Instructions

WAGNER Tank Sealing Kit with Single-Component Tank Sealing Resin

Processing

Please remember that the success of any tank sealing project depends on the time and care spent on the preparation of the tank. Please read these instructions on tank sealing carefully before you start any tank sealing project. Have all of your materials and equipment ready before you start working, and never work without safety goggles and gloves! Galvanic treatments (chrome plating), coatings and other necessary tasks should be carried out prior to sealing, as the finished coating could be damaged at temperatures above 130°C (266°F).

We recommend tank sealing in a warm environment as low temperatures prolong the application time and drying phase. The times stated in these instructions refer to a continuous ambient temperature of at least 15°C (60°F). At temperatures lower than this you should expect to double the application and drying times, to be on the safe side. You should not attempt to seal a tank at, around, or below the freezing point. However, preliminary work such as cleaning and derusting can be carried out at low temperatures without negative effects.

Preparation

To properly prepare a tank for sealing all filters, fuel valves, tank level sensors, fuel caps, etc. must be removed as they could be damaged by the sealing process. They should be set aside and reinstalled after the final layer of tank sealer has hardened.

All openings in the tank must opened and closed several times during the cleaning and sealing processes, therefore suitable screws/plugs should be manufactured/prepared in advance. Ideally, an old fuel cap should be used, which can be discarded afterwards. If not, a sturdy foil should be placed over the tank opening and then the fuel cap tightened over the foil. This foil will protect the fuel cap seals, tank locks, and ventilation holes from being damaged by the cleaning chemicals or tank sealing resin.

If the outside of the tank needs to be protected it should be wrapped tightly in a plastic foil. We recommend a durable trash bag secured/fastened with a durable tape.

Water test

Every tank is different and each tank design presents a different set of challenges when it comes to sealing. Therefore it is a good idea to first “test seal” your tank using water to determine how you will later remove excess tank sealing resin. Usually all excess resin will be removed through the filling or drainage openings (on motorcycles the hole for the fuel valve). However, some tanks cannot be completely emptied using these holes. In these cases the excess resin must be removed using a suction tool. We recommend attaching a silicon hose to a large syringe.
During the water test it is best to observe how the liquid is distributed on the bottom of the tank, and see if there are any areas where large puddles form. It is important to note the areas where such puddles form as during the actual sealing process these areas will collect too much resin, drying too thickly. During the water test/test seal it is also important to observe the inside construction of the tank. Notice the position of the splash plates, openings in the splash plates, recessed tank lids, raised tank drains, brazed pipes and any other constructions that may cause challenges when sealing. By performing this test seal you will gain knowledge that will greatly aid you when you use the tank sealing resin, when it is necessary to distribute the sealing resin evenly, without being able to look directly into the tank.

If the tank has any leaks, they should be sealed temporarily to allow for preliminary cleaning, degreasing, derusting, and phosphating. These leaks can later be sealed permanently using WAGNER Single-Component Tank Sealing Resin. PLEASE NOTE: Leaks can be exposed during the preliminary cleaning and derusting, be aware of this and watch for it especially during derusting!

**Preliminary cleaning (if necessary)**

Badly rusted or dirty tanks must be cleaned by mechanical means before the rust converting process. In addition to flaking and scaling rust, old tanks often contain a rubber like or gummy deposit from old oils, greases, or fuels. These deposits must be removed during the preliminary cleaning. When sealing a new tank, like new tank or slightly rusted tank, preliminary cleaning is not necessary.

For severely rust tanks we recommend filling the tank a third full with water and sharp materials such as pointed screws or broken security glass (e.g. like from a broken windshield). When choosing the right abrasive material it is helpful to know what the inside of the tank looks like. Remember that you will have to remove all of this material from the tank after derusting. Screws can be easily removed using a bar magnet – EXCEPT, however, if they are caught behind the rearmost of three splash plates. Glass splinters can be easily removed by sloshing water around inside the tank and shaking it vigorously, but it can be a tedious process to get them all out. Also note: glass pieces will stick to the sides of the tank when wet, the tank may have to be completely dry to remove all of the glass pieces.

No matter what material is used, water must be added. The total volume of the mixture should be about one third of the tank’s entire capacity. We recommend placing the tank in the drum of a concrete mixer and fastening it securely, larger tanks can be fastened outside of the drum. The concrete mixer should roll the tank in every direction at slow speed for about two hours. IT IS IMPORTANT TO TAKE EVERY POSSIBLE SAFETY PRECAUTION WHEN USING THIS METHOD! Unplug the concrete mixer when fastening the tank or removing it, and always use the mixer’s lowest setting.

Alternatively, you can shake and rattle the tank with muscle power! Large tanks may require several people. The tank does not have to be free of rust, that is what the rust converter is for, but all loose paint and rust splinters must be removed by the end of the cleaning process, especially all coarse, and greasy residue. The process must be repeated until the tank is properly cleaned.

