

Hawk Seale Tools Guide

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Hawk Seale can be used as a preservative sealer for existing pavement and /or as a rejuvenator for Asphalt Millings



Hawk Seale can be applied with any size equipment from sprinkle cans to commercial sprayers depending on the size of the project.

Expensive equipment is not required to apply Hawk Seale solution



Sealing and Preserving “Existing Asphalt”-

- * *The goal is to fill the cracks , voids and fissures in the asphalt from the bottom up to prevent air and moisture from entering the asphalt which are the two main causes of asphalt deterioration.*
- * *Hawk Seale is shipped as a concentrate to be mixed - 1 gallon of HS concentrate to 9 gallons of water.*
- * *Mix ratio can be adjusted 5% either thinner or thicker , **Do Not over dilute the concentrate***
- * *We recommend application split into 3 coats applying a total of .35 to .42 tenths of a gallon of HS solution per square yard . The 1st coat will typically absorb half the HS solution applied to the point of puddling or running off*
- * *Each application will take less solution to puddle as the voids and fissures fill .*
- * *Some more porous surfaces may take more applications to fill the fissures and voids.*
- * *The HS solution can be applied to existing pavement with a foam or heavy knap paint roller or by sprayer.*
- * *Small projects can be done with a 2- gallon sprinkle can be used, drill additional 3/16th inch holes vertically in the sprinkle can spout to increase flow.*
- * *Drilling the holes vertically will make it more comfortable applying the solution with a side to side motion.*



Re-Bonding Millings With Hawk Seale solution

Millings Application

- Millings will typically require 1-Gallon +/- per square yard to saturate the millings sufficiently to re-bond them whether they are compacted or uncompacted.
- * *We recommend application be applied in 3 coats- applying a total of approximately 1 gallon of HS solution per square yard .*
- * *The 1st coat will typically absorb a half-gallon of the HS solution applied to the point of puddling or running off.*
- * *Each application will take less solution to puddle as the millings become saturated.*
- *Poorer quality millings and depths over 3 to 4 inches may require more HS solution for adequate re-bonding.*
- *We recommend depths over 4 inches be done in separate lifts, which will require more HS solution..*
- Millings can then be compacted or recompact immediately or within 4 hours after application.
- Light straight traffic can begin immediately. Care should be used to ensure surface is dry to prevent tracking.
- Curing time is typically 2 to 7 days for heavy turning traffic. in high temperatures above 90 degrees and cooler temperatures in the 50 and 60 range can slow the curing process 10 to 14 days.

Re-Bonding Millings With Hawk Seale solution



Applying Hawk Seale to MILLINGS-

- **Millings will require a sprayer** to apply the HS solution. The goal is to saturate the millings to the point of puddling or running off to a depth of 2 to 3 inches.
 - * Heavy traffic such as garbage trucks and forklifts etc. will need 3 inches or more of saturation depth.
- * Millings will typically require 1-Gallon +/- per square yard to saturate the millings sufficiently to re-bond them.
 - * Some millings may require more solution depending on the quality of millings.
- * **5.5 GPM 12 Volt RV pumps**- typically only provide enough volume for one – “ 5 GPM fan jet nozzle” or an “off the shelf “ lever controlled wand with a garden hose.
- **The 12 Volt 7 GPM pump** will provide more volume to supply a small boom with 1 to 2 GPM nozzles attached. The larger 7 GPM can also be used to transfer the HS Concentrate for mixing in larger tanks.
- * **Lawn and Back Pack sprayers** are not recommended as they DO NOT provide sufficient volume fast enough for adequate penetration depth.
- * **Standard Lawn sprayers** typically have smaller 12 volt pumps and small nozzles and may not provide enough volume to soak and saturate the millings to a satisfactory depth of 2 to 3 inches .
- * **Rinse pumps and other equipment** with water as soon as possible after using.
- * **HS will leave a residue inside tanks and hoses etc.**



