeller speed can be controlled

Challenges

Rigid Impeller

Crushes granules

Jamming of impeller

Flexible Impeller

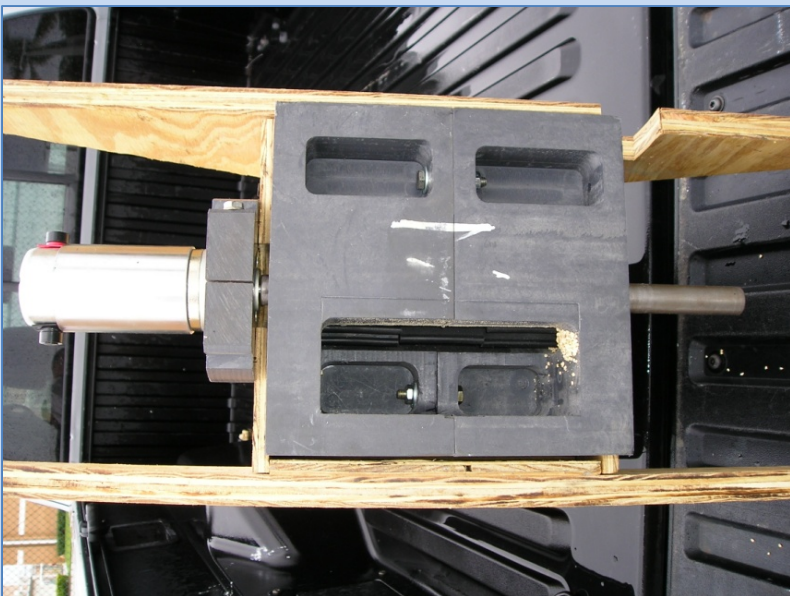
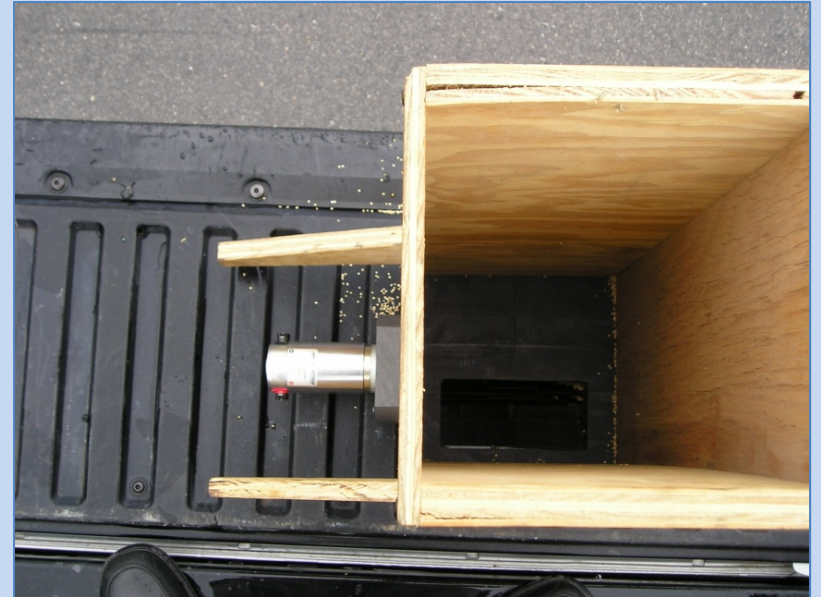
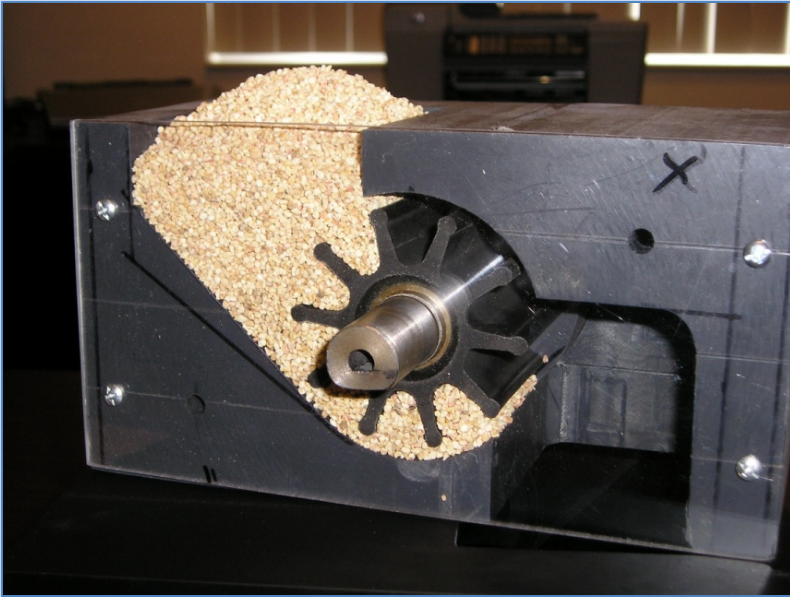
Crushes granules ???

