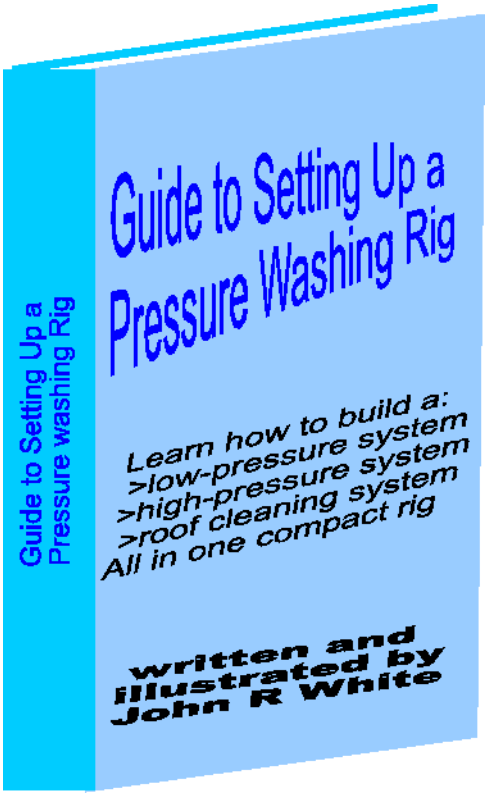

Allclean
Professional Exterior Cleaning Contractors
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This book is not about how to run a pressure washing business, how to advertise or how to keep books. Its simply about how to set up a pressure washing rig designed to make your job easier, faster and much more profitable. Fact is, you'll eliminate a lot of competition just because your rig will have far more capabilities. So lets get started.

The first thing you will need is about $7500. Right now your saying, "Where in Hell am I going to get $7500?" or "Man you're crazy. I can buy a pressure washer at Home Depot for $650 and I'm in business." The truth is many suppliers have finance plans and even if you have to go to a loan shark and pay 20% interest, your payment would be about $280 per month for three years. At least 6 months out of the year you should be making at least $280 per day. That $650 Home Depot special ain't gonna make you money like the set-up I'm getting ready to describe. Besides, $7500 is a pretty cheap investment to return over $50,000-$100,000 per year.

You will need a covered trailer, preferably 14 ft. long. Why? Because a covered trailer enables you to protect your equipment, keeps the nosy competition guessing what's inside, gives you a place to safely store your chemicals and provides a perfect billboard for advertising. You can use an open trailer but for the price of three or four jobs you'll have a professional looking rig that will pay for itself over and over again. Don't forget to put a ladder rack on it.

Next you'll need a pressure washer. If you're even halfway serious about this business then you'll need at least a 3 500-4000 PSI unit capable of producing 3.5 + Gallons per minute. In addition the pump must have a **pressure-adjusting** valve.

A pressure washer designed with the above specifications will be capable of operating a wide range of attachments and the pressure can be adjusted according to the requirements of each job. If you are not able to adjust the pressure then the only way to control pressure is by changing nozzles, which is time consuming and wastes water. If you intend to do much flatwork (concrete drives, walks etc.) a 3500PSI/3.5 GPM unit must be used to get the most efficiency out of a **flat surface cleaner**

Yes, you will need a flat surface cleaner. You can live without it, but once you use one and find out you can clean a driveway in 10 minutes verses wanding it for an hour, you'll change your attitude.

Pressure hose
You will need a minimum of 150 feet of 3/8" high-pressure hose (4000 PSI +). Make sure you check the pressure rating before purchasing.

Hose reel
A hose reel is a must. If you do not use one, you'll be look'n one before your next job.

Chemical tanks
The system we're about to put together requires chemical tanks; at least two and preferably three.

Ladders
One 8-10 ft. step ladder
One 24 ft. extension ladder with a **stabilizer**

"Roof Gitter"
Most areas in the country are plagued with an algae called gloeocapsa magma. It grows on shingle roofs, first causing black streaks and later turning the entire roof black. If you choose to have roof cleaning as one of your services then you will need a **"Roof Gitter".** We'll have more discussion on roof cleaning later in this book.

"Roof Gitter"

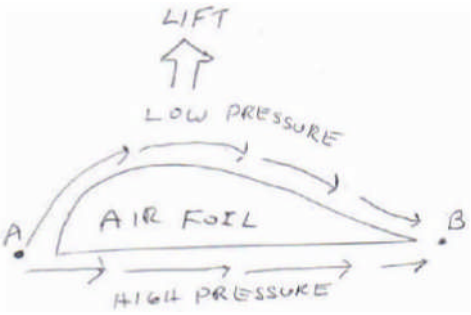
Before we start building your system. We need to discuss the rational for our design. In order to make money and be competitive in the exterior cleaning business you must control labor, material (chemicals) and overhead costs. The businessman with the lowest of these costs will make the most money assuming each is charging the same rates. Of these costs, labor and material are the most obvious. Clean a house in 1/2 the time with 1/2 the chemicals of your competitor then you'll make twice as much per hour and be able to do twice as much work per day.

