

# TECHNICAL BULLETIN

## FRET REPAIR PROCEDURE METHACRYLATE GLUE WITH ACTIVATOR METHOD DATED: SEPTEMBER 14TH 2000

The procedure described herein is intended for qualified Parker Guitar service personnel. Attempting this procedure without proper training could cause serious permanent damage to the guitar which will not be covered under warranty. This bulletin supercedes earlier ones.

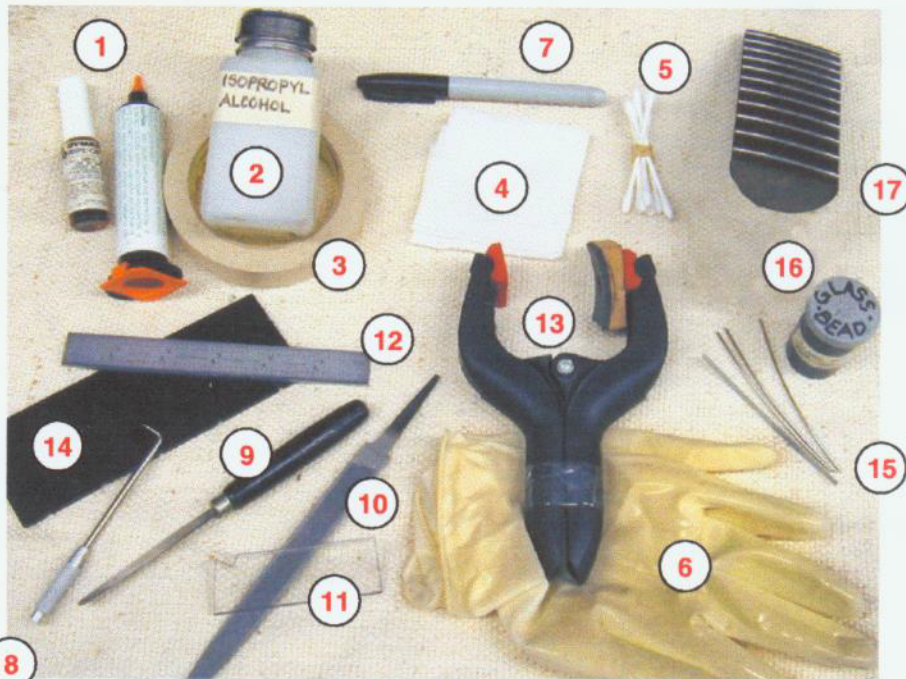
**CAUTION:** Please read instructions completely before beginning work. The glue begins to dry quickly. Fret alignment and clamping must be done efficiently. Parker Guitars cannot be held responsible for damage of any kind resulting from repairs performed outside our facility. We strongly suggest that before working on an actual guitar you practice the procedure on a test neck to develop your technique. Fingerboards may be scratched and are not easily repaired. Masking tape is used in this fret repair procedure. It can damage paint, so use caution.

### What you will need

The Methacrylate glue and activator are: Dymax <sup>625A</sup> 9-11-02 (625 DISCONTINUED) Gel glue and Dymax 500E activator. Find your local distributor through Dymax Corporation at 51 Greenwood Road, Torrington, Connecticut, 06790, USA Tel. 860-482-1010, Fax 860-496-0608. Germany Tel. 49-69-7156-2889, Fax 49-69-7156-3830. U.K. Tel. 44-1865-842842, Fax 44-1865-842172. Web site [www.dymax.com](http://www.dymax.com). Please follow the manufacturer's storage and handling recommendations closely.

