

Intersection & Bridge Deck Brine Sprayer

For more information:

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What was the challenge you set out to solve?

Plowing and brine treating at intersections with Interstate 218 in winter time snows. At intersections of county paved roads along Interstate 218, we clean the intersection with pick-up plow trucks instead of tandem trucks for safety of the plow driver and public traffic. Most of the time, interstate traffic will not move into the passing lane. Because of this and sight issues with tandem trucks, we added the brine system on pick-up trucks to treat the roadway so that the tandem plows can turn around and stay away from interstate traffic.

How did you develop and implement your solution?

Washington County built a brine spray unit, which goes on the back of our flat-bed pickup truck, for the treating of intersections and bridge decks. The unit was built to have a quick way to get around the county with one vehicle to treat slick spots on the paved roads, particularly at intersections, curves and bridge decks. It is quicker and cheaper for us to take a 1-ton pickup out to do this than to load up a tandem truck with salt and material. The system needed to be quick on and off, so the spray bar mounts to the 2" receiver hitch and the tank is strapped to the flat-bed of the pickup.

The spray bar is 78" long and made from 1" PVC pipe with 9-3/16" holes. The spray bar is attached to a 1" sq. tubing 76" long and welded to a 2"x 2 1/4" square tube that is bolted in the truck receiver with a 1/2" x 2 1/2" bolt. The tank is an old used 70-gallon tailgate calcium pre-wetting tank from one of our snow removal truck setups. The stainless-steel saddle the tank is mounted on is also from a snow removal truck. It was modified to fit in the stake pockets on the flatbed of the pickup truck. An electric pump is mounted on the tank, then wired to the cab for turning the system on & off as you get to the areas that needed treated.

All hoses have glad hands connections to hook up the tank to the spray bar, this allows everything to be unhooked and removed quickly when we want to use the truck for other purposes. It takes about 20 minutes to put the tank & spray bar on and to fill the tank. The tank was set off to one side for visibility out the back of the truck. It only takes about 1.5-2.5 gallons to spray each intersection.



What did it take to make this solution a reality?

The spray bar is 78" long and made from 1" PVC pipe with 9-3/16" holes. The spray bar is attached to a 1" sq. tubing 76" long and welded to a 2"x 2 1/4" square tube that is bolted in the truck receiver with a 1/2" x 2 1/2" bolt. The tank is an old used 70-gallon tailgate calcium pre-wetting tank from one of our snow removal truck setups. The stainless-steel saddle the tank is mounted on is also from a snow removal truck. It was modified to fit in the stake pockets on the flatbed of the pickup truck. An electric pump is mounted on the tank, then wired to the cab for turning the system on & off as you get to the areas that needed treated.

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What was the cost of implementation?

1 - Valve nor 3/4 FP	\$24.80
1 - Quick handle 3/4"	\$5.65
	\$15.10
2 - Valve Ball Union 1	each
	\$4.67
2 - Quick plug 1-1/4"	each
1 - Nipple 1	\$1.45
1 - Pipe Barb 1x1	\$1.25
1- Nipple 1x3/4	\$2.43
10 - Nipple 3/4x1/2	2.10 each
1 - Pipe Barb L 3/4x1	\$1.24
1 - Union 3/4	\$2.99
1 - Cap 3/4	\$3.99
1 - Electric Boom	
Shutoff	\$106.00
4' of 3/4" clear nylon hose	\$4.00
TOTAL	\$214.34

8 hours labor to build and test.

What was the impact and results of your efforts?

Plow trucks can stay on mainline of paved roads, not intersections. This makes it much safer at Interstate intersections.

