

The Steinway Sostenuto
Shedding Light On A System In The Dark
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Synopsis: This class is for the piano technician who has clients who must have a functioning sostenuto. Often this client would be playing a Steinway. This class will clarify use and functioning of the Steinway sostenuto. An organized approach to regulating the sostenuto will be presented.

The function of the sostenuto is to hold up specific dampers. The dampers are first lifted with the key, then the sostenuto pedal is depressed, and the lifted dampers remain lifted. All other dampers and the pedal work independently from the dampers raised by the sostenuto. Each damper block has a felt covered tab, when the damper is lifted by the key or the pedal, the tab raised. The sostenuto pedal pivots a rod that has a lip. When the rod pivots, the lip slips under the sostenuto tab, keeping that damper lifted.

The foundation for a functioning sostenuto is well regulated damper system. Damper lift must be regulated so that the key raises the damper 1/4 inch. (Measure this first with a ruler.) Dampers must lift evenly. Make sure the damper tray lifts the dampers to the same height as the keys.

For easier pedal travel adjustment, install 5/16 x 1 1/4 lag bolt above the damper stop felt and above the sostenuto stop felt. Drill a 3/4 x 1/4 deep recess with a forstner or spade bit and a 7/32 pilot hole.

Five tests for the sostenuto system.

1. Slowly depress and release the damper pedal. No damper tabs should touch the sostenuto rod or hang up on the rod.
2. Slowly depress and release the sostenuto pedal. The sostenuto rod should not touch or activate any dampers.
3. Fully depress and hold the damper pedal. Depress the sostenuto pedal and release the damper pedal. The sostenuto pedal should lift the dampers the same height or slightly higher than the damper pedal. The dampers should remain lifted when the damper pedal is released. Tap lightly on the damper heads being held by the sostenuto. They should not fall to the strings.
4. Play each key that has a damper with an average blow, hold the key down, depress the sostenuto, then release the key. The damper should remain lifted off the string.

5. Hold down just the sostenuto pedal, strike a hard blow to each key with a damper. Each damper should rise and fall normally.

If there is failure with any of the tests, the sostenuto needs to be regulated.

Sostenuto regulation puts the sostenuto rod into the correct position in relationship to the sostenuto tabs. At rest the sostenuto rod will be 1/16" above the tabs and 1/16" out from the tabs

Evaluate the tab alignment. The tabs need to be in a straight line vertically and horizontally. For the horizontal line, run your thumb along the front of the tabs feeling any that are out of line. Adjust the tabs by bending the damper wire just above the block with backcheck bending pliers. After bending the damper wire, the damper head will need to be re seated - lift the damper head and rotate front to back so the lift is even front to back. For the vertical tab line, use a finger under the tabs to feel for evenness. Tabs that are too high are lowered by inserting travel paper under the tab stop felt. If a tab is too low, the felt may be trimmed with a razor blade. (I have not trimmed tab stop felt.)

The sostenuto rod rotates in action cloth lined brackets. Eliminate looseness of the rod in the brackets by bending the latch with pliers or replacing the cloth.

Sostenuto regulation procedure.

Adjust the sostenuto rod height.

With the action out of the piano on a workbench or action caddy (I only work with the action on the action caddy), the sostenuto rod lip should be pointing downward in the 7 o'clock position at rest. (It is ideal for the action to be on a solid work surface with the back rail in contact with the surface.) To adjust the 7 o'clock start position, carefully bend the sostenuto rod monkey hook. Bend the hook opposite from the way you want the lip to go. (I have never done this.)

Measure from the keybed to 1/16" above the top of the sostenuto tabs. This measurement is the height of the sostenuto rod at rest.

Steinway makes a tool to transfer this measurement. To use the Steinway tool, adjust the wing nut until the metal tab is just below the damper tabs, then the leather piece will be 1/16 above the tab. At the action, the leather piece attached to the metal lip indicates the proper height for the sostenuto lip at rest.

A small T rule also works. When transferring the measurement with a T rule from the piano to the action, subtract the thickness of the keyframe and set the rule on the keyframe. Better, have a small block of wood the exact thickness of the keyframe and set the T rule on the block of wood when measuring the height of the top of the sostenuto tab.

The height of the sostenuto rod is adjusted by bending the sostenuto brackets so that the sostenuto rod lip at the rest position (7 o'clock) is the same height from the keybed as the measurement to 1/16" above the sostenuto tab. Measure the tab height at each bracket.

To transfer the height using the Steinway tool, I put a block of wood with a bubble gauge taped to the block. I put the Steinway tool on the block, making sure the block is held level. Then bend the brackets so the leather of the tool just slips under the lip of the sostenuto rod.

To transfer the height using a T-rule, set the T rule on the wood of the keyframe. Use the bubble level to bring the Sostenuto lip height to the T-rule. Bend the sostenuto brackets as needed. (I prefer the Steinway tool.)

(On older Steinways with cast brackets, leather washers need to be added or removed. Do not use paper. I have not worked on a sostenuto system with cast brackets.)

Adjust the sostenuto pedal rod so the lift dowel is flush with the top of the keybed when the pedal is at rest. Install the action in the piano. Do not install the cheek blocks at this point.