### Supplies and Tools (to be obtained locally)

1. Glue and activator (see Dymax above)
2. Isopropyl (rubbing) Alcohol,
3. Masking tape, 3/4" wide such as 3M type 233
4. Paper towels
5. Q-tip type cotton swabs
6. Latex gloves
7. Marking pen
8. Small awl or dentist's pick
9. Thin (.010") flexible artist's spatula
10. File, extra fine 6" No. 3 cut, half-round normal from Grobet File Co. America, Carlstadt, NJ 800-847-4188 [www.grobetausa.com](http://www.grobetausa.com)
11. Plexiglass scraper 1/8" X 1" X 3" cut from Clear Cyro Acrylite GP (800) 631-5384
12. 6" straight edge, or a Parker fret scale
13. Fret clamp



If required: Fret Spacing Scales (14), Fret Wire (15), Glass Spacer Beads (16), and Test Necks (17), are available from Parker Guitars USA, Tel. [REDACTED] or via email at [REDACTED]

**Parker**  
GUITARS®





### Which Frets to Replace

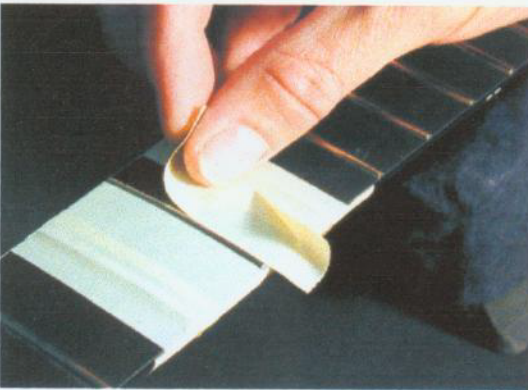
Inspect all the frets by pressing against the side of each fret with the clear Plexi scraper in the direction of the headstock with 2 pounds of force. If the fret is loose it will move slightly under this load. The most vulnerable end of the fret is on the treble side of the fingerboard.

If it is necessary to replace more than 3 or 4 frets, consider a factory replaced fingerboard. Replacing the entire fingerboard can not be done in the field. It requires specialized equipment and training.

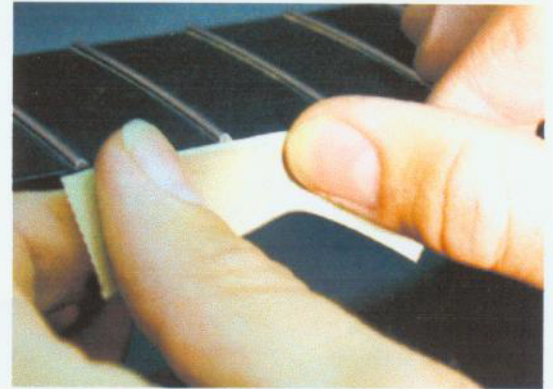
## HOW TO REPLACE A PARKER FRET

Masking tape is used to protect the guitar and mark the exact position of the fret before it is removed. Cover the edges of the guitar neck with tape for ease of cleanup.

Place a 2 or 3 inch long strip of masking tape along the length of the neck near the fret repair with one edge of the tape lying flush with the edge of the fingerboard. The edge of the tape should be aligned with the joint between the fingerboard and the fret, covering the neck and leaving the fingerboard exposed. Repeat this on the other edge of the neck.

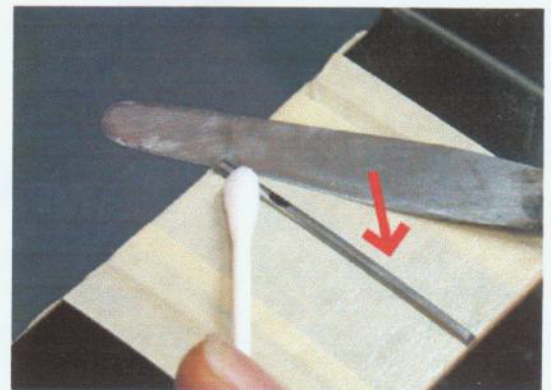


Cover the fingerboard with masking tape near the fret which needs work. Place a 3 to 4 inch long piece of tape on the fingerboard so that it is aligned with the long edge of the fret, just touching it. Repeat this on the other side of the fret so that both sections of fingerboard near the fret are covered with tape. This marks the position of the fret and protects the fingerboard from scratches and glue squeeze out. Burnish the tape down.