Afterwards - as already mentioned - the tank must be flushed and cleaned in a suitable manner. All of the materials that were placed in the tank must be completely removed.
Degreasing

Degreasing must always be done BEFORE derusting as degreasing is always necessary EVEN in the case of new tanks. At WAGNER Oldieoeol we have tried all types of degreasers that are available for purchase. In the end, it turns out that the easiest and least expensive method is also the most effective. Acetone and brake cleaner are the best degreasers. Acetone is very inexpensive, yet during the degreasing process large quantities are needed making it ineffective for us to supply, as the shipping costs exceed the actual cost of the acetone. Therefore we do not supply acetone ourselves, but it can be readily purchased in paint stores and DIY stores.

All safety precautions concerning acetone and brake cleaner must be followed. As acetone and brake cleaner form flammable gases: DO NOT SMOKE OR WORK NEAR OPEN FLAMES OR SPARKS WHEN WORKING WITH BRAKE CLEANER OR ACETONE. Always wear safety goggles and gloves and have fire extinguishers in the room you are working.

Degreasing is especially important in the case of tanks that held two stroke and diesel fuels. These tanks are saturated with greasy and oily residue. This residue must be completely removed as neither rust converter nor tank sealing resin will work effectively or adhere to a greasy surface. The tank does not have to be filled completely with acetone or brake cleaner, but ALL of the interior tank surfaces must be in contact with degreasers for several hours. This can be achieved by changing the position of the tank accordingly. Tanks with splash plates must be filled with enough acetone to ensure that the splash plates are degreased.

Afterwards, flush the tank with water. No degreaser should remain in the tank.

Derusting

Mix WAGNER Rust Converter with enough water to match the capacity of the tank to be derusted. The maximum possible dilution is 1:60 (1 part rust converter to 60 parts water)

Completely fill the tank with the rust converter/water mixture. Check for air bubbles caused by the tank construction. They can occur, for example, in tanks with a filler neck that is recessed in the top of the tank. Remove the air with the aid of a syringe and an extension hose, allowing the rust converter mixture to come in contact with this section of the tank. If this is not possible, the tank must be moved after half of the application time so that the hollow space can be completely flooded.

CAUTION: Changes in the air temperature can result in the expansion of the rust converter/water mixture in the tank. This could cause the mixture to overflow from the filling cap. Never completely close the tank during derusting, always leave the filling or outlet open! REMEMBER THAT RUST CONVERTER IS CORROSIVE AND EXTREME CAUTION SHOULD BE TAKEN WHEN HANDLING RUST CONVERTER.

If the surfaces are extremely dirty we recommended repeating the washing process with fresh acetone or adding fresh acetone during the washing process. This keeps dissolved residues from drying and sticking to the cleaned surfaces. DO NOT add water to the tank after cleaning, rinse with pure acetone only! Before moving on to the next steps, check the surfaces to make sure the steel is bright and ready for the final coating. Leave the mixture in the tank for two days, then completely drain the rust converter mixture from the tank.
Tanks that are badly rusted may require a longer amount of time. Depending on the severity of the rust it may take as long as 4-6 days to fully convert the rust. Low temperatures do not prolong the application time, the rust converter mixture is effective at temperatures of 0°C (32°F) or above.

Use small mirrors and lights to check the derusted surfaces. If you determine that the inside of the tank is not yet sufficiently derusted, the entire procedure must be repeated. The used rust converter/water mixture can be filtered through a fine screen and used to fill the tank again. Or for faster results, prepare a new mixture. Always degrease the tank again using acetone or brake cleaner before attempting a second derusting. Tests have shown that greasy or oily residue is ALWAYS the cause of insufficient de-rusting. Especially, but not only, in the case of tanks that contained two stroke fuel or diesel fuel as greasy residue often gets underneath the rust and paint scales, where it is difficult to remove. Note: No rust converter or tank sealing resin is effective on a greasy or oily surface.

Depending on the dilution ratio or concentration of the rust converter/water mixture a rust film can easily form in the tank after drying. We recommend conducting final phosphating with the remaining quantity of rust converter.

**Cleaning after Derusting**

All dust, residue, and liquid rust converter must be removed from the tank before applying the final coating. Therefore, immediately after removing the mixture of rust converter and water you must wash the surfaces with acetone until the surfaces are completely clean. Then remove the acetone and wait a few minutes for the surfaces to dry. Once dry inspect the surfaces again, if you find any grease/oils/or other contaminates you will have to wash them with acetone again.

**Final phosphating (optional)**

To intensify the effect of the phosphating, mix the remaining rust converter at a ratio of 1:5 and pour it into the tank while it is still wet. Then distribute the mixture by shaking the tank and wait 2-4 hours. Turn and move the tank several times during this period so that all surfaces phosphate. The phosphate layer will seldom be completely even; it is difficult to avoid spots or runs as phosphating depends on the condition of the underlying surface. However, it has no effect on the quality of the tank coating.