Re-Bonding Millings With Hawk Seale solution

RECOMMENDED Pumps

- * The simplest sprayer system is a 12-volt 5.5 GPM or 7 GPM RV pump with "Auto Pressure Shut Off" and a 25 to 50 foot non-kinking garden hose and an adjustable sprayer nozzle or wand which can be purchased between \$100.00 and \$150.00.
- * A 3.5 gallon 12 volt RV pumps with auto shut off would be minimum size for smaller projects.
- The 12 Volt 7 GPM pump with Auto Shutoff has the capacity to pump the heavier HS concentrate and also supply solution for a small boom set up. (See our Sprayer Boom Guide.)
- *Link to 5.5 GPM and 7 GPM RV Style Pumps--* [5.5 GPM 12-volt-RV-Pump](#)
- Link to online - [-Spray-Wand](#) Pumps and wands can be purchased locally or online.
- Trash pumps are available for under \$250.00, but will require a return line with a valve back to the tank
- Link to trash pumps - [Water-Trash-Pump](#)
- * See Our “Sprayer Boom Guide” for examples on how to construct a larger sprayer setup

Re-Bonding Millings With Hawk Seale solution



RE-BONDING MILLINGS continued

Larger booms will require larger pumps

- * **2 Inch Trash Pumps**-- should be run at the slowest idle and “will require” a return line back to the supply tank to prevent pushing out the seals of the pump head as well as to prevent churning or cavitating in the pump which can cause the copolymers to separate and gell. “Volume versus pressure is needed.”
- * (80-50 (80 degree fan and 5 GPM) or similar nozzles can be used with a boom or wand .
- * The goal is to saturate the millings to the point of puddling or run off to a depth of 2 to 3 inches.
- * Millings will typically require 1-Gallon +/- per square yard to saturate the millings sufficiently to re-bond them.
- * We recommend compacting “UN-COMPACTED” millings “immediately“ after application or soon after.
- * In cooler temperatures (60 to 65 degrees) it may take up to a week to fully cure .
- * Previously compacted millings can be re-compacted immediately after application of the HS solution.
- ** “DO NOT” use vibration after the first few initial passes with heavy compactors.
- * Treated millings may feel soft when you walk on them after compaction; they will cure to a hard surface similar to concrete curing.
- * **Do not use heavy vibratory rollers once millings have begun to cure as it can damage the bonding process.**

Re-Bonding Millings With Hawk Seale solution



Sprayers- Pumps- Boom setup

- * 2- inch Water Transfer pumps provide high volume with low pressure for applying the solution on larger projects. (Pump should be run at lower idle)
- * A return line is needed to relieve pressure when the wand or boom is shut off.
- * We recommend 5/8" or 3/4" size hose no longer than 50 foot long and a minimum size of 80-50 nozzles to reduce restriction of flow and to provide adequate volume at the sprayer tip. (Volume vs pressure when spraying)
- * Commercial style bellows pumps or seal coat sprayer systems can be used.
- * Sprinkle Cans for smaller projects can be used- Drill 3/16's holes vertically in the sprinkle head to create a fan jet spray.
- * Battery powered "Auto Pressure Shutoff" Lawn sprayer or RV pumps with 5.5 gallon or more per minute capacity have been used by some customers for small booms and single wands.
- * We recommend a filter in the incoming line to the pump (window screen size mesh).
- * Pumps and equipment should be flushed after applications are finished.
- * Pump-Up garden sprayers are not recommended as they do not deliver enough volume for sufficient saturation.
- * Long hoses over 50' can restrict flow and cause certain pumps to cavitate which can cause separation of the copolymers which can plug hoses and nozzles .
- * Run water trash pumps at the slowest speed possible and still deliver sufficient volume .

***** Rubber soled shoes or boots and gloves are recommended any time you use an electrical device around liquids.***



- Treated Millings will compact about 30% in depth, previously compacted millings typically compress another ¼ inch or so after treatment depending on weight of the compactor.
- HS- solution fills the voids and fissures in the asphalt millings preventing air and moisture from penetrating the surface, which are the two main causes of asphalt failure.



