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Rid-O-Rust - Instruction to Figure Dosage

Rid O' Rust - Specifying and Installation

A Rid O' Rust Device is basically a small injection pump that injects a phosphate type concentrate, coating the iron oxide particles, thus preventing them from oxidizing or turning brown. However, there is a need to determine exactly how much of the phosphate based concentrate needs to be injected in order to prevent staining. **Warning - This Is Absolutely NOT A System To Use If You Are Drinking Or Showering With The Water.** It is also not a system that will work to prevent staining if the staining is caused by a chemicals such as Tannin, rather than actual iron oxide (rust) particles.

Test your water and make sure that iron is the problem. This injection system basically works by using a small injection pump to flow a pre-mixed solution from a 15 or 30 gallon holding tank through an injection fitting located on the pump pressure line to your solenoid valves and out through your sprinkler heads. When your sprinkler pump starts, your Rid-O-Rust injection pump should also start, creating a flow from your storage tank through the injection fitting and beginning the injection process. The Rid-O-Rust concentrate is sold in liquid concentrated form and is easily and quickly mixed with water when filling the storage tank.

In order to determine the dosage rate, you need to know the actual iron content of the water (in terms of iron parts per million) and the maximum flow rate of your sprinkler system. The iron content can be determined by purchasing the iron test kit we have available in the water treatment section of our webstore. On residential sprinkler systems, an approximate maximum flow rate can be determined by running through the zones and counting the total heads running on each zone. Count each small spray head as 1.5 gallons per minute and each rotating head as 3 gallons per minute. Work out a total gallons per minute figure for each zone, select the highest total gallons per minute figure you come up with and add 10%-20% for error. This is the Gallons Per Minute or GPM figure you will want to use in the following table to determine your dosage amount. Example; if your water test 4 parts per million of iron and your sprinkler system pump is pumping 20 gallons per minute of water, your dosage would be 1.3 units of chemical per 30 gallon Rid O' Rust tank, but we aren't done yet.

ppm	10gpm	15gpm	20gpm	25gpm	30gpm	35gpm	40gpm	45gpm	50gpm	55gpm	60gpm	80gpm
7	1.4	1.6	2.3	2.7	3.2	3.9	4.3	4.6	5.4	0	0	0
6	1.2	1.4	1.8	2.3	2.7	3.3	3.6	3.9	4.5	5.0	0	0
5	1.0	1.2	1.5	1.8	2.3	2.8	3.0	3.3	3.8	4.2	4.7	0
4	.5	1.0	1.3	1.5	1.8	2.3	2.4	2.6	3.0	3.3	3.7	4.8
3	.5	.8	.9	1.2	1.3	1.7	1.8	2.0	2.3	2.5	2.8	3.5
2	0	.5	.6	.8	.8	1.2	1.3	1.4	1.5	1.7	1.8	2.4
1	0	0	0	0	.4	.5	.6	.7	.8	.9	1.0	1.3

Okay, so now we know the basic units figure, taken from the above Table. Now we need to take that figure and using the Table below, we select the Gallons Per Day setting for the Injection Pump we are using and we multiply the basic units figure, from the above table, by the multiplier figure provided in the table below. Remember, the lower the GPD Injection Pump setting, the more concentrated the solution will need to be, but the longer the period of time will be between tank refillings. Example; if we have a basic units figure of 1.3 units from the above table and our injection pump is set on a feed rate of 10 gallons per day, our multiplier would be 2.4 and we would multiply the basic units figure of 1.3 units times the 10 gallons per day multiplier figure of 2.4 from the table below. The answer would be 3.12 units of concentrate in the thirty gallon tank. On the other hand, if we had our injection pump set on 5 GPD, our multiplier would be 4.75 and our answer would be 6.18 units of concentrate. This would result in a longer time between tank fillings, because the solution would be stronger, but would be injected more slowly into the pressure line. Concentrate cost would remain the same, either way.

Injection Pump Feed Rate Rated in Gallons Per Day - GPD	3 GPD	5 GPD	8 GPD	10 GPD	12 GPD	17 GPD	24 GPD
Multiplier is:	8	4.75	4	2.4	2	1.4	1

So now we know exactly how many units of concentrate to put in our 30 gallon tank, before filling it to the top with water, but we still need to know exactly what a "unit" is. This information is provided in the table below. If you are using a smaller 15 gallon holding tank, you will need to adjust your concentrate amounts (50% reduction) accordingly.

Chemical Concentrate	Formula 200	Formula 500	Formula 1000	Formula 2000
One Unit Equals	One Gallon	One Quart	One Gallon	One Gallon

So, now we see that our 3.12 units of chemical translates into 3.12 GALLONS of Formula 200 concentrate or 3.12 QUARTS of the more highly concentrated formula 500 concentrate. Because of shipping expense considerations, we stock the Formula 500 in quarts, gallons and 5 gallon containers. Because the Formula 200 is less concentrated and heavier to ship, it is not a stock item. We also stock the Formula 2000 in gallons (only) and this is a special mix for areas that have water that exceeds 15 Grains Per Gallon.

So, to summarize:

1. Find out the rust content of your water in Parts Per Million.
2. Determine the water production of your irrigation system pump in Gallons Per Minute on largest zone.
3. Use these two figures and the first table to determine your basic units of chemical figure.
4. Multiply the Basic Units Figure by the Multiplier found in the second table, finding the Total Chemical Units required.
5. Use the Table below to forecast your concentrate usage.
6. Order your concentrate from our store website www.lubees.com in appropriate quantities.

The Table below provides the total amount of irrigation hours you should be able to expect from your filled tank.

Output in Gallons Per Day	15 Gallon Tank	30 Gallon Tank (recommended)
5 GPD	71.5 Total Hours	143 Total Hours
6 GPD	60 Total Hours	120 Total Hours
10GPD	35.7 Total Hours	71.5 Total Hours
12 GPD	30 Total Hours	60 Total Hours
24 GPD*	15 Total Hours	30 Total Hours

* Includes siphoning system

As you can see from the above tables and information, it is better to set your GPD setting on the pump as low as possible. This requires you to use a more concentrated solution mixture, which increases the time between tank fillings. A 5 gallon per day setting on a 30 gallon tank will mean refilling every 143 hours (of watering run time), but a 10 GPD setting would require filling every 71.5 hours (of watering run time). Since most systems go through all watering zones within a 6 hour or less time frame, you would get approximately 23 waterings from a 30 gallon tank with a 5 GPD setting or approximately 12 waterings with a 10GPD setting.

Once your unit is set-up and operating, you will want to purchase some Rust Remover from

our website and use it on your rust-stained surfaces. As you use your Rid O' Rust equipment, you may see that it is doing an excellent job at the original settings. You can leave these settings in place, or you may want to experiment by using a slightly weaker concentrate amount. If stains begin to reappear, you can always increase the strength of the solution by adding some concentrate.

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