



PROFESSIONAL GOLF CLUBS AT DOWN TO EARTH PRICES

The Basics of Epoxy and Shaft Installation

with Jeff Summitt
Technical Director, Hireko Golf

Thursday August 12, 2010
2-3PM Eastern Standard Time

Audio settings are set on listen only.
Please post questions in the upper right hand corner Chat box.
Question & Answer period will be at end of webinar.

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800 367-8912



EPOXY: Creating a Long Lasting Bond

Glue – One-part instant adhesive not recommended for any golf club assembly

Epoxy – Two-part adhesive comprised of a resin and hardener mixed using a certain ratio

Must provide sufficient strength but also must be able to be removed when necessary

Stick to epoxies sold by component suppliers

Choosing Between Epoxies

Slow Set – Normally 24 hour epoxy that provide ample time for assembly and the highest strength

Fast Set – 30, 60, 90 minute or two hour epoxy, also known as quick setting or Tour setting epoxy. Designed for convenience but there can be a drop off in strength verses slow setting epoxy.

Clubmaking is not like fast food; slow is the best choice except in special situations



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Terms for Epoxy

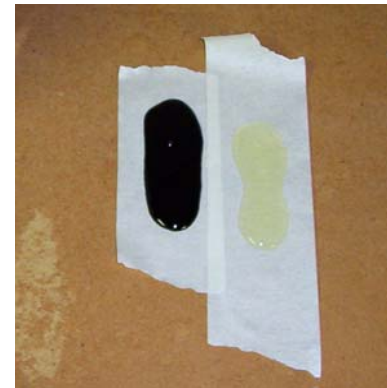
Working Time – The time epoxy remains pliable before you are unable to apply it evenly on the surfaces.

Setting Time – The time the epoxy becomes rigid but not fully cured

Curing Time – The time required for the epoxy to achieve its maximum strength and rigidity

Mixing Epoxy

Weight: Exact method but more time consuming



Volume:
Eye-ball method
Quick and easy



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Bottles, Individual Packets, Cartridges With Optional Epoxy Gun



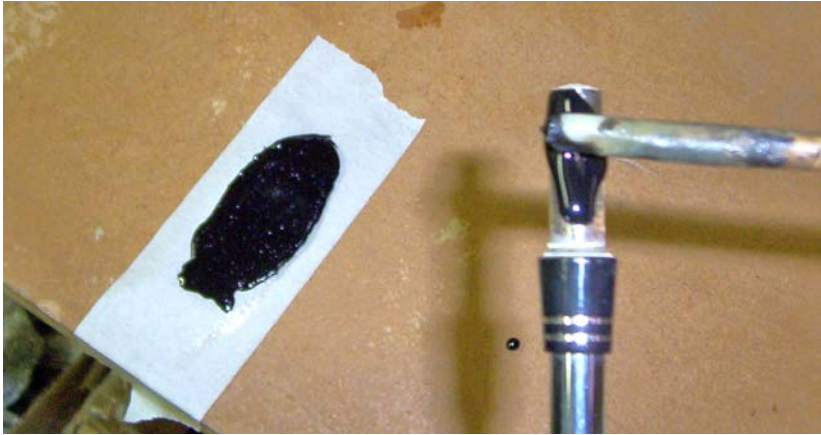
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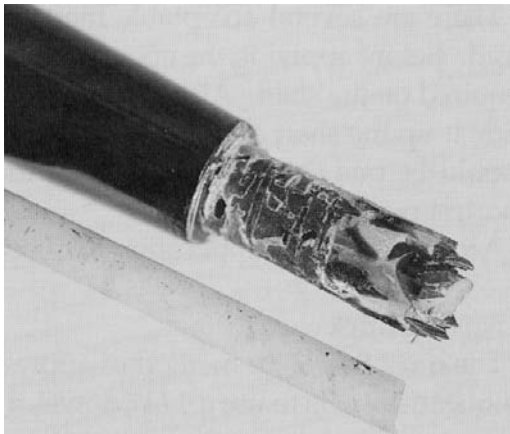
Mixing Stick / Shaft Method