In most tanks the rust converter leaves a clean metallic, grey phosphate surface. Depending on the applied thickness of this phosphate layer, there may be a powdery dust on the surface. On other tanks a very thick phosphate layer forms. Note: A jelly-like layer can form if the mixture is left in the tank for too long.

Neither dust, residue, nor liquid rust converter may remain in the tank. Therefore, a final cleaning with acetone is always necessary to produce a surface that is clean, dry and firm. After the final phosphating do not use water in the tank-rinse only with pure acetone. The sealing coat can be applied directly to the surface if cleaned in this manner.

**Drying**

Afterwards, immediately uncover all openings on the tank to provide for air circulation. Ideally blow the tank out with an air compressor. Drying can be sped up using a hot air blower or hair dryer. Completely dry the tank as quickly as possible to prevent any rust formation.
Sealing (if necessary)

If the water test revealed any leaks they can now be sealed with WAGNER Tank Sealing Resin. If possible the leaking seam or hole should be pretreated form the outside with tank sealing resin. Apply two to three layers of resin and then carry out the internal sealing process.

Large holes must be sanded until all paint is removed and then treated with rust converter. Then a piece of glass cloth (fiberglass) can be cut and glued over the hole using tank sealing resin. Afterwards, use a brush to apply a thin coat of tank sealing resin over the patch. After a few hours, when the resin has firmly dried, apply a second layer of resin. Repeat inspection after a few hours, then apply a third layer of resin.

To prevent tank sealing resin from being visible from the outside one can attempt to seal small leaks by taping them on the outside with duct tape and then carrying out the inner tank sealing process. In this case at least three coats of inner sealing should be applied to the damaged area. Do not remove the tape until the tank sealing resin has completely dried, at least 10 days after applying the resin.

Coating

WAGNER Tank Sealing Resin hardens when exposed to humidity in the air, so it is important that the sealing process be carried out when the tank has completely dried so that excess resin does not come into contact with moisture. Any remaining amounts of tank sealing resin must be carefully sealed to prevent exposure to air and moisture so that it can be used for additional coatings.

Before sealing a tank, all tank openings must be closed carefully. After pouring the WAGNER Tank Sealing Resin into the tank, the filling opening must also be closed, ideally with a spare tank cap. If a secondary tank cap is not available a tear resistant plastic foil should be placed over the opening before screwing on the cap to ensure that the ventilation hole is not accidently sealed.

Check the protective covering of the tank. If, despite all care, resin emerges at an undesired location, it can be removed with acetone or PU thinner. Damage to dry surfaces cannot be ruled out when removing resin!

First layer:
Pour the required amount of WAGNER Tank Sealing Resin into the tank and shake vigorously; then carefully slosh it around. The resin should completely cover all of the tank’s inner surfaces, including any partitions and/or splash plates.

After 5-10 minutes of sloshing/wetting the tanks surfaces, pour any remaining resin from the tank into a sealable container. Do not pour residual amounts from the tank back into the original container, use a separate sealable container. It is very important to remove any and all excess resin, if necessary use a syringe with silicon extension hose to remove any remaining resin. If the tank has ventilation pipes they must be blown out with compressed air to keep them free and prevent accidental blockage.
Due to their construction it will impossible, in a few tanks, to avoid a collection of resin at the lowest point of the tank. In such circumstances the excess resin must be removed before it becomes too thick. Once the resin has thickened it will not be possible to extract it!

Depending on the ambient temperature it can take about 4 hours until the liquid hardens. During this time the tank should be turned repeatedly to change the direction of any flowing resin. In the end, it cannot be avoided that a certain amount of resin will accumulate at the lowest point. Nearing the end of the drying the tank should be positioned so that any remaining resin will harden in an area where it will not affect the function of the tank.

**Second layer:**
When the inner coating is dry to the touch and no longer sticky (after 12-24 hours, depending on the temperature), pour in the rest of the WAGNER Tank Sealing Resin and slosh around the same as you did when you applied the first coat. Again, completely empty the tank to remove any remaining liquid.

**NOTE:** After 48 hours it is no longer possible to apply a second coating as the first layer has hardened and will not be able to bond with the second layer. If you have/cannot apply the second coating within 48 hours there is no other choice but to forgo the second layer.

**Touch-up (if necessary)**

The edges of the opening for fuel sensors, pumps, tank filling necks, and the metal surfaces of these openings can be touched up with tank sealing resin by using cotton buds or small brushes.

**Hardening**

For hardening: store the tank in an open, dry, well ventilated room. The hardening time for the inner tank sealing is about 7 to 8 days at temperatures above 15°C (60°F). Below an air temperature of 15°C (60°F) allow the sealed tank twice as long to harden before filling it with fuel.

**Cleaning**

All tools and objects can be cleaned with acetone, as long as the resin has not hardened.

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