At first glance, you may assume our system has a drawback, in that the chemical passes through he pump rather than being injected after the pump, which can contribute to premature pump failure, thus increasing overhead. However, if you do the math, replacing a $200 pump is a small price to pay when you save thousands on labor and

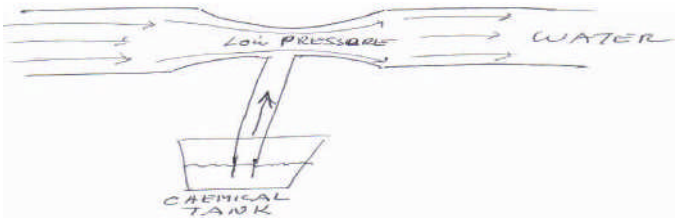
chemicals. Over a ten year period, we have observed the average pump will do about $50,000 worth of work before needing replacement. Therefore, we treat the cost of pumps as part of the cost of doing business.

How does our system save so much on labor and chemicals?

Manufactures do not want chemicals to run through their pumps because they can shorten the pumps life so they recommend and install chemical injectors. In the late 1600 a Swiss mathematician, Jacob Bernoulli discovered that **the faster a fluid passes across a surface the lower the pressure is on the surface.**



In the above illustration (forgive me for my artistic ability), imagine two molecules of air at point A being split when they hit the airfoil (wing). If the molecules reunite at point B at the same time then the one that traveled across the top of the wing has to go faster than the one going across the bottom. According to Bernoulli's Principle the airfoil will lift because the fluid (air) on top is moving faster across the surface than the air on the bottom. You've just learned how an airplane flies. What's this got to do with chemical injectors? Below is a drawing of a **venturi;** as water moves through its throat it has to speed up causing a low pressure or vacuum, that sucks chemical into the stream.



The amount of chemical being injected into the water stream is determined by (1) the velocity of the water through the venturi, (2) the size of the injector opening in the venturi throat, (3) the length and diameter the hose feeding from the chemical tank (4) the viscosity of the chemical solution, (5) the cleanliness of the injector openings and (6) even the temperature of the fluids. With all these variables it is just about impossible to achieve an accurate chemical mix using a typical chemical injector. You might set up for one job and not get enough chemical; increasing labor cost and on the next job, get too much increasing chemical cost. Another problem with chemical injectors is that *a chemical tip must be used.* Remember, in order for an injector to work it must have enough velocity going through the venturi in order to suck chemical into the stream. A

chemical tip allows the water flow (GPM) to increase. Which means you have to be fast on your feet or else waste a lot of chemical. If your machine has a pressure adjuster, it cannot be used, as it will slow the velocity of water causing the injector to not work.

In summary, chemical injectors are hardly ever accurate, causing increased labor or increased chemical cost and because they depend on a certain water volume through the venturi the application rate cannot be adjusted to suit the job, furthering the waste of chemical.

The solution

Premix the chemical in a tank and run them through the pump. You will experience an accurate and consistent chemical mix on every job. With a pressure adjusting valve you will never have to change nozzles and you will be able to apply chemical at your pace not the machine's pace. As an example lets go through the steps involved in cleaning a home's siding.

9:00 AM – **one man** arrives at 1800 square foot home.
9:10 AM - garden hose connected and 150 foot of high pressure unreeled
9:11 AM – flip on chemical tank valve and begin soaking front of home
9:18 AM – flip on rinse valve and begin rinsing front of house
9:30 AM – flip back to chemical tank and soak side of house
9:35 AM – flip back to rinse
9:41 AM – flip back to chemical tank and soak rear of house
9:49 AM – flip back to rinse
9:59 AM – flip back to soak other side of home
10:06 AM – flip back to rinse
10:14 AM – finished washing
10:22 AM - packed up with $139.00* and ready to go to next job

Total time on job -1:22
Cost of chemicals - $5.25 (1/4 gal. cleaning chemical, 1 gal. bleach)
Gas to operate PW - $3.00
Revenue - $139.00

