



NorthStar Archery is the traditional archer's premier supplier of hand-crafted arrows, crossbow bolts and accessories. We also offer the most complete array of safety missiles, kits, bows and more for medieval combat archery reenacting.

## UHMW KIT ASSEMBLY INSTRUCTIONS.

Please read instructions thoroughly before getting started. To get the best results, please understand this is **NOT A ONE-DAY PROCEDURE**. Take your time and do it right. Make sure you allow seven days of drying time after you glue on your APDs and blunts.

**A NOTE ABOUT DURABILITY:** We are often asked how long assembled missiles should last or why a particular arrow or bolt was damaged or failed inspection after its first battle. The only way to answer these questions is to set proper expectations. First and foremost, SCA combat is a full-contact and aggressive hobby in which thousands of people with different equipment, training and sensibilities take the field in a wide range of environmental conditions and smack each other around. A fully armored fighter averages about 250 lbs and we've personally witnessed mutants pushing a quarter of a ton. Add the speed, adrenaline and "fog of war" common in a typical battle and you've created a destructive environment for gear. The Society Marshalate has gone to unbelievable lengths to ensure your safety. Decades of testing and scrutiny have defined the materials, assembly methods and testing procedures for each piece of equipment taking the field. The products in this kit and the assembly instructions herein represent the best possible balance between safety, performance, durability and practicality of manufacture. Your missiles are NOT made of closed-cell Unobtainium. They will wear out and they will get damaged. Some may be irreparably damaged during their first use when the aforementioned quarter ton charging Duke of Destruction stomps on your lovingly crafted combat missile. Such is the price of war... By assembling this kit, you acknowledge these risks and agree that NorthStar Archery, the Society, the Marshals and your fellow fighters cannot be held responsible for damage incurred. Broken shafts (virtually unheard of), crushed or split APDs (common), peeling tape (inevitable) and damaged blunts (rare) are all possible. Damage may also be incurred during inspections. Although there will always be reports of heavy-handed Marshals tearing heads off, remember that they are just doing their part to keep you safe. If you are uncomfortable with the potential monetary loss of a few missiles during battle, STOP NOW, repackage the kit and shoot it back to us. We will happily refund the original purchase price minus shipping. If, however, you can't wait to experience the thrill of taking down Sir Uglystick from a comfortable range where he can fully take in your child-like grin and happy dance, then proceed fellow leveler of the battlefield!

### How to build your combat arrows/bolts with UHMW heads:

You will need a marker, ruler, scissors and hammer. Everything else is in your kit. To get the best results, please understand this is not a one-day procedure. Take your time and do it right. Make sure you allow seven days of drying time after you glue on your APDs and blunts. Your shafts have already been sanded and cleaned with acetone, but if you see any dust or dirt, just give them a quick wipe with a clean cloth. The bottom edge of your T-shirt will work just fine.

#### Part One: Attaching the UHMW head.

UHMW is short for Ultra-High Molecular Weight. It is a very dense plastic and has a 1/4" diameter hole into which you need to insert your 1/4" diameter shaft. You will need to POUND the shafts into the holes of the UHMW heads. The holes are exactly the right size and the shafts must be hammered in. Pound the UHMW heads on BEFORE installing the APDs. Look at your shafts. One end is slightly beveled, the other end is cut square. The beveled end is for the blunt, the other end is for the APD. Place a mark 1/2" from the beveled end of the shaft. Place that end over the hole of the UHMW blunt. The blunt should be placed on a hard surface suitable for hammering. A carpeted floor doesn't work well (trust me). Tap lightly then pound with a hammer on the other end of the shaft until your mark reaches the top of the blunt's hole.

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If the end of the shaft has spread due to hammering, lightly sand the edge to bring it back to the right size so the APD will fit. Do not reduce the shaft diameter with sanding.