### Taking Off the Old Fret

Mark the treble side of the fret with magic marker if you will be reusing the fret. This will help you get it reinstalled in the original orientation. Remove the old fret with a thin spatula and Isopropyl Alcohol. Do not scratch the fingerboard with the spatula, it is not repairable. Keep the alcohol away from the other frets. Once the fret has been removed, leave the tape in place on the fingerboard. This will determine the location of the fret when it is time to re-glue. Burnish the tape down to keep the glue and activator from wicking under it during the re-gluing process.

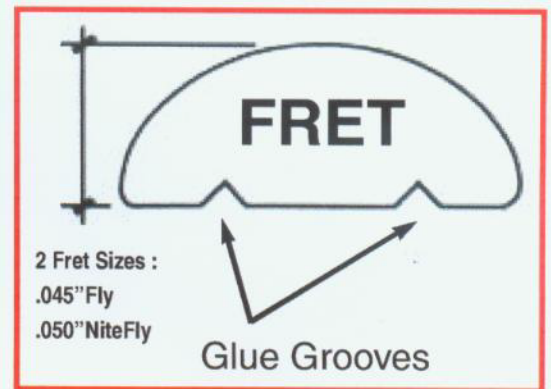




## Deciding to Repair or Replace the Fret

The old fret can be removed, cleaned and reused if it is in good condition. If the fret is not in good condition, a replacement fret can be cut, beveled, and polished, to precisely the same size and shape.

The bottom of a Parker fret has no tang. There are two tiny grooves running the length of the fret and it has texture from being sand blasted (see [Illustration A](#)). If the fret you are working with is shiny on the bottom, or does not have the two grooves it could be covered with old glue. Try cleaning it with isopropyl alcohol and the small awl or dentist's pick. If that doesn't expose the two grooves and the textured surface, replace the fret. If the fret is damaged, replace it.

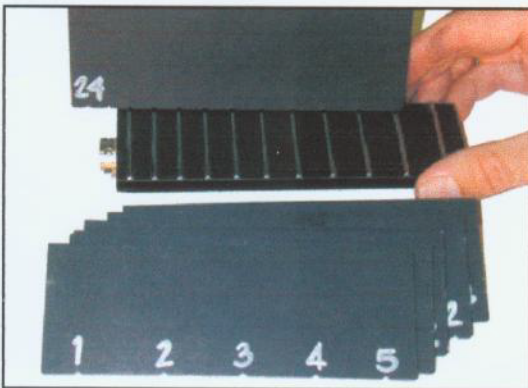


**Illustration A**

## Making a New Fret

Parker fret wire is made of work-hardened 302 stainless steel. This is a tough, abrasion-resistant material. It is workable with files, diamond hones, wet-or-dry sandpaper, and polishing compounds. The key to success in working this material is keeping files clean and diamond hones and sandpaper lubricated with water.

Cut the fret to length using a file, disk sander, hack saw, or nippers. Be forewarned, the material is tough and may dull the tool. The completed fret (cut beveled and polished) must be long enough to align with the ends of the other frets, yet not so long as to catch the fingers when playing the guitar. Bevel the fret to match the angle of the existing fret ends using a file or a disk sander. Sand the bevel to 1500 grit with a hard sanding block. Micro bevel the sharp corners and polish it to match the existing sheen. Curve it with your fingers to match the fingerboard curve.



## Determining Fret Location

If there is uncertainty about the proper location of a fret, the Parker fret spacing scales provide a quick and accurate reference. Each 2" X 6" X 1/8" anodized aluminum scale has notches along one edge spaced to match the frets. There are three different tool sizes based upon Parker's 25.5" scale length. One is notched to match frets 1 through 5, another is notched to match the frets from 6 through 12, and the third is notched to match the frets from 13 through 24. There are a total of six scales in a set. There are two of each size. one can be used for the base side of the fingerboard while the other is used for the treble side. The un-notched edge of a scale can also be used as a 6" straight edge.