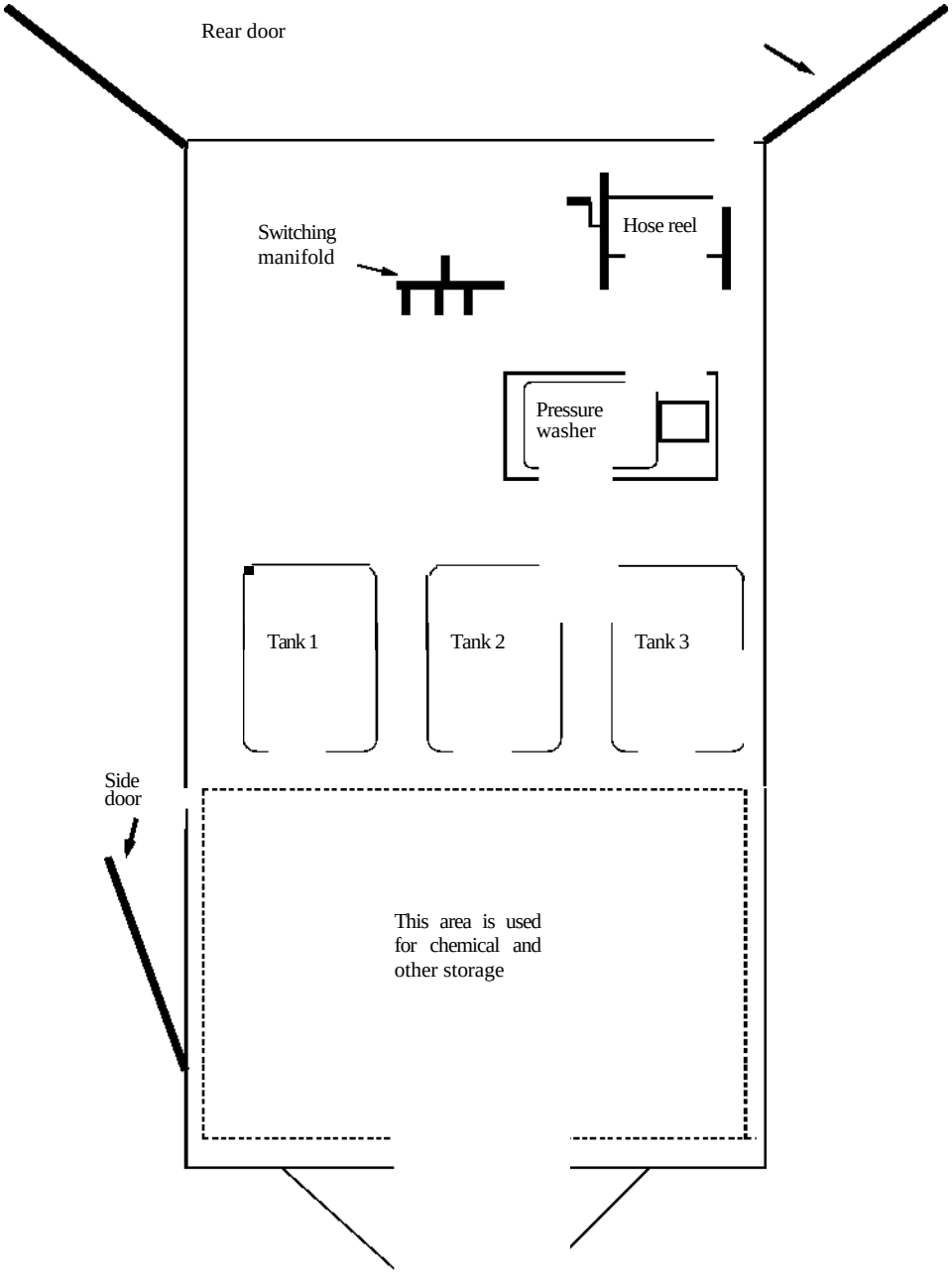
*$139.00 is a low end price. We used this figure to show that money can be made even in areas of stiff competition.

Lets begin setting up your rig.

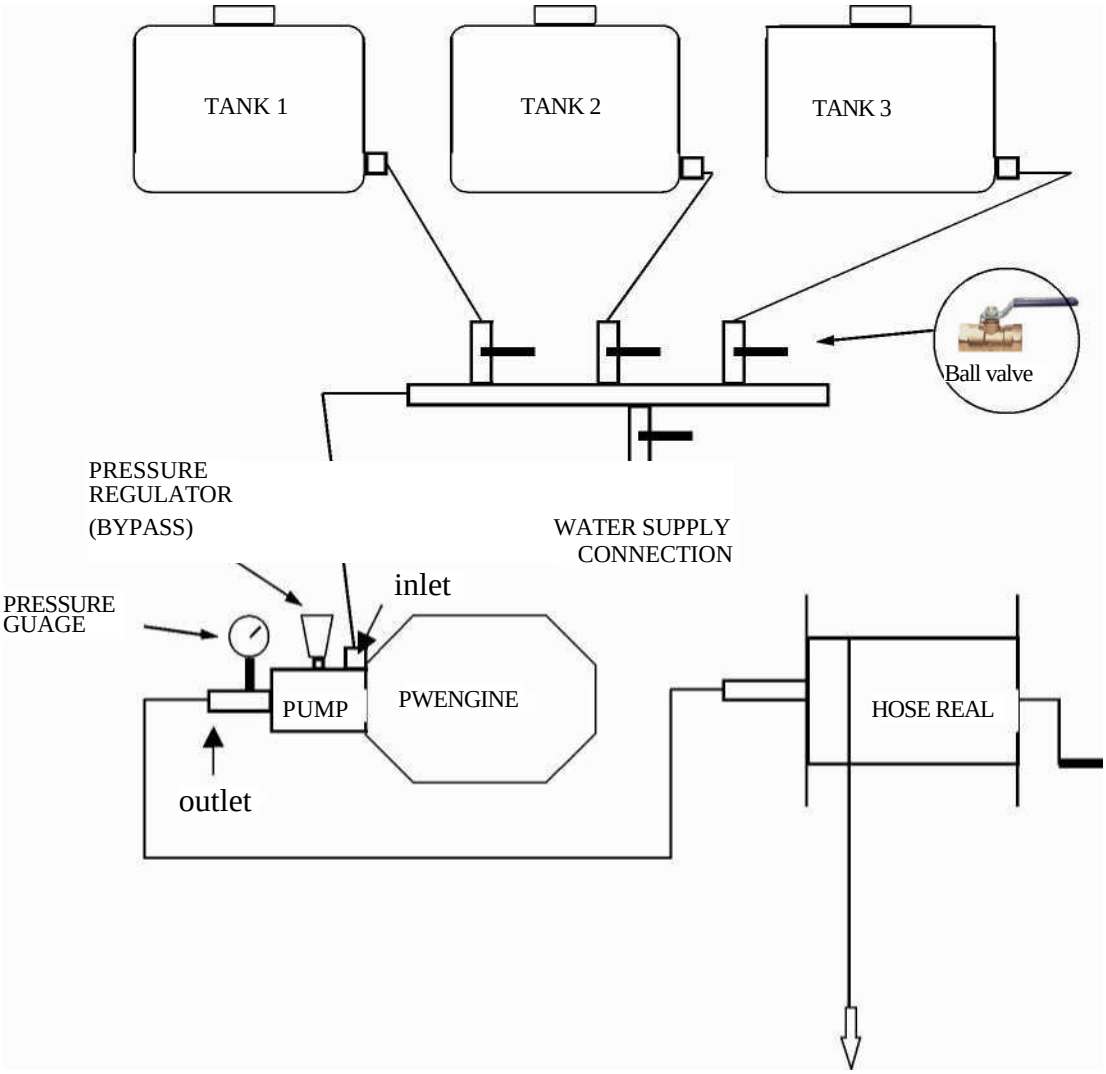
The first thing you'll need to decide is how many 35 – 65 gallon chemical tanks you'll need. For house washing (siding) we recommend a 65-gallon tank. For roof cleaning and other chemicals a 35-gallon tank will be fine. We Clean Inc. specializes in roof, deck, siding and concrete cleaning. For that reason WE Clean uses three tanks; one for house wash chemical, one for roof wash chemical and a third for an anti fugal chemical that is sprayed on the roof after cleaning. Allclean, on the other hand, does the same type of work but does not push the anti fungal coating; therefore Allclean uses only two tanks. If

