

BASIC PIANO TECH SKILLS

--TOOLS AND STANDARDS--

Skills:

1. Flange bushing
2. Flange pinning
3. Key bushing
4. String replacement
5. String tying
6. Hitch pin loop
7. Hammer filing
8. Hammer shank replacement
9. Grand and vertical regulation (See *Vertical Regulation Curriculum* and *Grand Regulation Curriculum* or other publication covering the topic)

Flange bushing

TOOLS-----

- ✓ Center pins
- ✓ Bushing cloth, cut to proper width,
- ✓ Needle nose pliers to help pull cloth through
- ✓ Center pin punch
- ✓ Micrometer
- ✓ Drill, #37, .104"
- ✓ Pin vise to hold bit
- ✓ Glue
- ✓ Tooth pick for applying glue

STANDARDS-----

1. Proper felt removal
2. Careful drilling
3. Pull felt to end, to preserve
4. Don't twist felt
5. Apply glue carefully, proper spots
6. Size pin = 19, larger pin later
7. To determine pin gauge, $(d-10)/2 = \text{pin gauge}$
8. Be sure to put dummy pin in
9. Test flange hole size to know what's there

Flange pinning

TOOLS-----

- ✓ Reamers/burnisher, Mannino kit, or home made using roughend center pins with file NOT tapered
- ✓ Gram gauge
- ✓ Flush cutter for cutting pins
- ✓ Razor blade

STANDARDS-----

1. Proper tightness 5-7 swings, 4 -6 grams
2. Clean felt trimming
3. Clean cut of pin
4. No wobble
5. Tight in wood, free in felt
6. Seam, on top

Key bushing

TOOLS-----

- ✓ Bushing cloth, high quality (white center), 3/8" width proper thickness (usually medium)
- ✓ Glue
- ✓ Caul for field repairs
- ✓ Razor blade
- ✓ Micrometer to measure pin size
- ✓ Exacto blade to trim and clean inside and outside (use spade blade and standard pointed blade for cleaning mortise)
- ✓ Key easing pliers
- ✓ CF tool

STANDARDS-----

1. Chose correct size call and dry fit caul to be sure the felt thickness is correct bushing fit
2. Neat, clean appearance, no glue squeeze out in mortise, smooth wood (shoulders)
3. 3/16 depth of felt in mortise
4. .012 space between pin and one side of bushing (Manilla envelope)
5. Check bushing depth in mortise
6. Check for glue squeeze out (inside)
7. Check balance rail hole for proper fit (no pulley kits)

String replacement and hitch pin loop

TOOLS-----

- ✓ Coil maker
- ✓ Tuning pin crank
- ✓ Height gauge (ruler with T)
- ✓ Coil lifter
- ✓ Round nose pliers
- ✓ Wire cutters
- ✓ Tuning pin punch
- ✓ Hitch pin coil maker
- ✓ Gauge for coil length
- ✓ Brass drift
- ✓ Tuning lever
- ✓ Piano wire (size ≥ 13 , small makes it easier)
- ✓ Needle nose and regular pliers
- ✓ Bandaid

STANDARDS-----

Hitch pin coil

1. At least 3 turns
2. Neat, tight coils
3. Tail, $\frac{1}{4}$ "
4. Correct direction for tail
5. Be sure string goes through agraffe (under capo bar)

Tuning pin & coil

1. 2 $\frac{1}{2}$ -3 $\frac{1}{2}$ coils
2. becket position at 90 degrees to string
3. height of tuning pin matches other pins
4. coil $\frac{1}{8}$ " from "plate"
5. coils tight
6. string tapped down at hitch pin and across bridge
7. strings pass through bridge pins and agraffe

String splicing

1. Splice holds
2. Short tails

Hammer filing

TOOLS-----

- ✓ Sandpaper paddles and strips of various grits

STANDARDS-----

1. Correct egg shape
2. Not lopsided
3. Smooth surface (no tufts)
4. Square to the side especially at the crown

Hammer shank replacement

TOOLS-----

- ✓ Hammer shanks
- ✓ Hammer head extractor
- ✓ Glue
- ✓ Hammershank clamps
- ✓ Glue escape maker
- ✓ Knurler
- ✓ Box cutter/knife (to remove collar)
- ✓ Heat gun/ Butane lighter
- ✓ Drill bit (smaller than shank) #39
- ✓ Drill bit for cleaning hole (7/32")
- ✓ Drywall screw (point filed flate)
- ✓ Hammer shank nipper

STANDARDS-----

1. No damage to butt or head
2. Shank grain pointing front to back (curly pattern on sides)
3. Glue escape slot
4. Shank & head centered between neighbors
5. Hammer head hits strings, centered
6. Back check lines up level with neighboring back checks
7. Hammer head level with neighbors at molding and hammer shoulder