

**ASSEMBLY INSTRUCTIONS:**

1. CUT OUT THESE TEMPLATES, AND TAPE TO THE PVC PIPE. THE TEMPLATE SHOULD WRAP CLEANLY AROUND THE PIPE, AND THE LINES SHOULD MATCH AT THE INTERSECTION. COVER ALL DRILL LOCATIONS WITH CLEAR TAPE TO PREVENT DAMAGING THE PAPER.
2. USING THE SMALL DRILL BIT, DRILL A SINGLE HOLE TO THE CENTER OF THE PIPE AT EACH GRAY DOUGHNUT.
3. DRILL THE LARGE HOLES WITH THE 7/8" HOLE SAW.
4. INSERT THE SMALL PIPE INTO THE HOLES IN THE LARGE PIPE SO THE ARROWS POINT TOWARD EACH OTHER.
5. FILL THE PIPES WITH NEWSPAPER, THIS WILL PREVENT THE NAILS FROM FALLING OUT. INSERT THE NAILS AT THE GRAY DOUGHNUTS WITH SOME OF THE NAIL STICKING OUT.

**KNOT TYING INSTRUCTIONS:**

PULL OFF 26 FT OF STRING AND TIE A KNOT AROUND THE NAIL AT "START". LAY THE STRING ON THE TOOL FOLLOWING FIRST THE RED LINE, AND PAYING ATTENTION TO THE OVER-UNDER PATTERN. AFTER TYING ONE COMPLETE PASS THROUGH THE ENTIRE KNOT, PULL OUT THE NAILS, SLIDE THE PIPES APART, AND SLIDE THE KNOT OFF. CONTINUE THE WORKING END THROUGH THE KNOT UNTIL YOU HAVE ADDED A SECOND (OR MORE) PLY.

TO TIGHTEN THE KNOT, LEAVE A COUPLE OF INCHES OF THE WORKING END HANGING OUT OF THE KNOT. PULL THE SLACK IN THE PLYS FROM THE WORKING END BACK TOWARD THE BALL OF STRING. IT DOESN'T TIGHTEN UP LIKE YOU WOULD TIE YOUR SHOES, BUT GRADUALLY AS YOU WOULD WORK A LUMP OF CLAY. EACH TIME YOU PULL A LOOP, PULL A LITTLE MORE STRING OUT UNTILL YOU HAVE THE CROSS AT THE SIZE YOU FEEL IS APPROPRIATE FOR THE MATERIAL YOU ARE USING.

WHEN YOU HAVE PULLED OUT THE LAST LOOP, CUT THE CROSS FROM THE BALL OF STRING. PULL A FEW TUCKS OF THE CUT END BACK SO THE CUT END COMES OUT IN THE STEM OF THE CROSS. WHERE IT LEAVES THE KNOT, TUCK IT INTO THE CENTER OF THE KNOT, AND OUT THE BOTTOM OF THE KNOT. CONTINUE THE WORKING END INTO THE KNOT UNTIL IT COMES OUT WHERE THE CUT END STARTS. TUCK THE WORKING END INTO THE CENTER OF THE KNOT AND OUT THE TOP OF THE KNOT. GIVE EACH END A TUG, AND CUT IT OFF FLUSH WITH THE KNOT. THE ENDS SHOULD RECEDE INTO THE KNOT, AND STAY HIDDEN.

- PARTS REQUIRED TO MAKE THE CROSS TOOL:**
- 8" LENGTH OF 1" SCHED 40 PVC PIPE
  - 5" LENGTH OF 1/2" SCHED 40 PVC PIPE
  - 16 SMALL NAILS
  - DRILL WITH DRILL BIT FOR THE NAILS
  - 7/8" HOLE SAW
  - SOME NEWSPAPER