you plan to take on jobs where you must supply the water then you'll need a third or forth tank (250 gals).

Below is a floor plan of your trailer showing where each component should be placed for a three-tank system. For a two-tank system simply eliminate one tank.

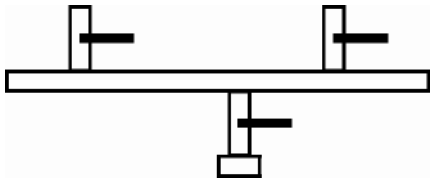


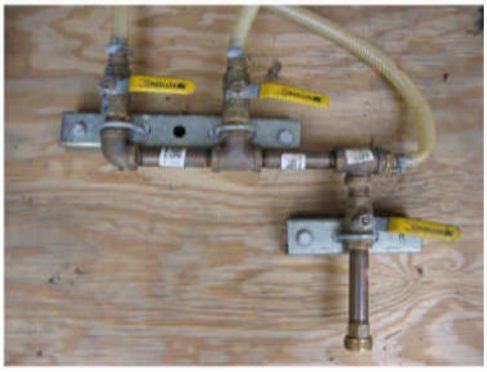
Below is a schematic of how your system should be piped up.



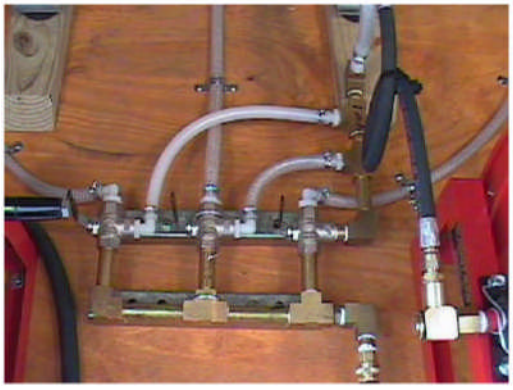
Basic piping diagram for a three tank system. For a two tank system, eliminate one of the valves on the manifold as shown below. Note: Tanks should be elevated so the outlet is above the pump inlet.

TWO TANK
MANIFOLD





A simple two-tank manifold system. Notice the manifold is made up of brass nipples, elbows and tees, 5/8” barbed hose fittings and one female garden hose connector. Each hose has a ball valve for a cut off. The manifold is mounted on 1-1/2” metal C channels using U-bolts and screwed to the floor. If you are not mechanically inclined, take this picture to you local hardware store and have them fix you up with the parts.



A three tank manifold system. This unit has two pressure washers. PW # 1 is piped as shown in the above diagram. It can be used to apply chemical or rinse. PW #2 is used for rinsing only. If you plan to use a 2-man crew then a second pressure washer will almost double efficiency, as the second man can be rinsing instead of standing around 90% of the time.

A hose connector similar to this can be used to operate two PWs.

The chemical tanks should be horizontal **leg tanks** (Saddle tanks). You will need at least one 35-gallon tank and one 65-gallon tank.

