

Grandwork™ Bedding Protocol

A Foundation for Action Performance and Tone

Initial Preparation:

- 1 Remove fallboard and cheekblocks
- 2 Remove action to work surface – lid of piano works if protected.
- 3 Tighten hammer flange screws but do not file hammers (wearmarks indicate spacing at strike).
- 4 Rough hammershanks off rest cushions as needed.
- 5 Resolve any excessive friction and prepare keyframe as needed.
- 6 Remove return spring:
 - a. Keep screws in order to avoid stripping holes – use painter’s tape.
 - b. Mark orientation of spring for symmetrical style spring.
 - c. Dress the spring side of keyframe if indented.
- 7 Clean, repair, and dress keybed as needed – retain original surface levels if possible.

Bed Cheekblocks:

- 8 Return action and regulate cheek blocks – must not over-bear on guide pins:
 - a. For crowned fit, frontrail should tap with a white punching under secured cheekblock.
 - b. If it doesn’t, try thicker punchings until a tap is produced, then back up one size.
 - c. For full fit, create tap symptom with punching under frontrail 6” from end.
 - d. If fit is too loose, remove factory shims (if no adjustment feature).
 - e. Shim cheekblock brackets down if more is needed for bearing.
 - f. Add frontrail punchings under cheekblocks to fine tune fit.

Short Form Bedding – Test Frontrail and Backrail:

- 1 Secure cheekblocks and back glider studs up out of the way.
- 2 Check frontrail fit (tap with finger).
- 3 Check backrail fit (tap long screwdriver through strings resting on backrail cloth).
- 4 If both frontrail and backrail fit, proceed to step 24.
- 5 If frontrail or backrail is not solid, proceed with long form bedding.

Long Form Bedding - Backrail:

- 6 Remove topstack and keys from keyframe.
- 7 Fit keyframe’s backrail to keybed (no keys, no topstack, and no return spring):
 - a. Shim dogs to stop keyframe at cheekblock positioning.
 - b. Tap at back of backrail cloth (over lip of backrail that contacts keybed).
- 8 Identify areas that tap back and note with chalk on backrail cloth.

- 9 Press down on either side of no-tap areas to validate – do not sand a gap too big to tap!!
- 10 Remove keyframe to rest front of frontrail on floor (protect floor as needed).
- 11 Sand keyframe using 220 or 120 sandpaper on a flat sanding block.
- 12 Take away least material possible to eliminate tapping.
- 13 Clear dust away from keybed and keyframe as you go (wear a dust mask).
- 14 If light pressure between sections eliminates tapping, topstack can complete fit.

Long Form Bedding - Topstack:

- 15 Remove keyframe, installing topstack with no screws, and return it to piano.
- 16 Tap feet of topstack and shim to just eliminate tapping.
- 17 Back feet require reaching through strings with long screwdriver.
- 18 Balance punchings work well as shims. Glue to cleats and trim when done.
- 19 Screw on topstack (still no keys) and validate backrail bedding.

Long Form Bedding - Frontrail:

- 20 Confirm no balancerail contact.
- 21 Remove least material from contact spots to achieve full contact.
- 22 For a crowned frontrail, fully fit the middle, leaving spaces at the ends equal if possible:
 - a. One at a time, hold down ends of frontrail and tap-test fit toward the middle.
 - b. Draw 220 sandpaper strips between keyframe and keybed, grit side up.
 - c. Sand small amounts, remove all dust, and test.
 - d. Taper sanded areas into unsanded areas.
- 23 Touch up cheekblock fit by adjustment feature or by changing frontrail punching shim sizes.

Fully Assemble Action and Bed Balancerail:

- 24 Secure cheekblocks.
- 25 Place WNG Keyframe Bedding Tool on key buttons (cutaway is to clear keypins):
 - a. Make sure plunger bears against pinblock (avoid holes).
 - b. Dial indicator detects motion of keyframe/motion of keybed.
- 26 Fully depress pedals – fit glider studs to retain contact during pedal use:
 - a. Turn glider studs down until lightly pressing the studs produces no motion.
 - b. Pressing too hard or moving pedals can produce false positive.
- 27 Validate that frontrail and backrail have not changed.

Take Samples and Proceed to Bench Setup:

- 28 Use a Grandwork™ Bedding Kit to memorize bedding (see the Grandwork™ Keystep Protocol).
- 29 Use a WNG Dip Tool's weight to trip kissing samples of string heights along the strike line.
- 30 Then follow the Grandwork™ Regulation Protocol for on-bench setup and regulation.