- There is a point after application where the HS Treated millings will get very tacky and stick to a steel drum roller.
- Using water with a steel drum roller will help keep tacky millings from sticking to the drums and aids in a smoother surface. Watering the treated millings can help as well.
- During this stage additional rolling or compacting can be delayed until the curing passes the tacky stage.
- Vibration should be limited to the first few passes immediately after application.
- Be aware that over compaction can lead to rippling and separation.
- ***“DO NOT VIBRATE” the millings after initial compaction -once they begin to set up and cure.***
- The surface may feel soft like walking on carpet, but will cure to a hard durable surface in hours or a couple days depending on temperature.
- Cooler temps will slow the curing time similar to curing time for concrete.



- **Prepping your existing pavement for sealing with Hawk Seale-**

Pavement it should be clean and free of dirt, sand, leaves, and other debris. A good broom or a leaf blower will remove debris quickly.

Hawk Seale does NOT require the pavement to be power-washed, however the same water trash pump and wand used to apply HSE can also be used to clean your pavement prior to applying HS- as a preservative.

Cracks larger than 3/16 should be filled with a good quality crack filler.

*Note- Dogs and cats can track HS- onto adjacent areas and should be restrained until HS solution dries.

**** Always wear heavy rubber soled shoes or boots if using electrical devices to clean your pavement, or apply HS Solution.***



- **1" or 2" Water Trash Pumps are recommended for larger projects-**

- * Trash Pumps provide high volume at low pressure for transferring, mixing and spraying HS Solution
- * They are low cost and easy to adapt into a sprayer setup .
- * Run pump at " slowest *idle*" to provide enough volume and pressure to apply the HS solution.
- * Always rinse your pumps and equipment water as soon as possible when finished using them.
- * Mixed solution can be kept in tanks for considerable time with minimal settling.
- * Solution can be stirred or recirculated every few days to prevent settling of copolymers.

- * *Do not run pumps at high idle as it can cause the pump to "dead head" and cause the copolymers to separate which will clog the system. Also avoid hoses longer than 50 feet in length.*
- * *A return line to the tank is necessary as well.*

- * *We no longer recommend sump pumps for applying the HS solution as the impeller will cause the Copolymers to separate from the restriction of flow with long hoses and diffusers.*



**** HS- is an adhesive product and creates a sticky film on equipment, tools, tanks etc.***

“Mixed solution” can be left in tanks or containers for several days for future application with minimal settling of copolymers with minimal stirring or re-circulation.

****A heavy knap roller can be used when sealing “existing asphalt pavement.”***



Application to millings will require a sprinkle can or sprayer.-

For larger projects a 1 or 2 inch Water trash or transfer pump is works very well with a wand or boom setup providing a high volume low pressure system.



****We do not recommend sump pumps, garden sprayers, roller pumps, or ag equipment as HS solution is an adhesive and can cause these pumps to fail.***

****Rinse out your equipment with water immediately when finished as HS- will collect in pumps and hoses and begin to set up .***

****HS will leave a film on equipment and tanks. Some tools will be a “one time” use.***

**** WD-40 or a similar product or diesel fuel to clean and prevent equipment from getting stuck. Paint stripper can remove dried on HS.***



****We no longer recommend sump pumps as the restriction of flow from adding hose and nozzles will cause the pump to “dead head” and cause the copolymers to separate and clog the system.***



Clean up-

- * -Hawk Seale will rinse off while brown in color, once it turns black WD-40, Oil Vanish, Diesel or similar products will be needed to remove it.**
- * -When finished applying HS- pumps and hoses should be rinsed out with water.**
- *-Equipment, tools and hands can be cleaned with WD-40, Oil Vanish, Diesel, or similar product.**
- *-Paint Stripper or Acetone will remove hardened HS from equipment and other hard surfaces.**
- *-Diesel fuel can be used for winterizing equipment and lubricating valves**
- * HS solution will leave a residue in tanks and on equipment.**