Masking tape is used to frame a path which defines the location of a missing fret. Here is how to do it using the third fret as an example. Look at the notches in the edge of the fret scales. They make up matching pairs. Select the two fret scales with the widest spaced notches.

Place the scales on top of the frets so the notches drop over the frets. Place one of the scales in the string line about where the bass string would be, and the other one about where the treble string would be.

Slip a loose fret into the empty space where the third notch is. Hold this fret in place. Remove the scales. Put masking tape across the fingerboard on either side of the fret and touching the fret edges.

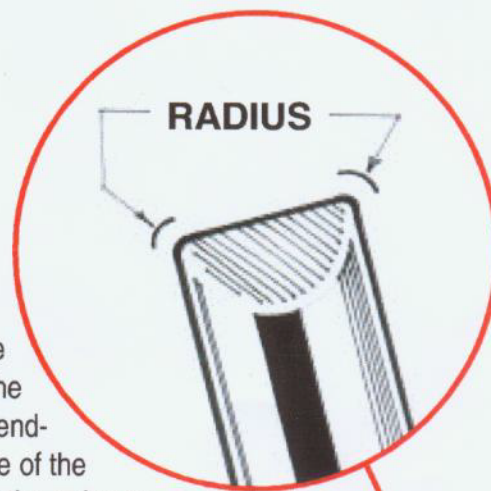
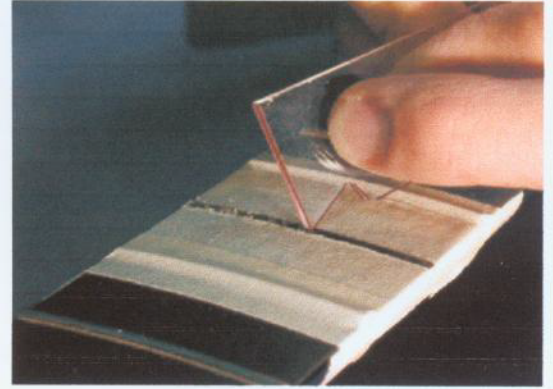
This defines the space for the fret. With the loose fret sitting between the pieces of tape, place the scales back on the frets to inspect the location. Adjust the tape as required until the fret scale notches rest on the loose fret and it is resting between the two pieces of tape without any fingerboard showing between the fret and the tape. The fret and scales can be removed for further work. The tape will stay on until the fret is glued in place.



## Preparing for Re-gluing

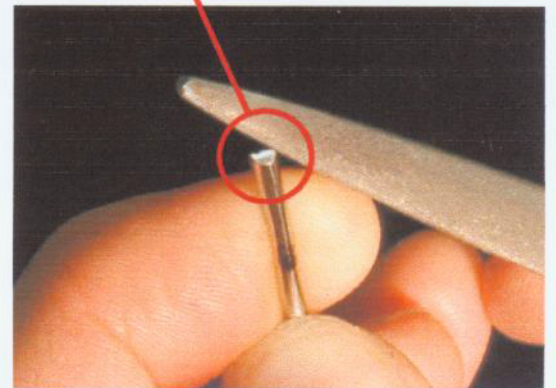
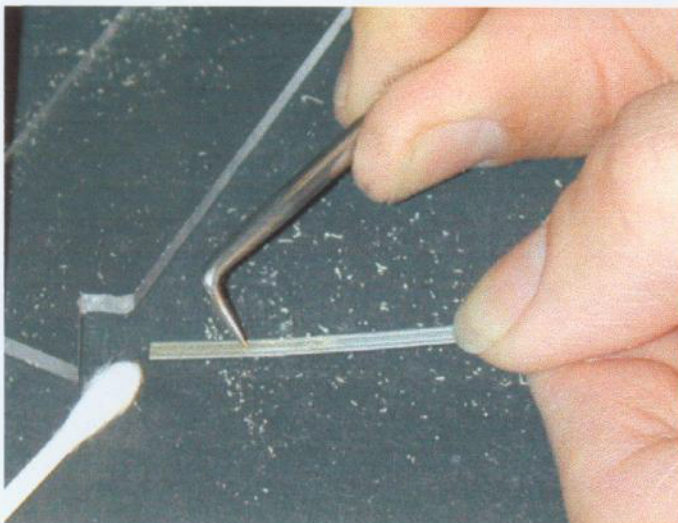
Clean the fingerboard with alcohol and the clear Plexi scraper where the fret is to be replaced. Be sure all of the old glue is out of the tiny valleys formed by the fiberglass weave.