Check that the sostenuto rod lifts the dampers to the correct height using test 3, (Press damper pedal, then sostenuto pedal, release the damper pedal.) **The rod has not been adjusted forward and back. Move the action in or out so the lip holds the tabs when the sostenuto pedal is depressed.** (Usually you will move the action in.) If the dampers fall a lot when the damper pedal is released, the sostenuto may need more travel or the rod is too low. If the rod height needs to raise by more than a slight amount, recheck the measurement from the tabs. Check if blocking material has been added to the sostenuto trapwork. Remove material

Adjust the sostenuto rod in / out.

Install the cheek blocks. Notice the direction the action moves. This indicates the direction the rod needs to be moved. (If the action moves out, towards the keys, the sostenuto rod needs to move in, towards the tail.) When the in or out position of the sostenuto rod needs to be adjusted, start by loosening the sostenuto bracket screw nearest the keys. With this screw loosened, the

bracket is held in place but can be moved with a gentle tap. If the bracket does not move when tapped, loosen the other screw slightly.

The sostenuto rod needs to start out too far. Put the action in the piano with cheek blocks. Using a long screwdriver or a metal rod (about 1/4 × 18"), tap each bracket in (towards the tail of the piano) the same amount. The rod (or slot screwdriver) is inserted between the action bracket and whippen, under the let off button. Sight from above to monitor the rod movement. With every tap, test the sostenuto pedal with the first three sostenuto system tests. As soon as the dampers are held by the sostenuto in test 3, the rod is in the correct place. Pull the action and tighten the loosened sostenuto bracket screws. Do not over tighten.

If the dampers are being lifted significantly higher with the sostenuto pedal, lessen the sostenuto pedal travel by adding blocking felt (or lowering the adjustment bolt).

After this first setting, repeat the five sostenuto tests to make further adjustments as needed.

1. Slowly depress and release the damper pedal. If damper tabs touch or hang up, the rod is in too far, towards the tail) or tabs are out of line (coming towards the keys.)
2. Slowly depress and release the sostenuto pedal. If dampers are touched, the sostenuto rod is too low or tabs are out of line.
3. Depress the damper pedal. With damper pedal down, depress the sostenuto pedal. If no dampers or a few dampers are held off the strings, the action is out of place **or a preliminary setting is incorrect (check that dampers lift 1/4 inch, and that damper lift is the same with key and pedal.) Make sure keyblocks are in.** The rod may be slightly high or tabs are out of line. If lowering the rod slightly does not correct the problem, check the entire regulation procedure.

If the dampers do not lift slightly past the damper pedal lift, the sostenuto rod is slightly low or the damper pedal is raising the dampers too high or more sostenuto travel is needed. Adjust the damper pedal lift or bend sostenuto rod slightly higher or increase sostenuto travel by removing material from the felt stop.

If the sostenuto lifts the dampers too high, the rod is too high, the sostenuto pedal travels too far, or the damper pedal is not lifting the dampers enough. Adjust the pedal lift and /or check the sostenuto rod height. If high, bend it lower. If the rod height is correct, lessen the sostenuto pedal travel with additional blocking felt, or adjust the installed bolt stop.

4. Check that each individual damper will be held by the sostenuto pedal. If the dampers release when the key is released, the distance the damper travel with the key differs from the distance the damper travels with the pedal. Recheck the sustain pedal adjustment and repeat the sostenuto regulating procedure.
5. Hold down the sostenuto pedal. Give each key a hard blow. All dampers should rise and fall. If a damper is held up, the sostenuto rod is out too far. Tap the sostenuto brackets inward, towards the piano tail.

Shift the action a few times with the una corda pedal and recheck the sostenuto. If there is play between the key frame pin and the brass guide plate in the cheek block, the sostenuto will not stay in regulation. If there is play between the key frame pin and the brass guide plate in the cheek block, remove the brass guide and dimple the back side with a punch.

Setting damper lift from the key.

Make sure there is ample play with the damper upstop rail.

Flag the dampers of 3 white keys. Measure the damper lift for these keys. If the damper lift is less than $\frac{1}{4}$, damper block needs to be lowered. Pull the action. Lower the damper block of the three flagged dampers. Replace the action. Measure the damper lift of the flagged dampers. Repeat until one of the flagged dampers lifts $\frac{1}{4}$ ". To check key travel to the point of damper lift, I put blocking (punchings with cutout) under key until damper lift is barely perceived when pushing the key down to the punchings. This marks the place in the key travel for the key end felt to begin lifting the damper. Key travel should be about $\frac{1}{8}$ inch at this point.

Loosen damper pedal nut. Raise the damper tray by turning this nut up until tray just lifts the flagged damper. Using smaller movements lower and raise the damper tray until the tray is right at the position of the flagged damper block. The tray is now holding the damper blocks at the correct height. Remove action. Loosen the damper screw. Check that block moves freely on the damper wire. The block will rest on the tray. Gently tighten the damper wire screw. Repeat with all dampers. Replace action. Lower the damper pedal nut. Check the height the dampers lift with the keys. If correct remove action and quickly fix damper twist. After correcting damper twist, snugly tighten the damper block screws and check again for damper twist.

Credits: Regulating the Steinway Sostenuto, Matt Grossman, RPT, November 1982 PTJ

Piano Shop Trade Secrets, Regulating the Steinway Grand Sostenuto, John Hartman, RPT,

Part I – October 2001, Part II – November 2001, PTJ

Von Der Werkstatt, Hold It! The Sostunuto System, Priscilla & Joel Rappaport, June 1981, PTJ