In Event of SPILLS-

- * HS- concentrate or solution can be diluted with water.**
- * Diluted solution can be flushed and broomed out onto pavements**
- * HS- will waterproof and seal asphalt and concrete pavements and protect them from deterioration from air and moisture entering the surface.**
- * Spills can be handled the same way as applying the solution to preserve and seal pavement.**
- * HS when diluted - typically dries in an hour.**
- * Traffic can continue, however solution will track until dried.**
- * Spills on Dirt, sand or lawns can be diluted with water and detergent.**
- * Dirt, millings, sand, lime, or gravel can be used to soak up spills as well.**

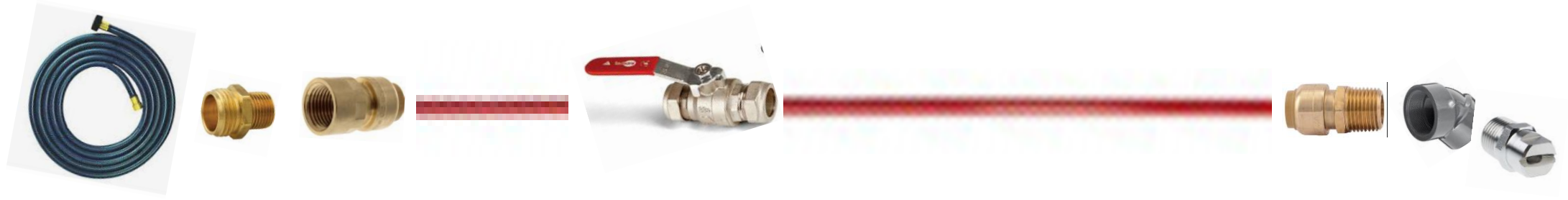


Sprayer setups can be modified to your individual needs.

- * Your sprayer setup can be as simple as you prefer for a one time application, or more elaborate for larger or custom application.***
- * The following slides are designed for larger and on going application of HS- solution.***
- * The design is for filling tanks with water from any source, then mix and recirculate the solution, as well as to feed a boom for large areas or a simple wand or both.***
- * You are welcome to modify or substitute any or all parts for your own application.***

This setup was constructed using a 12 Volt Pump for treating a Mobile Home Court Street in New York State