The glue becomes gummy or rubbery when it is scrubbed with alcohol. The fingerboard is hard and will remain so. The glue is off white to brown in color where as the fingerboard is either white or gray black. You scrub until all the gummy tan glue is gone and the hard white fingerboard is what's left. The weave is a regular and predictable wavy shape. The glue is lumpy and irregular. The appearance of a clean fingerboard is whitish and uniformly wavy not brownish and lumpy. The glue must be entirely removed leaving the fingerboard very clean. Let the alcohol completely dry off before re-gluing.



File smooth the two sharp points on the treble end of the fret. This will insure that the strings can not get under the fret and pry it loose. While playing the guitar and string bending, the small treble strings can be over-pulled off the side of the neck. If there were any sharp corners on the fret end for the string to catch on the string could pry the fret from the fingerboard.

Clean the back side of the fret with Isopropyl Alcohol and a small awl or dentist's pick. Be certain to get all the old glue out of the grooves and the bumpy textured surface of the back of the fret. Be patient, get it very clean.

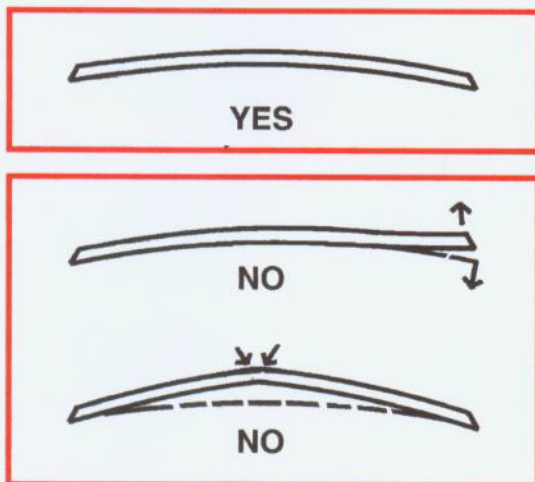




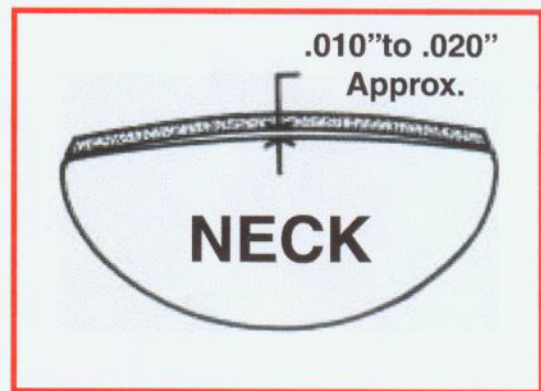
## Testing the Fit

Perform a trial dry assembly with the clamp to ensure that the fret can be quickly positioned very precisely. The glue has a very short working time (15 to 20 seconds). Double check the fit of the fret. It needs to be precisely the correct length when it is clamped into place. Also use a short straight edge to check that the height of the fret is the same as its neighbors. If it is too low, use glass beads mixed in with the glue as mentioned below in the sections entitled "A note on older guitars and fret height" and "Glass beads" If the fret is too high, it could be the incorrect size. Parker uses two different fret sizes. For the Fly guitar the fret height is .045", for the NiteFly the jumbo fret height is .050" (see [Illustration A](#)). As a last resort, it can be filed down to size and re-crowned and polished a day after the glue has cured.