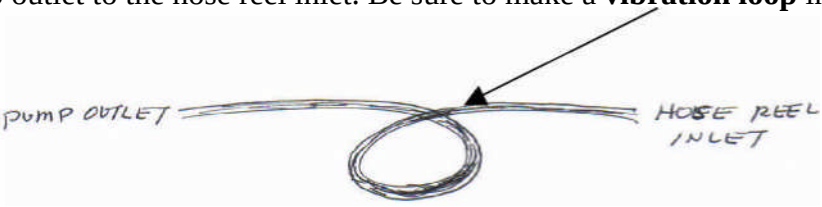
Be sure to elevate the tank so that the tank outlet is above the pump inlet. This can be accomplished by building a wooden platform. Fasten eyebolts to the floor and strap tanks down with bungee cords.

With the tanks and manifold in place, begin running good quality/chemical resistant 5/8" hose between the tanks and the manifold and securing with hose clamps. The hose should be rated at least 200 PSI.

Now, its time to mount the pressure washer. Notice the two-tank system is using a pressure washer mounted on a rolling cart. While the three-tank system uses skid mount pressure washers. The manufacturer mistakenly sent a rolling rig when, in fact, it should have been skid mount. We use a 13 HP Honda / 4000 PSI unit with a pressure regulating valve, purchased from Water Cannon, http://www.watercannon.com/. Again, we don't support any particular manufacture. We just liked the price and the fact that they offered a skid mount model. If you use a skid mount, bolt it to the floor. If you use a rolling unit install eyebolts strategically and strap the unit down with bungee cords

In addition you will need a high quality **pressure gauge,** especially if you plan to clean roofs or other items requiring controlled pressure. Now, connect a hose from the manifold to the PW inlet

All that's left is to install the hose reel. It is best to use a hose reel with a capacity of at least 200 feet of 5/8" hose. Once you have it bolted to the floor run a high-pressure line from the pump outlet to the hose reel inlet. Be sure to make a **vibration loop** in this hose

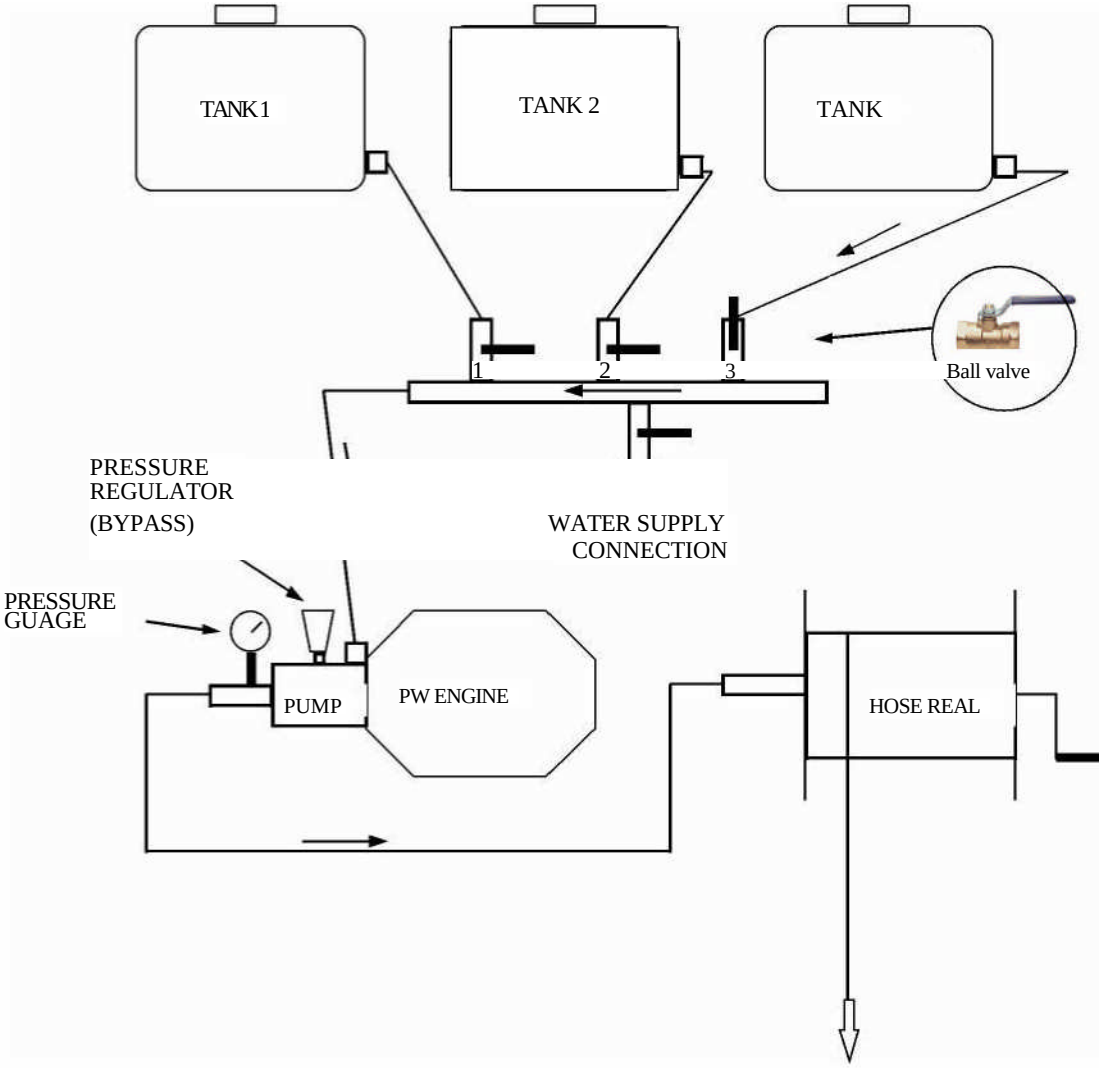


Connect you hose to the hose reel and you're good to go.