## Part Two: Attaching the Asgard APD

### 2) WARMING THE ASGARD APD:

If the APD end of the shaft has spread because of the hammering in the previous step, lightly sand the edge to bring it back to the right size so the APD will fit. Do not reduce the shaft diameter with sanding unless it's absolutely necessary as described at the end of step 3. APDs for arrows have a split nock, while those for bolts have a solid nock. The shaft holes of the APDs have already been roughened by NorthStar for better adhesion. The hole in the APD is  $\frac{1}{4}$ ". The shaft you are placing into that hole is  $\frac{1}{4}$ ". The plastic APD will need to expand just a little as the shaft is inserted. This is made easier if the APD is warm. Holding them in your hands for a couple of minutes, placing them in the sun, placing them in a tied off pillow case and running them through the clothes dryer on low heat or using a hair drier on low heat are all suitable methods for making the APDs slightly more pliable for this step. Don't put them in hot water as water trapped inside the APD will undermine glue adhesion. Don't put them in the oven, blast them with a heat gun or use a lighter or other open flame. Such methods will bubble, melt, ignite and otherwise irreparably damage the APD. They just need to be about 85F. If you are assembling your missiles at a backyard BBQ in July in Arizona, you can probably skip warming them up. If you are assembling them from inside your ice fishing tent on Lake Winnebago in January, then warming the APDs will be crucial to prevent the plastic from splitting during shaft insertion. An air conditioned home is generally enough justification for warming the APDs first.

**3) ATTACHING THE ASGARD APD:** Use the GOOP glue as a lubricant to get the APD to slide on. Put a generous amount of glue over the shaft hole of the APD (FIG 5 & 6). Push the shaft slowly (REPEAT - SLOWLY) into the APD until it touches the bottom of the hole. Push hard! Twist the shaft to distribute the glue evenly. Be careful not to damage the nock when you push the APD onto the shaft. I do this by placing the large round hole of the APD on the table with nock off the edge of the table (FIG 7). The fiberglass shaft will be vertical while you push the APD onto it. The Asgard APD fits the 1/4-inch diameter shafts very snugly. So snugly, that the shaft will push almost all the glue down to the bottom of the shaft hole. There is a small weep hole at the bottom of the shaft to allow excess glue to come out. You must push the shaft in hard enough to get the glue to distribute between the shaft and the APD. Glue will suddenly spurt out of the weep hole, so cover up that nice dining room table and floor you're working on (FIG 8). Getting GOOP adhesive out of carpeting is icky. Learn from my experience. Trust me yet again. After gluing, let it set for seven days without moving it. Yes, I really mean seven whole days. Learn from my experience. I have had APDs ready after 2 days, but not always! After seven days test the APD to make sure it is secure. Test it by grasping it and trying to pull it off. If you can pull it off or twist it around the shaft, re-glug it. If it's really, really, really hard to push the shaft into the APD, try warming them immediately before inserting (See step 2). As a last resort, you can sand down the shaft diameter VERY SLIGHTLY. The fiberglass is easy to sand with coarse sand paper or a concrete block or a rock. You are going to hate doing this because the fiberglass dust is nasty and itchy. Don't breath the dust; don't touch your face or eyes with hands that have the dust on them. After you are done sanding, wipe the shaft with alcohol to get rid of the dust and oils.

## Part Three: Tape and label the shaft.

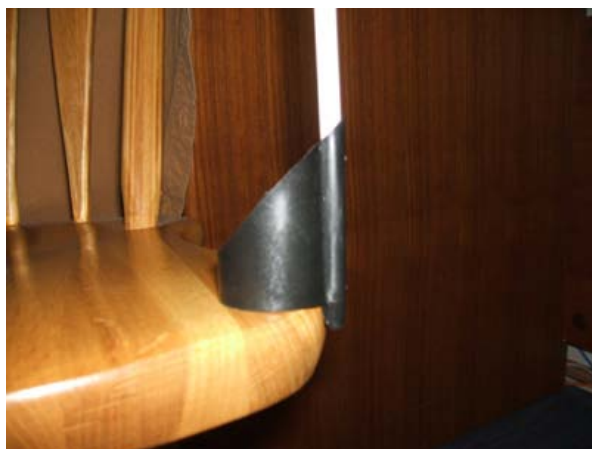
Tape the shaft between the blunt and the APD. This takes time and care.

Cut a piece of tape the needed length. Lay one long edge of the tape carefully lengthwise down the shaft. Get that one edge of the tape, the long edge, stuck onto the shaft straight before proceeding.

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Roll the shaft a little and then push down the tape lengthwise. Do this in increments. Each time you push down on the tape, you will stick a little bit more of the tape to the shaft.

Roll the shaft, push down on the tape lengthwise, roll the shaft, push on the tape, roll, tape ...

The colored tapes stretch a bit after you pull it off the roll. Allow the length to shrink back to size for a couple of minutes before you stick it onto the shaft.

Midrealm allows only 1" wide strapping/fiber tape on the shafts.

West Kingdon requires electrical tape on the shafts.

You must label your shafts with your name and kingdom for SCA combat.

Midrealm and Pennsic War require preprinted, not handwritten, labels.

