

T & E First-Round Winner
Innovations Challenge

April 2016
Prepared by Transportation Planning
Missouri Department of Transportation

Hot Box with Adjustable Dampers



Description

Adjustable dampers were added to the flu pipes and hydraulic operated shovel box/chute of an asphalt hot box.

Benefit

The dampers save money and time by allowing the employees to heat the material quicker and more evenly resulting in less propane being used and better quality material. The hydraulic operated shovel box/chute saves time and simplifies work by being able to adjust the chute from dumping in the shovel box to spreading on the ground by simply working a hydraulic lever. This also improves safety because the employee does not have to physically handle the chute which can get hot from the material.

Materials and Labor

Materials List:

Flue Pipe Dampers:
5' – 4" Schedule 40 Steel Pipe
2' – 3/8" Cold Roll Steel
1'x1'x3/8" Flat Steel

Hydraulic Operated Shovel Box/Chute:
2 - 4'x8'x1/4" Flat Steel
Hydraulic Cylinder (used from old pull paver wing)
Hydraulic Lever Valve (used from old pull paver)
6' – 3/8" Cold Roll Steel (used to make swivel points)

Labor: 20 hours

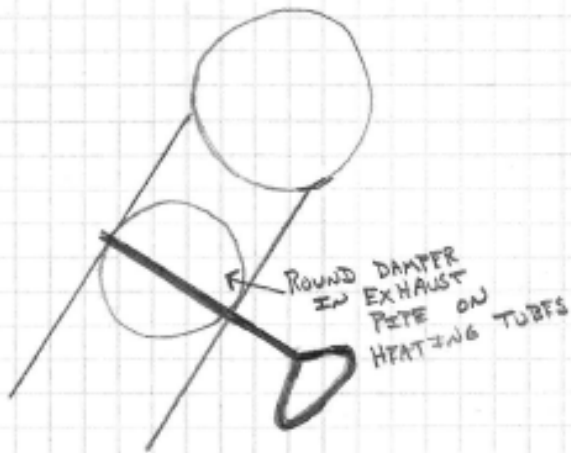
For More Information Contact:

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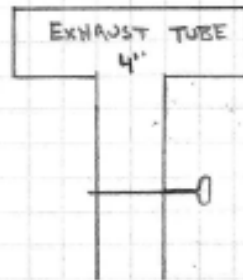
Additional photos can be seen by accessing the Innovations Challenge SharePoint page at:
<http://sharepoint/systemdelivery/TP/Documents/InnovationsChallenge.aspx>.

FLUE PIPE DAMPER

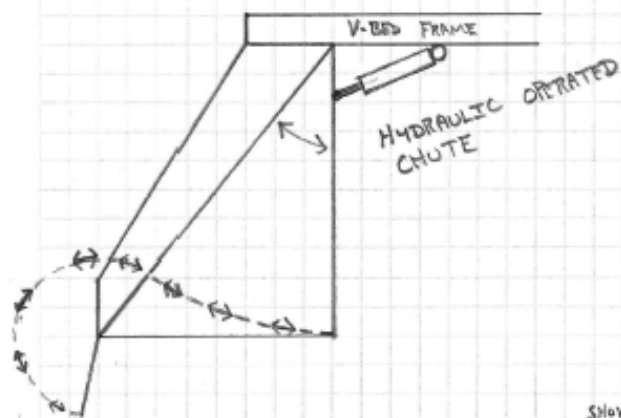
SIDE VIEW IN OPEN POSITION



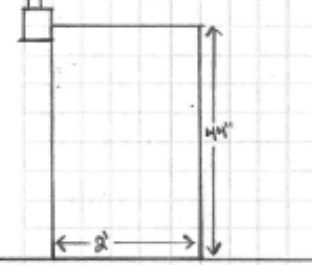
TOP VIEW OF DAMPER LOCATION



HYDRAULIC OPERATED SHOVEL BOX/CHUTE



SHOVEL BOX DIMENSIONS



SHOVEL BOX SIDE VIEW