“Light weight” WAND CONSTRUCTION

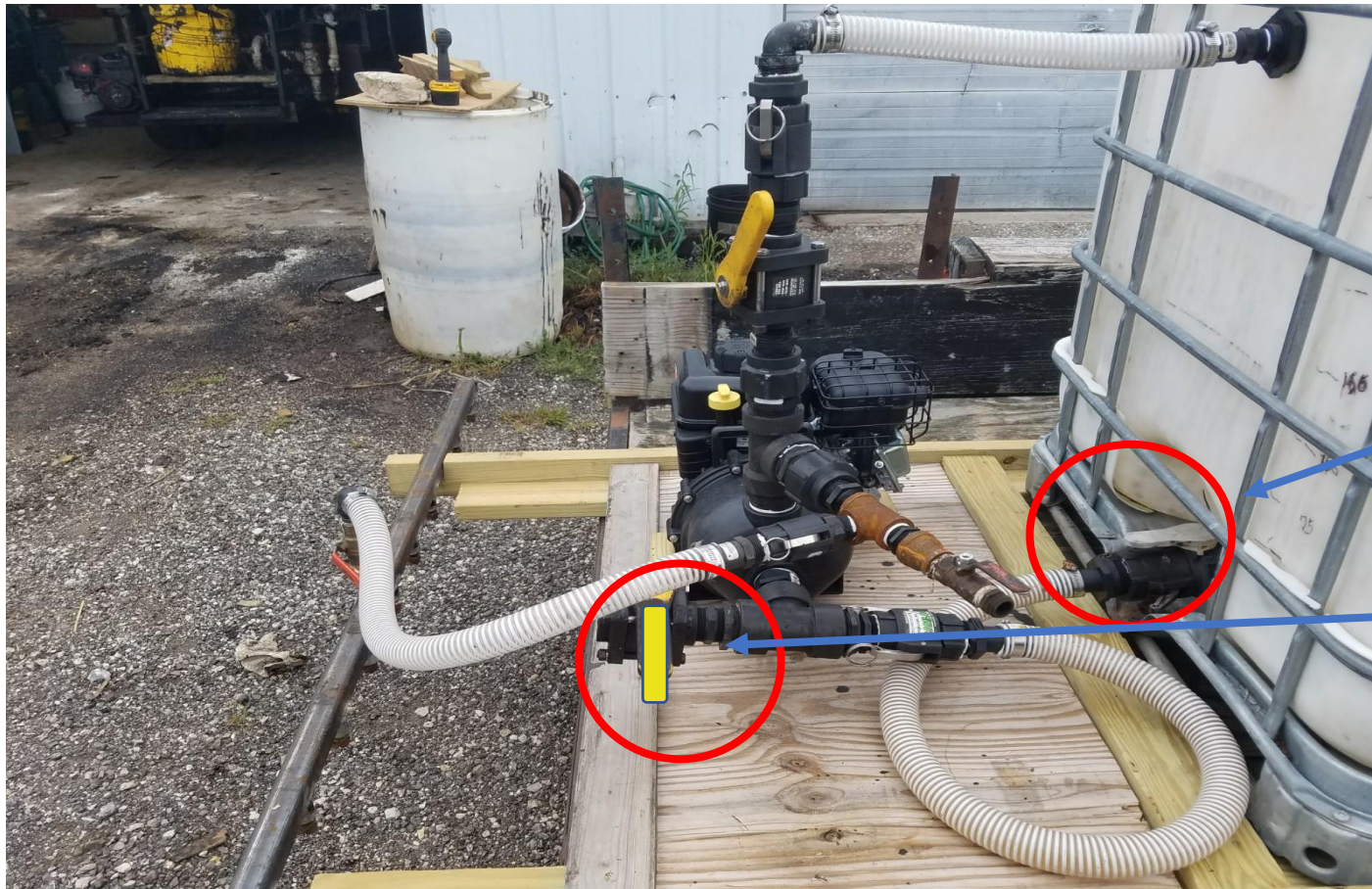
- 1. Using a ¾ inch Aluminum broom handle – Or ½ inch Tiki Torch pipe.*
- 2. Cut off ends of handle to use Shark Bite style connectors.*
- 3. Cut short 6 to 8 inch piece of handle off of the pipe to use as a handle for valve.*
- 4. Attach a Shark Style valve of your choice.*
- 5. Attach remainder of broom stick (3’ to 4’ is a comfortable length)*
- 6. Attach another Shark Bite connector to the stick to attach a 22 degree elbow.*
- 7. Attach the ½ “ threaded 80-50 fan jet nozzle.*

**Note -- (Galvanized pipe is too heavy and PVC and PEX pipe is to flimsy)*



Larger projects will require a tank and sprayer setup-

- Any large tank or drum can be used for mixing and applying HS-solution
- 1-1/2 hose was used with snap couplers to connect the tank to the pump and the boom for easy connecting.
- The pump can be plumbed to fill your tank from ponds and other tanks etc.
- Caged tanks can often be found at farm Co-ops or other farm fertilizer and chemical dealers.
- Most Farm and Home or hardware stores will have the pipe, valves and connectors needed.



Caged tanks have a 2 inch valve on them fitted for a snap coupler.

A Tee and a valve was installed to use the pump to fill the tank.

Note the use of snap couplers for ease of connecting tank and pumps

Tank and sprayer setup continued-

Snap couplers make it easier to connect and disconnect the tank from pumps, booms etc



A valve on the return line adjusts the flow to increase or decrease pressure to boom and hose wand and prevent “dead heading” of the pump.

A Tee and a valve was installed to use the pump to fill the tank.

Valves for wand and boom control



A $\frac{3}{4}$ inch valve was installed to control flow to a hose and wand.

A 1" valve controls flow to the boom.,

A "12 volt" ball valve can also be used to control solution to the boom remotely.



Booms and Nozzles

This boom was constructed from 1 inch square tubing with ½ inch couplings welded every 6 inches for ½ inch 80-50 fan jet nozzles.