Once you are satisfied that you can quickly and accurately clamp down the fret, remove it and smoothly "over-bend" the fret slightly to produce a .010" to .020" space between the fret and the fingerboard at the center of the fingerboard (see [Illustration C](#)). This will keep the fret ends in place. The fret must be beautifully curved. Do not allow any kink or straight sections in the fret (see [Illustration B](#)).



**Illustration B**



**Illustration C**

## A Note on Older Guitars and Fret Height

Tiny glass beads were used to insure glue-line thickness between the fret and fingerboard on Fly guitars built from '93 through mid '97. Nite Fly guitar necks do not require glass beads. On old Fly guitars, fret repairs require mixing glass beads into the fret glue (see "Glass beads" below). Information on serial numbers and guitar dating is available at [www.parkerguitars.com](http://www.parkerguitars.com).

## Testing the Glue

If the freshness of the glue or activator are in question, there is a quality control test. (See the glue manufacturer's cut sheet.)

## Applying the Glue

Maintain the work environment at room temperature (70 degrees F, 21 degrees C). Work in a clean dry area keeping all dirt oils and solvents away from the work. Do not touch the surfaces to be glued with your bare hands as this may contaminate the glue line. You may wish to use latex gloves to protect your hands from the glue, activator, and solvents. Closely follow the glue manufacturer's handling and storage recommendations.

Apply Methacrylate activator 500E to the fingerboard with a clean Q-tip according to manufacturer's instructions.

Apply Methacrylate Gel 625 glue to the fret according to the manufacturer's instructions. Cover the entire bottom of the fret wire with glue, filling the two long grooves. Use enough glue to produce a small amount of squeeze-out during assembly. (It is possible to reverse the order, putting glue on the fingerboard and activator on the fret, but getting glue into the grooves of the fret is more easily controlled when glue is applied to the fret.)



## Glass Beads

If you are using glass beads to raise the height of the fret, now is the time to add them. These tiny glass spacers are used to ensure that the glue line remains at least .003" thick. They can scratch guitars like sand paper so be careful where they go. Put the beads onto the glue as if you were sprinkling salt or sugar on food. There should be about 500 to 1000 glass beads on the fret. Don't cover the entire surface. That would be too many beads. The beads will automatically mix into the glue when the fret is installed.

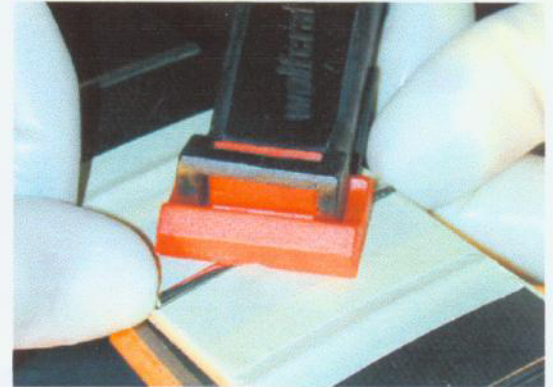


## Assembly and Clamping the Fret

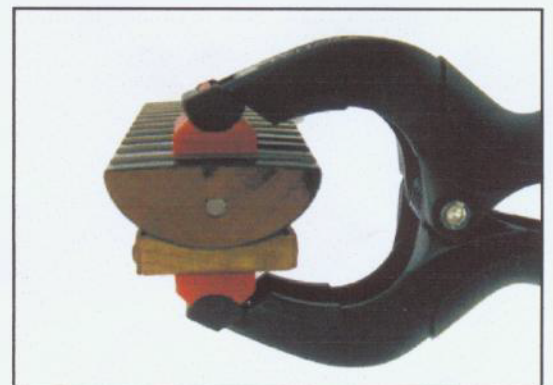
Put the fret on the fingerboard with the treble end (the end you filed the corners of earlier) toward the treble side of the fingerboard and clamp it into place between the two pieces of tape. Press in the center of the fret with the clamp. Use just enough clamping force to hold the fret down in the center. Over tightening will crush the neck or lift the fret ends. Check that the fret ends are flush with both edges of the neck and not overhanging. Ensure that the fret is glued tightly down flush with the fingerboard.



