

Lubricants

Roger Gable

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The two most common lubricant treatments that Roger uses are Protek and Teflon powder. He uses Protek in the bushings. Why does the flange seize up? The felt keeps the pins pretty safe from corrosion, so corrosion is not the reason. The pins are plated with nickel or are brass. Flanges seize because the felts swell.

Alcohol and water have been used since the 1880's. Denatured alcohol contains ethanol. Ethanol has 2 carbons and isopropanol has 3 carbons. The water swells the felt, the alcohol flashes it off and the felt shrinks. Results can be seen in about three or four hours. Roger always uses alcohol and water on center pins.

Dale discovered **Fomblin** from Supply 88. Another chemical is **brake cleaner**, which contains carbon tetrachloride (poisonous). Some customers will not pay to have the flange pins replaced; spray brake cleaner on them for quick results. Yamaha and Wurlitzer used silicone.

Roger uses **Protek ProLube** on balance rail bushings, front rail bushings, and the damper rail lift rod. Protek makes both ProLube and Center Pin Lubricant.

For pedal pins, or anything metal-to-metal, use **axel grease**. Another option is to install a **rubber bushing**. Take the time to implement a permanent solution so you don't have to go back and correct it again.

Teflon is good for knuckles and capstans. Roger did not find any difference with Teflon on capstans, but it does make a significant change on the knuckles. Bolstering the felt where the capstan contacts the felt on a grand whippen makes a difference even without lubrication.

Teflon comes in tubes, sheets, bottles and cans. For grand actions rubbing against the key-slip, Roger will drill and countersink little holes in a piece of Teflon strip and will then screw it onto the front of the key frame. Superglue could also hold it. This strip smooths the connection with the key-slip so the movement is silent.

To put Teflon powder on the top of an upright jack, drill a hole into the tip of a hammer shank like a little cup or spoon, and scoop it to deposit the powder onto the jack.

Ed uses Teflon heat-shrink tubing on his front-rail pins. Slide it on, use a heat gun and let it shrink down; however, it will shrink fatter in diameter at the top than lower down the pin, so when you shrink it, you have to hold the top tight with a tool.

DAG is graphite in alcohol. Use it on the ends of jacks, on bridge caps, wooden capstan dowels, and player piano wind motors.

Ed uses **beeswax** on wood screws.

McLube is used for mold release so parts don't stick to the mold when they are to be removed. Doug Wood uses McLube for almost everything. It comes in aerosol cans, or in a can of liquid for use with applicators. Roger passed around a piece of mahogany veneer with seven

coats of McLube on the back; we could feel how slippery it was. McLube dries dry rather than wet and works well on key pins. It has an odor, so take the keyframe or the action outside.

Joe uses **Ballistol** on the friction points of strings on old pianos before tuning to prevent breakage. He puts a little in an eyedrop bottle, cuts the tip off the cap so the hole is not so tiny, and squirts some onto an old hammer felt. He uses this saturated felt as a brush along the v-bar, bridges, and strings. It works well for squeaky key bushings.

Ballistol is for anti-corrosion, is non-toxic, and is sold at gun shops and auto parts stores. Ballistol was invented by a father and son team in the late 19th century. It consists of mineral oil and alcohol. They wanted something that would do everything -- soften their leather back packs, heal wounds, lubricate.

CLP (Center Pin Lubricant, from Pianotek) is used by most tuners for center pins.

MPL1 by Protek is like VJ Lube.

VJ Lube is Vaseline talcum powder and lanolin.

To lubricate casters, put **wheel-bearing grease** in the stem socket.

Use **Teflon Tape** (used by plumbers) for:

- Trap-work pins
- Wrap the axel
- Places to take up a little play in metal to metal or metal to wood
- Lift trays in grand pianos (VJ Lube, or Teflon tape if there is too much play)

TriFlow is an industrial strength lubricant for bicycles. Steve Brady used it in the pedal box, on the pedal rods, and everywhere the pedals squeaked. Bike shops carry two kinds. Wet season is thicker, and dry season is thinner. There is a drip bottle version and a spray can. Tri-Flow is a lubricant, whereas WD-40 is a degreaser.

The label states:

“Tri-Flow Superior Lubricant is a superior, light viscosity lube that allows for deep penetration into hard-to-reach moving parts. The aerosol spray action allows you to have a focused spray for even application. High-grade petroleum oils provide optimum lubrication under extreme temperatures (-60 to 475 degrees F) and humidity. Formulated solvents soften and remove dirt and contaminants, while special additives displace moisture and prevent rust and corrosion. Formulated with P.T.F.E.”

Don't use these lubricants:

Do not ever lubricate tuning pins.

Don't use silicon on or in a piano because it will creep, possibly all the way to the tuning pins.

GLUE TIP:

To fasten felt dampers to an aluminum rod or spring, use E-6000 (toxic to breathe: Perchloraethylene.)

JOE GOHEEN'S HAND-OUT

LIQUIDS

- Ballistol is good for pedal squeaks and for string bearing points for old piano pitch raises. Put a few drops on a wedge of hammer scrap felt. Coat the string friction points. Take care to avoid copper windings. This is a fairly heavy liquid, so I don't use it on new pianos, only old uprights where tone is less an issue than string breakage. Available in gun shops.
- Protek: from Pianotek. For tight action centers. A drop on squeaky key bushings sometimes works.
- McLube 444 is from Pianotek. Use for key frames, shift springs, glides, and disassembled pedal pivot rods. Brush on.

SPRAYS

- McLube 1725L, from Pianotek. This is a mold-release lube that dries dry, with no liquid residue. You don't want any liquid on key pins. I only use this for key pins when I have all the keys out. Aerosols are bad for the environment, but this one use is a compromise I make. I usually spray outside, as McLube has a fairly strong odor and is toxic. Let it dry a few minutes before bringing the key frame back inside.

PASTES

- MPL-1, from Protek & Pianotek, is a fluoropolymer lubricant that dries clear and dry. It is great for pedals. This has largely replaced VJ-Lube in my kit. Use it for pedal rods -- top and bottom -- trap lever springs, and pivot rods.
- VJ-Lube is Vic Jackson's lube from the 1960's. The mix is equal parts of Vaseline, talcum powder, and lanolin, which can be heated in a double boiler on the stove to form a paste. One batch yields a lifetime supply. I find it dries out after several years, but it works well.

POWDERS

- Teflon powder is a microfine powder from the supply houses. It is good for grand knuckles only if they are squeaking. The word on the street is that it can cause squeaking over time, so I don't routinely use this anymore.

WHAT NOT TO USE

- Don't use silicone anywhere near tuning pins. It can creep.
- WD-40 contains silicone. I've never used this on a piano, although it may be OK for pedal squeaks.