PVC Pipe can also be used for a boom

Nozzles can be purchased online at <http://asphaltstore.com>
Or ordered from Hawk Seale

The boom is carried approximately 16“ off the ground



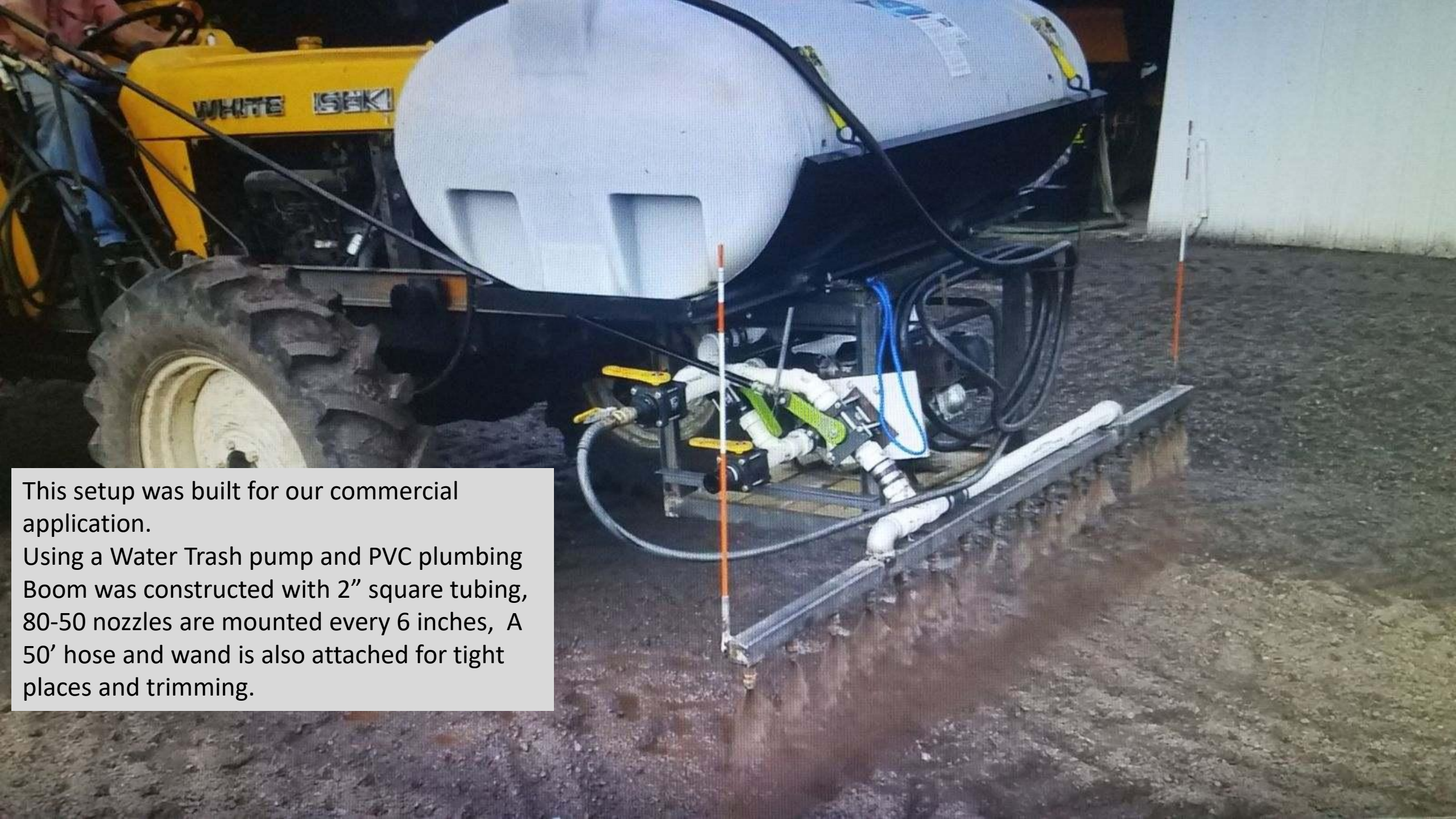
This sprayer bar was constructed with PVC Nozzles were mounted 12 inches apart, bar is carried approx. 18" off the ground.