If repositioning is needed it must be done within 15 to 20 seconds of contact with the activator as the glue begins to set up immediately. Wipe off as much excess glue as you can with a clean dry paper towel while the glue is still wet. Leave the work clamped for 60 minutes at 65 degrees F (16 degrees C), or 30 minutes at 75 degrees F (24 degrees C).



**The clamp's radius goes on the neck, NOT on the fret.**



**Using a block eraser to spread the clamping forces over a larger area is a helpful option.**





## **Cleanup**

After 24 hours, clean excess glue with a small amount of alcohol and a clean paper towel or Q-tip. Do not soak the fret area with alcohol as it may weaken the glue joint.

Tape can do damage when being removed, or by leaving it on for too long. When finished with the repair and removing tape from the edges of the neck, use caution to prevent damage to finished surfaces.

Dried glue squeeze-out is tough to cleanup without scratching the fingerboard which is not repairable. A good fingerboard cleaning tool is the clear Plexi scraper included in the tool kit, which is a piece of 1/8" thick clear acrylic sheet from Cyro Acrylite GP (800) 631-5384 cut to 1" X 3". This can be sanded square with clean sharp corners and used as a tool to push off excess glue.

## **Dry Time**

Let the glue cure untouched overnight at room temperature, 70 degrees F, (21 degrees C). Testing can be performed after complete cure ( 24 to 48 hours depending on cure temperature). You may unclamp after 60 minutes at 65 degrees F (16 degrees C), or 30 minutes at 75 degrees F (24 degrees C).

## **Testing**

Check that the fret ends are flush with both edges of the neck and not overhanging. If there is any question about intonation and fret location, the Parker fret spacing scales provide a quick check. After complete cure (24 to 48 hours), Ensure that the fret is glued tightly down flush with the fingerboard. Inspect the fret by pressing against the side of it in the direction of the headstock with 2 pounds of force. It will not move if glued correctly. Check that the fret is the same height as it's neighbors using the short straight edge.

## **Fret Leveling**

Leveling should not be needed if the preceding steps are carefully followed, However, if you find that a fret needs leveling, keep in mind that it is made of work-hardened 302 stainless steel. This is a tough, abrasion-resistant material. Diamond hones can be effective if kept clean, but are easily loaded with stainless steel dust. Water will help to keep the diamond hone clean. We suggest that you protect the fingerboard with tape before fret leveling as scratches are nearly impossible to repair.

## **If your customers are having repeated fret problems**

Advise them not to use Guitar products such as Finger-ease or Fast-Fret. Also inform them not to use solvents or chemicals to clean their guitars. Cleaning should be done with a clean soft cotton cloth. If necessary, a little warm water may be used.

The logo for Parker Guitars features the word "Parker" in a red, cursive script font. Below it, the word "GUITARS" is written in a red, sans-serif font inside a red rectangular border. A registered trademark symbol (®) is located to the right of the word "GUITARS".



# **FRET REPAIR CHECKLIST**

---

Please read instructions completely before beginning work.