#### Part Four: Pad the UHMW blunt head.

Tape the first foam disk on with 2 pieces of strapping tape about 8 inches long. Place the tape over the top of the foam and blunt and down the sides of the shafts. If its needed, tape the second piece of foam on top the same way, but use four pieces of tape to completely cover it. Wrap the foam rectangle around the side of the blunt and tape into place snugly. Use 4 pieces of tape over the top and down the side of the blunt to cover everything again. Using electrical tape, cover the whole blunt once again. It will take at least 6 pieces of tape about 8 inches long. Wrap more electrical tape around the shaft at the base of the blunt to secure all the ends of the tape you just applied. Measure the head (the one you just built) to make sure it's at least 1 1/2" in diameter.

#### Part Five: Take care of Your Arrows

You just put an awful lot of work into your arrows/bolts. Please take good loving care of them. After shooting, you MUST inspect them. Even if someone else has inspected them after a battle, you need to re-inspect your own arrows again. Do not shoot them again if you find any kind of damage, or if the Blunt is not seated or taped correctly. Arrows, like other weapons, need attention and up-keep. You will need to fix and re-tape them occasionally. Inspect them between battles and when you get them home. Don't wait until it's time to take them back out onto the battlefield to inspect them. Don't store you arrows in a shed or car where the temperature and humidity is uncontrolled. Extreme temperatures will make the tape come loose. I find this makes the arrow inspectors gumpy.

#### Part Six: Be responsible and help me out.

SCA Society and SCA kingdom rules are always improving. Hopefully these instructions do not conflict with any rules, but you better check for yourself. If you find any problems with these instructions, I would love to hear from you.

#### Disclaimer:

NorthStar Archery, LLC and its employees are not responsible for any injury resulting from abuse or misuse of its products. Use of the arrows or bolts resulting from these kits assume participation in a contact sport with it own unique risks and hazards. The buyer and user assume all risk associated with this participation and hold NorthStar Archery and its staff harmless in the event of injury or death.

Thank you for purchasing your combat archery equipment from NorthStar Archery.

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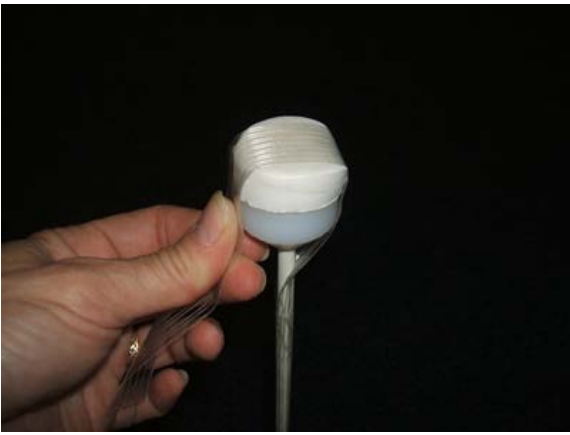
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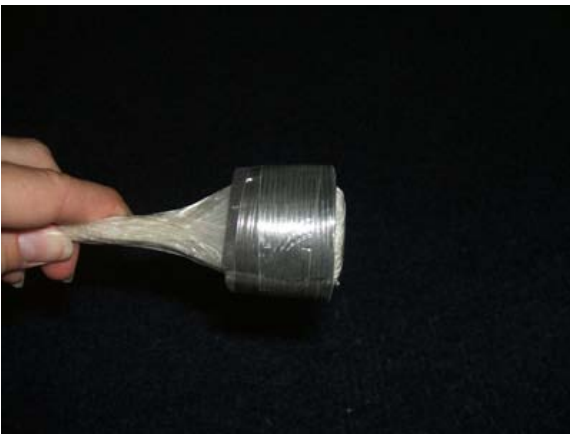
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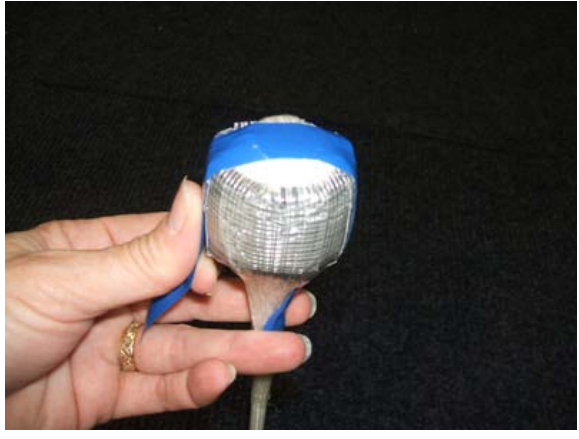
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COMPLETE!