Tank or drums may be mounted on trucks, trailers, or tractors

**** Do not run the pump at high idle as it can “dead head” and cause the copolymers to separate and clog the system.**

Nozzles are available on line at asphaltstore.com

<https://asphaltstore.com/shop/spray-tips-for-sealcoating/12-npt-steel-spray-tip/>



This setup was built for our commercial application. Using a Water Trash pump and PVC plumbing Boom was constructed with 2" square tubing, 80-50 nozzles are mounted every 6 inches, A 50' hose and wand is also attached for tight places and trimming.

One of the big advantages of Millings is that it does not require large heavy equipment.



This is a photo of our Toro Workman 3200 with a 200 gallon tank and Trash pump.

We mounted a foldable boom for 4, 6 and 8 foot widths.

The Toro is very easy to maneuver and a much smaller machine to transport to projects.

Any larger container from garbage cans to truck mounted tank can be used.

Tanks can be mounted on any truck, Trailer, or UTV.



We also use a smaller 24 HP Kubota tractor with loader and a 6-foot leveler with 2-1/2 in teeth to shape the millings and also to incorporate the HS Solution after the Solution is applied.



The 4 foot 5000# roller is the heaviest machine we transport.

After a couple years of commercial applying we made the move to smaller equipment for transporting.



This setup was our original sprayer set up built for our commercial application. It was a 60 HP Tractor with a 200 gallon tank and 8 foot boom. It worked great, but a big unit to transport for small projects. The tractor also had a land leveler on the back for shaping and incorporating the HS Solution prior to compacting.



This is a photo of our Toro Workman 3200 with a 200 gallon tank and Trash pump. We mounted a foldable boom for 4, 6 and 8 foot widths. The Toro is very easy to maneuver and a much smaller machine to transport to projects. For many small sealer projects for existing asphalt we don't even unload the TORO, we just move the trailer along and use the 50 foot hose and wand.



We now use a smaller 24 HP Kubota tractor with loader and a 6-foot leveler with 2-1/2 in teeth to shape the millings and also to incorporate the HS Solution prior to compacting the millings.



Commercial Booms are available as well

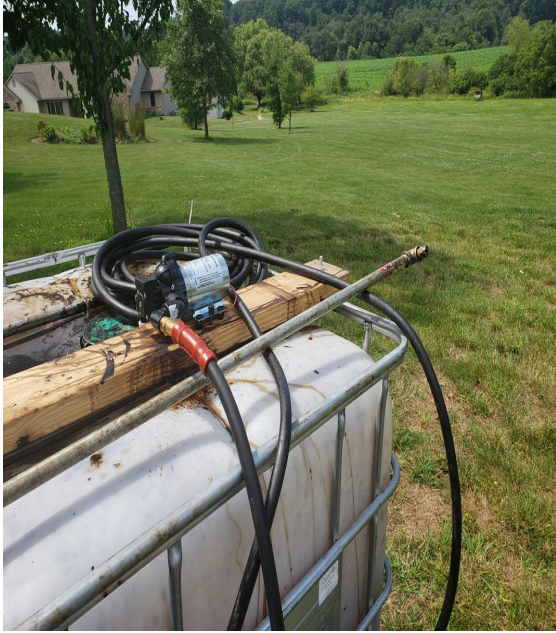
Booms should have a nozzle every 6 to 12 inches minimum and be carried approximately 16" to 18" off the ground. Nozzles will need to overlap spray for even application of solution.

Water trash pumps work well, they are inexpensive and easy to maintain,

The pump should be run at a low to medium idle, as running wide open can push the seals out of the pump.

We hope this PDF guide was of help to you in constructing your sprayer.

Using your imagination and available equipment and parts can lead to constructing a simple inexpensive sprayer setup.



We hope this guide provided the basics for constructing a simple sprayer setup

Some of our customers have built some awesome sprayers using their inventiveness.

Please see our “Simple Sprayer Construction Guide”
for more in-depth instructions for constructing a simple sprayer system.

See more information on our website at-
<http://hawkseale.com>