Left: Mixing Stick



Right: Shaft Method



Mix thoroughly – at least 15 seconds or more

Avoid using excessive epoxy otherwise it WILL eventually lead to premature breakage

Shafting Beads



Use only when the shaft is slightly loose in the hosel

Scrape some epoxy aside and mix in shafting beads 4-6% by volume, do not add to the entire batch or increase the proportion



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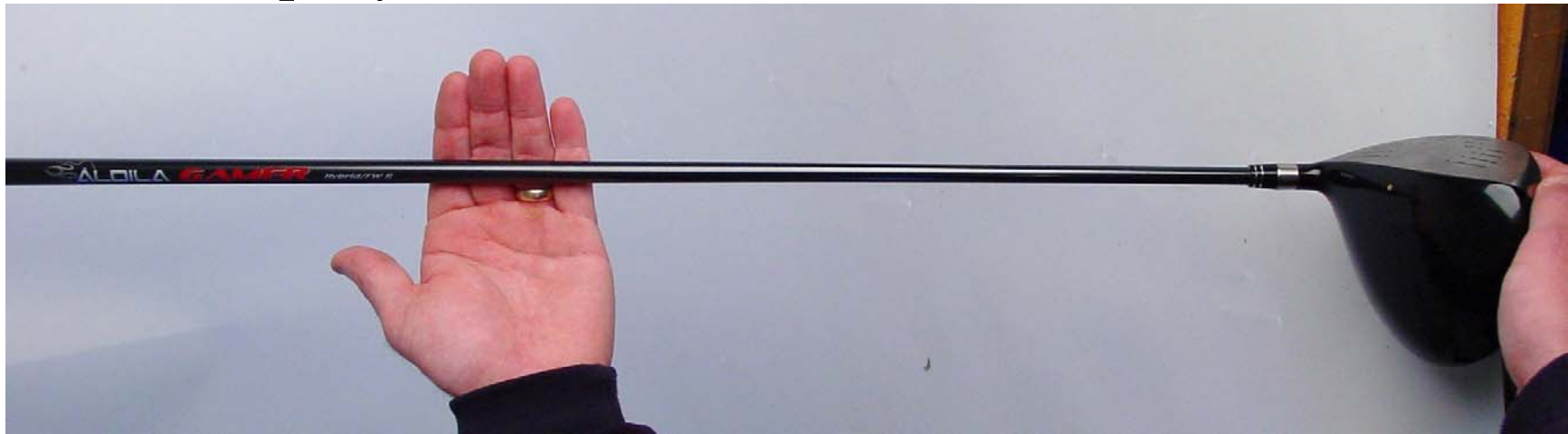
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Clean up and align the shafts

Thoroughly wipe off excess epoxy – neatness is a virtue!

Align the silkscreen and find a place to set aside clubs so they are undisturbed while the epoxy sets



Epoxy Dos

- Use only an appropriate epoxy, not glue, for the job
- Shafts should be properly abraded
- Clean all parts from oil or epoxy residue in the case of re-shafting or repair
- Make sure to completely mix epoxy as it is not possible to over mix.
- Use epoxy sparingly, don't think that "if a little is good, a lot is better"
- Shaft beads may help be needed to act as a filler when shaft is slightly loose inside the hosel, but don't use epoxy to take up large differences such as trying to install a .335" shaft into a .350" hosel or a .355" taper tip shaft into a .370" parallel bore as the epoxy will not hold.
- Carefully mix epoxy in the proper proportion
- Clean up left-over epoxy from the club as well as your workbench

Don'ts

- Don't rush your work even if you have done it a thousand times before
- Let epoxy cure in cold temperatures unless you factor that into when they can be safely hit
- Move assembled parts before they begin to set up



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