Jams ???

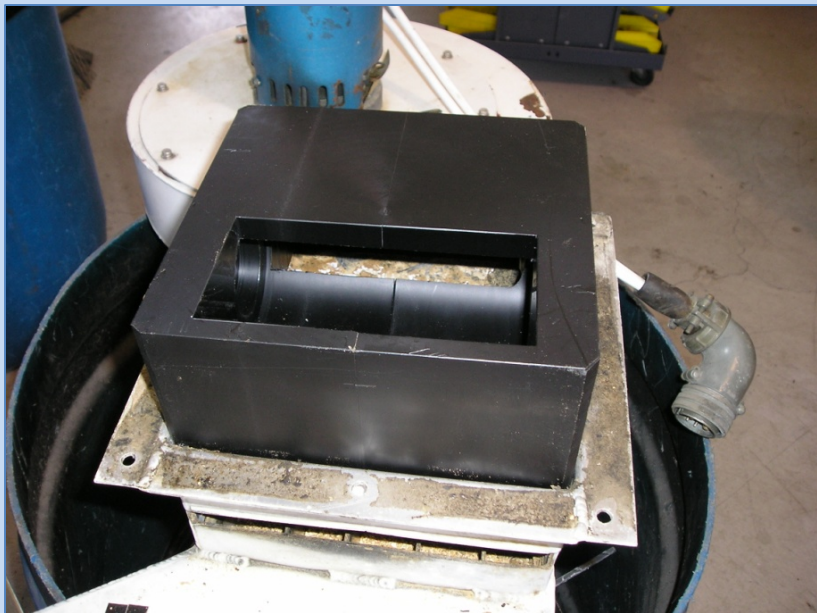
Prototype I



Prototype II



Prototype II

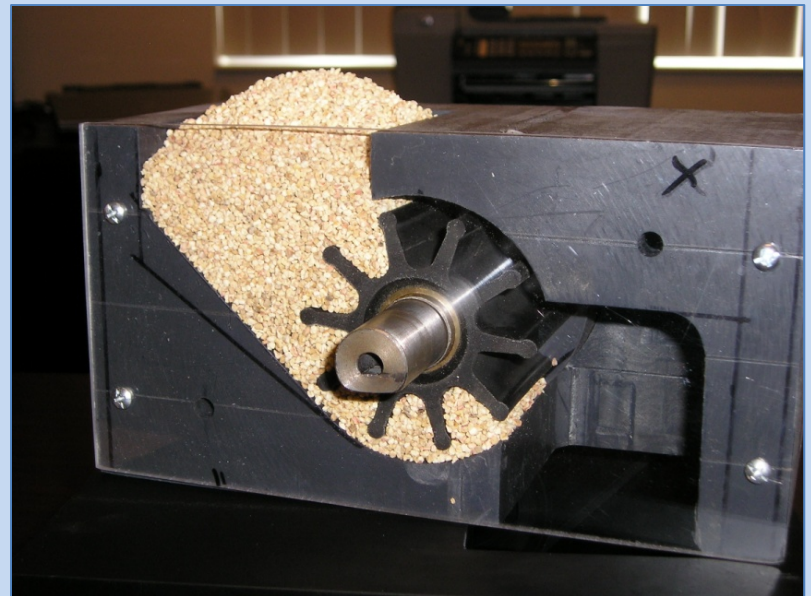


Delivery of Granules

Consistent

Repeatable

VariableIn-Flight (GPS Driven)



Software

Calibration with Correction Curve

Selectable List of Calibrated Products and Flows

Variable Flow = Constant Application Rate.....In-Flight (GPS Driven)