Once you have your rig put together you will need to practice switching from one tank to another or to rinse. It will only take a few times to learn, its mostly a coordination exercise as shown below. **NEVER START THE ENGINE BEFORE TURNING ON THE WATER OR A CHEMICAL TANK.**

Soaking mode

In the illustration below we wish to apply chemical from tank 3 on the surface to be cleaned. Simply open valve 3 and the chemical will be picked up by the pump and delivered to the object. Notice that a 40-degree high-pressure nozzle is used. To reduce the flow rate of the chemical to a manageable level turn the pressure-adjusting knob.



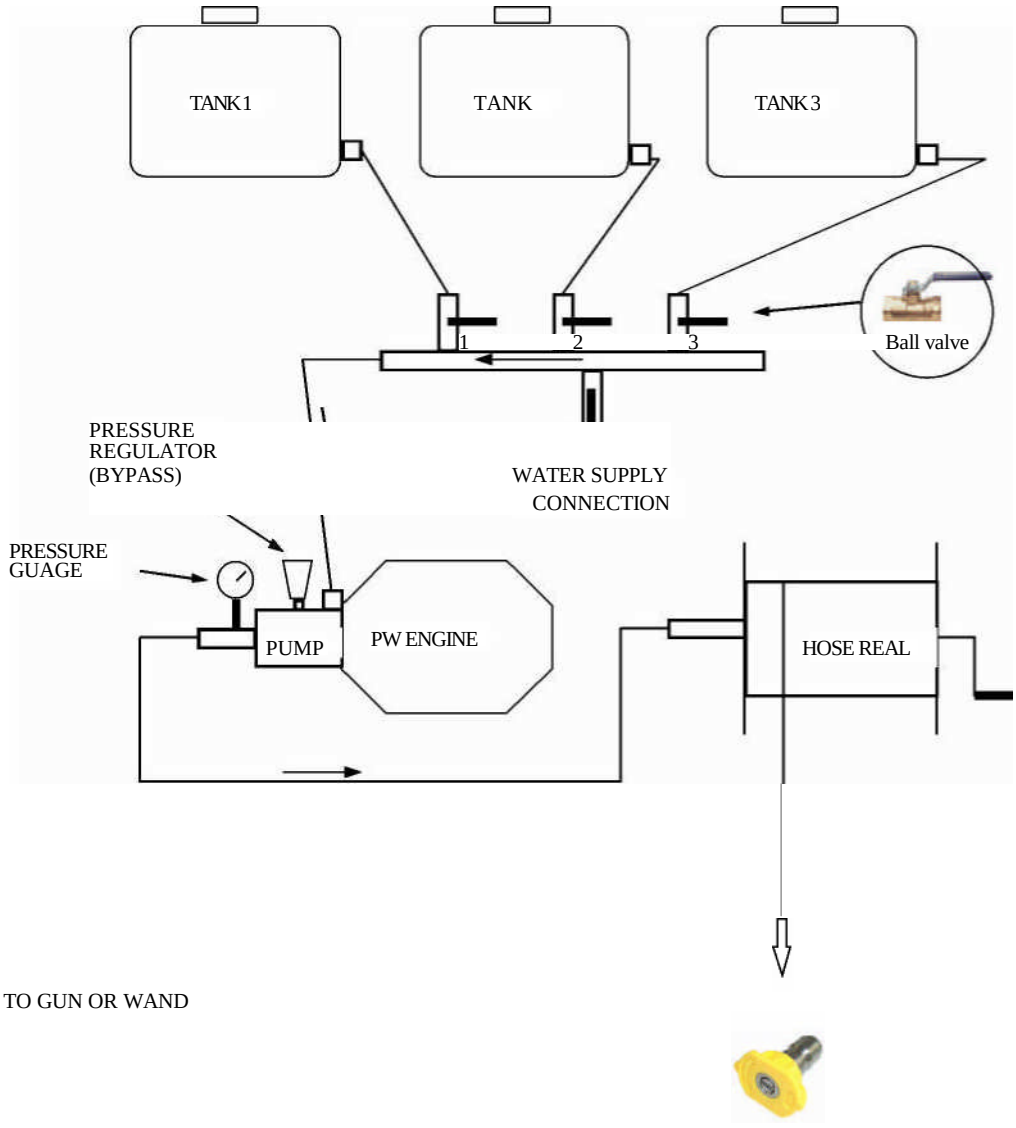
Generally, a 15 degree nozzle will work for most jobs. No need to use to a chemical nozzle.

To apply the chemical in tank 3, open valve 3 while the other three valves are closed. Use the pressure regulator to control the chemical flow.

Rinsing mode

When it is time to rinse, **simultaneously** close the valve to tank 3 while opening the valve to the water hose. Increase the pressure just enough to get the job done. Note: if

the water hose valve is open and valve 3 is not closed then tank three will begin filling with water, diluting your chemical mix, pay attention to what you're doing.



