

Nothing improves the appearance of a pipe organ chamber more than clean, undented pipework. Most theatre organ pipes have been moved a few times, with significant accumulated dents, and probably with much of the original, 50-odd-years of grime on their surfaces. However, a word of caution is in order before cleaning pipes. Pipe-voicing is an art and amateurs should beware, while cleaning organ pipes, not to alter the voicing by changing the position of mouth parts on flue pipes or the curvature of the tongue on reed pipes.

Cleaning Wood Pipes: Use tri-sodium phosphate (TSP) in water solution following directions on the container. TSP is an excellent, suds-free, strong cleaner that leaves no residue, but some users may require rubber gloves to prevent hand irritation. Observe and mark the orientation of pipe stoppers before removing them. Use a damp rag (never a wet rag) to scrub the pipe surfaces. Do a small area at a time and avoid contact with leathered lips. Steel wool soap pads can be used if surfaces are especially grimy, but care must be used not to penetrate or damage the wood finish. Rinse pipe surfaces with a separate damp cloth and warm clear water and then towel dry. Clean the stopper and toe in the same manner. Repack the stopper, if necessary, and make any structural repairs in the pipe that are needed, such as loose glue joints, missing ears or beards, etc. This thorough cleaning takes time, about 6 pipes per hour for small pipes and about one per hour for the large pipes. However, all grime will be removed and the original, orange shellacked surface should gleam. If some surface spots are bare, touch them up with orange shellac (Zinsser Bulls Eye Shellac is very good). Don't re-shellac pipes unless it is necessary. In most cases, the old finish, once uncovered, makes a better appearance.

Cleaning Metal Flue Pipes: Metal pipes are made principally of combinations of lead, tin, lead/tin alloys, and zinc. These relatively soft metals can be rather easily cut and shaped by pipe makers and manipulated by pipe voicers. Some reed pipes are made of a predominately lead alloy (say 80% lead and 20% tin) which can tarnish to a very dark blue, almost black, color with age forming an extremely good protective coating against further corrosion. A predominately tin pipe metal (say 90% tin and 10% lead) has a bright, corrosion-resistant surface but cost restricts its use mainly to narrow scaled string ranks. If a bright appearance at low cost is desired, then a thin, tin coating can be clad to one side of sheet lead to form a pipe metal called "hoyt" metal which was used for Wurlitzer Vox Humanas and other reeds. Spotted metal, about a 50/50 alloy of tin and lead, is used for many flue and reed pipes. Zinc is the most rigid of common pipe metals, and for this reason it is used for the resonators of the larger base pipes of many

Cleaning Organ Pipes

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ranks such as strings, diapasons, reeds, etc. Zinc is also used for the boots of many reeds where pipe support strength is important. New zinc is very bright in appearance but oxidizes to a dull dray color with age. Unfortunately, especially if stored in a damp unheated area, zinc can further oxidize or corrode forming a white powdery surface material, sometimes called "White rust," which can destroy the base metal. For this reason pipe makers usually give zinc portions of pipes a coating of shellac or clear lacquer for protection against corrosion. This coating is applied only to the exposed outside surface and is often inadvertently removed when the pipes are cleaned. Therefore, it is necessary to re-coat zinc surfaces after pipe cleaning. Two coats from a spray can of heavy duty, clear lacquer work very well. Protective spray coatings are not required for other types of pipe metal.

Metal pipes are best cleaned with TSP solution but with a few precautions. All string pipes and most other metal flue pipes can be flooded with cleaning and rinsing (a garden hose works very well) liquids. However, some pipes (such as some Diapasons) have upper lips that are leathered which, if soaked, would be removed. Hence these pipes must be cleaned carefully with a damp rag to avoid wetting the leather. Also, steel wool scouring pads are coarse enough to scratch and mar the surface appearance of pipes made of spotted metal or hoyt metal. For these pipes it is best to use 4-0 steel wool, brushed across hand soap as a lubricant, to scour the surfaces.

Cleaning Reed Pipes: It is best to first remove the shallot, reed tongue, and wedge and store them in holes bored in a 2"x4"x12" wood block drilled for this purpose. The shallot is easily removed by placing a diagonal cutter at the base of the shallot and prying up gently to exceed the wedge force. Be sure not to get the shallots and tongues mixed up; the shallots are marked but the tongues are not marked. With these parts removed, the pipe may be cleaned with TSP solution and 4-0 steel wool with mild soap to scour the surface thoroughly.

Once pipe resonators are cleaned and dried, pipe repairs should be made. Dents can be removed with a rubber hammer using a steel pipe as a mandrel. Broken seams, joints, braces, etc., should be resoldered. The pipe should be mitered or re-mitered if necessary. Next the zinc portions should be inspected for severe oxidation (the white rust discussed above). This oxide can be removed by brushing some diluted hydrochloric acid on the material, allowing the acid to act, then rinsing with clear water. This acid is avail-

able as muriatic acid from most hardware and building supply stores. Full strength muriatic acid may act too fast to control, hence dilution is desirable to regulate speed. Some experimentation may be necessary, and rubber gloves and eye protection should be used. The pipe should be cleaned of the dirt layer before the acid is applied, otherwise the acid will not be as effective. The acid cleaning can be improved by using 4-0 steel wool to scour the surface while in the acid solution. This acid may blacken other pipe metals so be sure to confine it only to the zinc surfaces and make sure it is thoroughly rinsed off with clear water. Once the zinc is rinsed and dry, spray two coats of clear lacquer over it as a protective coating against oxidation. This acid can also be used to remove any green corrosion which may exist on the phosphor bronze tuning wires.

The reed shallots and tongue should be immersed in a mild brass cleaner (liquid Ajax with ammonia works very well) using a tooth brush to remove dirt, then rinsed thoroughly in clear water and towel dried. After air-drying is complete, the shallot side of the reed tongue should be sanded using the finest grade of crocus cloth to remove pitting and dirt particles embedded in the surface. To do this, lay the crocus cloth on a flat surface, such as glass, then roll out the reed tongue under the tips of the fingers, shallot side on the crocus cloth, and stroke it back and forth across the cloth. Then wipe the reed tongue with a clean cloth and handle it with tweezers afterwards to keep fingerprints off of it. The face of the shallot should be sanded and wiped clean in a similar manner. The shallots and reed tongues can now be reassembled into the blocks using care to achieve correct alignments. There is usually a voicer's mark on the shallot to indicate depth of penetration into the block. It takes 3-4 days to clean a rank of reeds. Do a few pipes at a time, then install and tune them to monitor progress.

Cleanliness is essential to the proper operation of reed pipes. Normally, the reed tongue makes a noise-free rolling contact as it vibrates against the shallot face. However, a tiny speck of dirt can interfere with this rolling contact and cause the reed to slap against the shallot face giving the familiar buzzy sound of a dirty reed. This problem is usually corrected by pulling a dollar bill between reed and shallot face to clean these surfaces. However, meticulously cleaned reed pipes are much less susceptible to these dirt problems.

It is also advisable to scrub all grime from chests, rack-boards, support lumber, percussions, etc., with a damp rag and TSP solution. A clean, neatly installed organ chamber is much easier to maintain. ■

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