1. Practice the procedure before doing the "real thing"
2. Follow the glue manufacturer's recommendations closely.
3. Protect the guitar
4. Mark the position of the fret
5. Replace the fret if its bottom is shiny
6. DO NOT scratch the fingerboard when removing the old fret
7. Keep alcohol away from the other frets
8. Check the fret length
9. Clean the fingerboard
10. Clean the back side of the fret
11. Over-bend the fret .010" to .020"
12. Apply activator 500E to the fingerboard
13. Apply 625 glue to the entire bottom of the fret
14. Some fret repairs require .003" diameter glass beads
15. Put the glue covered fret on the fingerboard
16. The glue has a working time of only 15 to 20 seconds
17. Check fret ends, height, and location
18. Wipe off excess glue while wet
19. Cure the glue untouched at room temperature overnight
20. Cleanup
21. Use caution removing tape
22. Check the work after full cure of 24 to 48 hours

*Parker*  
GUITARS®



# TESTING THE GLUE

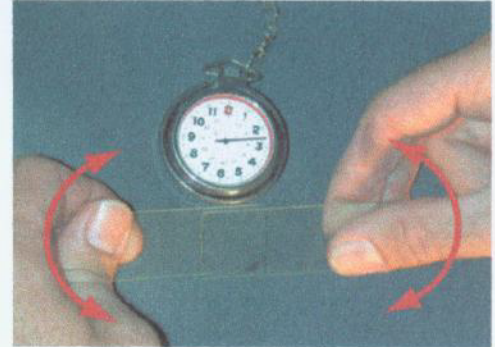
---

The glue and activator can be tested. Glass slides are glued together and gently wiggled. The time it takes to set up determines glue quality.

## **Suggested curing rate test to determine glue activator quality:**

### **Step 1.**

Using glass microscope slides, apply a thin film of Dymax 500E activator on one end of a slide covering about 1" X 1".



### **Step 2.**

Apply a small bead of Dymax 625 Gel adhesive (DO NOT SPREAD) to the narrow end of another glass slide. The bead should be about 1/16" X 1" long.

### **Step3.**

Join the adhesive and activator ends of the slides. Overlap the ends by 3/4" to 1" and squeeze the adhesive to a thin bond line. Hold immobilized for 5 seconds.

### **Step 4.**

Starting at the time of 5 seconds attempt to gently move the end of one slide relative to the other. Repeat every 5 seconds. Fixture time is when the slides resist movement with light finger pressure.

---

**NOTE:** Fixture time should occur within 15 to 35 seconds. If not, replace activator and retest. " Quoted from a 1997 Dymax publication ( Seek up to date Dymax glue product data sheet at [www.dymax.com](http://www.dymax.com) ).



**Supplement : Feb 28 2001** to the  
Parker Technical Bulletin Dated Sept 14 '00  
On Fret Repair Procedure

Here are Parker fret repair glue handling tips, and information on our new fret repair kit. We get good results with this method and these tips will help you to get good results too.

The Dymax two part Methacrylate glue used on Parker fret repairs has a limited shelf life which is affected by heat, moisture, and light. We refrigerate the 625 adhesive when not in use, and keep it away from sunlight. Also we keep the lid tightly sealed on the 500 activator as much as possible. Humidity and moisture shorten it's shelf life. When the activator turns dark brown it needs to be tested with the procedure in the fret repair technical bulletin.

We do not touch the fret until the glue has cured overnight. If it is cold weather we wait longer or keep the parts at room temperature. Careful cleaning of the glue surfaces is very important.

We now provide a Parker Fret Repair Kit (Part Number 007, Priced **\$ 292.79** US plus shipping.) containing the following items:

Glue, Activator, Awl or dental pick, Artist's spatula, File 6", Plexi scraper, Fret Scales, Fret Clamp, Fret Wire Fly and NiteFly, Glass Spacer Beads, Test Neck section.

The Following Fret Repair Kit replacement parts are available separately:

Part No.	Description	Price (add shipping)
015	Glue and Activator	\$57.75 US
150	Fret Wire Fly (50) pcs	\$11.25 US
152	Fret Wire NiteFly (50) pcs	\$11.25 US
160	Glass Spacer Beads	\$13.69 US