To switch from chemical to rinse, simultaneously turn valve 3 off while turning water supply valve on. Increase pressure by adjusting the pressure regulator.

A word about pressure

Just because you have a pressure washer doesn't mean everything you wash needs pressure washed. Many people have the misconception that detergents are not needed with a pressure washer; just blast the dirt away. 95% of the siding jobs you do can be cleaned with a $15 chemical sprayer and a home made wand made of PVC pipe and a chemical nozzle and street pressure. The chemicals do the work; they break down and

loosen the dirt. Only a minimum amount of pressure is needed to rinse the dirt away. I do not wish to bore you with before and after pictures. The reason I'm showing these to you is to give you an idea of how scuzzy the siding was on a 76 x 24 doublewide. The entire home was washed in two hours using only the two tools shown below. If all you plan to wash is siding, you do not need a pressure washer; you can work out of the trunk of you car with only a garden hose, sprayer and wand.

BEFORE

AFTER

HOMEMADE WAND

CHEMICAL SPRAYER

A detergent or cleaning agent should be used on everything you wash. Chemicals make your work go faster and easier. Most historical architects specify less than 500 PSI must be used when cleaning historical structures. If 200-year-old buildings can be cleaned using low pressure than certainly a 15-year-old building can be cleaned the same way. Our company uses low pressure as a marketing tool. "**NO DAMAGING HIGH PRESSURE ON YOUR ROOF OR SIDING".**

Obviously, you will need a pressure washer for many jobs; flatwork, equipment cleaning and removing stubborn stains are a few instances. Many times street pressure simply is not enough pressure. For your information, a column of water exerts a pressure of .433 PSI per foot of elevation. Therefore, if a water tower is 100 feet tall, the water pressure at ground level is 43.3 PSI (100 ft. x .43 3). If you are standing 20 feet above the ground washing a two-story home then you will lose 8.66 PSI (20 ft. x .433) due to your elevation, leaving only 34.6 PSI to work with. You will most likely need a pressure booster (pressure washer).

A word about chemicals

As mentioned above, the chemicals do the work. However, before applying any chemical to any surface it is imperative you read the directions and cautions. If you cannot read get someone to read to you, but **read the label.** If you are not sure a certain chemical will work try an inconspicuous test area. To give you an idea of the trouble you can get into, suppose you get a job cleaning a cedar shake roof. Since you may have been using sodium hydroxide based cleaners to clean fiberglass shingles, you use the same to clean cedar. Result: the shingles turn black. Chlorine bleach can turn some vinyl products yellow. Many cleaners will eat aluminum, take off paint or severely spot glass. When getting started in the business it is best to use chemicals specifically made for the job.

It is important that you read everything you can about the exterior cleaning business. Order "Cleaner Times Magazine" (free) at www.cleanertimes.com. Check out their links page for Forums and Chat. You will find a number of forums (bulletin boards) offering all the help and information you need to operate a successful exterior cleaning business. One word of caution; the forums can deal out a lot of BS, so it's best to listen in for a few days to figure out who's got the right answers before biting hook, line and sinker. Also, many forums are sponsored by suppliers of chemicals and equipment and are biased toward their products; just keep that in mind.

> **MSDS - Manufacture Safety Data Sheets are required by law to be kept with all chemicals on the job.** In the event of an accident the MSDS contains info on handling, first aid, precautions and chemical composition. MSDS may be obtained from your supplier, in some cases they may be downloaded from the manufacturers web site

One program that is a must is Wolman's Certified Contractor program. It is free of charge and you can enroll at http://www.wolman.com/BecomeCertified.asp. Even if you never use their products or marketing strategy, you will gain a priceless amount of wood cleaning and wood preservation and restoration knowledge.

To get you started in the right direction I'm going to introduce you to two cleaning chemicals offer by the same company that can be used on 95% of your jobs. Remember, I get nothing from them. We have used these two products for the past 10 years and have had astonishing results. Other claim to have used them and had not so good results. Perhaps they're skimping on chemical or expecting the impossible. Anyway, I highly recommend you try them, if you have not already found your favorite cleaners. The products name is M- 1 House Wash and M- 1 Roof Cleaner. A third product, M- 1 Deck and Fence cleaner is the same as their roof cleaner; just in a different package, therefore, you can use the roof cleaner to also clean decks (do not use this product on cedar). Many home improvement and hardware stores sell these products. If you cannot find them locally, you can order directly from Jomaps, LLC, phone 770-442-8808. Jomaps (not Jomax), offers quantity discounts that that amount to close to 1/2 retail price. In addition **you can have your own label** placed on the product. That's what we do; to this day, our competition does not know what we're using.

Roof Cleaning

80% of the United States is plagued by an algae, ***gloeocapsa magma,*** which grows on shingle roofs, first making ugly black streaks, then, eventually covering the entire roof. It first appeared in Florida about 15 years ago but has now made its way up to the Canadian border. One characteristic is, once the algae finds a house in a neighborhood it seems to take over that neighborhood, which is very good for the roof cleaning business. Take a look around your area and see if the problem has affected your part of the country. Roof cleaning is a very lucrative business because the very thought of getting on a roof drives away most of your competitors, plus they are not equipped with the tools, chemicals or knowledge to take advantage of this market.

There are two chemicals predominately used to clean roofs sodium hypochlorite (bleach) and sodium hydroxide (lye). The bleach people live by their chemical and the lye people live by theirs. The argument over which is best may never be settled. Our company uses sodium hydroxide (M-1 Roof Cleaner). It has been our observation that bleach cleans faster but sodium hydroxide seams to clean better (brings the colors back) and the algae stay off longer. You may wish to do your own investigation and experimentation before deciding what to use. Nevertheless, the roof stains have to be rinsed away once a chemical is applied.

ABCs of roof cleaning

The first step to cleaning a roof is to cover the roof with a cleaning agent. With our machine we simply turn the valve to the roof cleaning tank and start spraying the roof. Some contractors use agriculture sprayers with gas or electric pumps or even garden sprayers. When the pitch of the roof is 8/12 or less one can usually walk on it to both apply the chemical and rinse with a wand. When the pitch becomes greater than 8/12, the men become separated from the boys. The chemical can usually be sprayed standing on a ladder along the roof's edge or by straddling the roof ridge but rinsing ain't that easy.

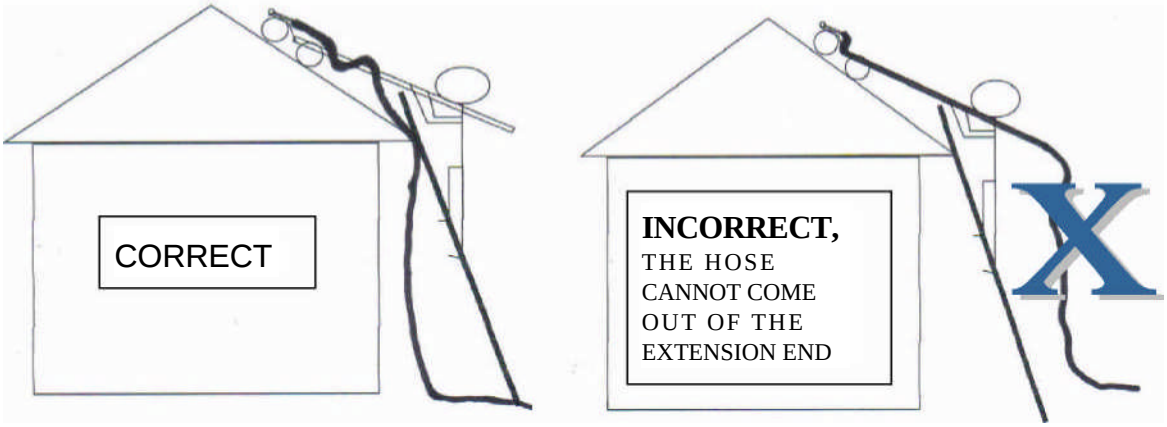
The answer is the ***Roof Gitter*** a little over 10 years ago we developed this contraption and we still use the original one to this day. It has proved so effective we've never had to make an improvement. At first we sold a few to far away competitors but became so busy with roof cleaning we didn't have time to mess with. One of our local competitors, ACE Cleaning, tried to copy it and came up with the Pitch Witch, which according to contractors who've used it just does not work very well. Now I'm semi-retired and have nothing to do but write books and build Roof Gitters. Below is a picture of our Roof Gitter. You are free to build one if you wish. You will need some 1/4" x 1" extruded aluminum, 5" wheels 1/2" pipe nipples and fittings and 4-8002 flat agricultural spray nozzles with holders and filters. It measures 18" wide, 20" long and 8" high, weighs about 8 1/2 lbs. You will have a little over $150 invested in it plus, and believe me, about a weeks worth of labor finding parts and putting it together.

On the other hand you can break down and go to my web site at
Learn about EMS Roof Gitter
To learn more or order a ready made unit.

ROOF GITTER INSTRUCTIONS

You will need a telescoping extension pole. One can be purchased at paint or window cleaning supply stores. Minimum 18’ is recommended for cleaning most roofs. Drill a 3/16” hole at the end of the extension to accommodate the pin on the Roof Gitter.

Sample 24’ 4-part extension



It is preferable to use 1/4” pressure hose for about the last 25-50 feet. This is to reduce weight and have better control. Connect the hose to the fitting provided on the Roof Gitter. DO NOT RUN THE HOSE TROUGH THE EXTENTION. A pressure washer extension with an internal hose cannot be used.

If you wish to clean standing on the roofs’ ridge, remove the extension pole. Let the Roof Gitter roll down the roof, then pull it back up using the hose. Move the Roof Gitter over about 18” and repeat.

Your pressure washer should have a pressure meter and adjustable pressure regulator. Adjust the pressure to 700-900 PSI (less than 50 PSI will be applied to the shingles). A cut off valve is not particularly needed as it only adds weight.

Allclean
252-943-1028

Well, it looks like I’ve come to the end of this little e-book. Hope you’ve enjoyed reading it as much as I’ve enjoyed writing it. Send me an email once you get you rig up and running and let me know how you’re doing. Meanwhile feel free to offer any comments, good or bad.

John White
jrwmtw@gotricounty.com