These instructions explain the process to assemble the Chop Source Frame Jig Kit and Rotisserie Stand. If you have any questions regarding any part of the assembly process after reading these instructions, please email sales@chopsource.com or call (651) 300-9575.

The drawing on page 2 shows the complete jig with rotisserie stand. The drawing on page 3 shows the table-top version of the jig. The top of page 4 has pictures of a frame in the jig. See page 10 for the lengths of structural tubing required for the jig.

There are 5 main steps to assemble the jig. Some parts of these instructions may not apply, depending on which fixtures you’ve purchased. If you purchased the full frame jig kit, complete steps 1-3.

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Full Frame Jig Kit (shown with adjustable width fixture, standard feet, and 3/4" threaded rods and spacer material)

Frame Jig with Rotisserie Stand (feet move from jig to stand)
General Guidelines

Hand-tighten all fasteners during assembly (just until the lock washers start to compress) and torque fasteners to 15 ft-lbs only when instructed.

Stamped washers typically have a sharp edge on one side and a smooth rounded edge on the other side. The sharp edge can scratch the powder coating on the plates. Install all washers with the smoother side touching the paint. The washer won't look as good, but scratched powder coating looks worse. This is most important for the bolts in slots like on the neck fixture and adjustable width fixture.

Step 1: Assemble Fixtures

Assemble each fixture as shown in the following photos to make sure you have everything. If anything is missing, email sales@chopsourse.com or call (651) 300-9575 and the missing parts will be sent to you right away. Please wait until all fixtures are assembled before contacting us especially for international orders shipped in multiple boxes.

Base Clamps

Each base clamp uses two square plates and four 7/16" x 8" bolts (each with two washers, a lock washer, and a nut). For 2"x3" tubing, use the outer most holes. The full frame jig kit comes with two base clamps and the rotisserie stand comes with three base clamps.
**Neck Fixture**

The neck fixture consists of two plates, a weldment called the rod block, an aluminum threaded spacer, and a threaded rod that holds the neck cones.

Spin the aluminum threaded spacer about 5" onto the 3/4" x 16.25" threaded rod and insert it through the top of the rod block weldment. Put a 3/4" nut onto the bottom of the rod and slide the neck rod up in the block so the nut recesses into the block. The nut is held from turning by two sides of the block. Hand tighten the threaded spacer down to the block. Look through the lower 5/8" pivot hole to make sure the neck rod will not block the lower pivot bolt.

Use two 5/8" x 4" bolts (each with two washers, a lock washer, and a nut) to mount the rod block between the neck fixture plates. Use three 7/16" x 3-1/2" bolts (each with two washers, a lock washer, and a nut) thought the side plates. Keep things very loose so you can slide the fixture onto the upright later.
**Axle Plate Fixture**

Assemble the axle plate fixture using three 7/16" x 3-1/2" bolts (each with two washers, a lock washer, and a nut). The fixture can face forward or backward. *Face the holes toward the neck fixture to make welding near the axle plates easier. Face the holes away from neck fixture if you need more length for a stretched out frame.*

![Axle Plate Fixture Image]

**Adjustable Width Fixture**

Assemble the adjustable width fixture brackets using four 7/16" x 3-1/2" bolts (each with two washers, a lock washer, and a nut). Insert one 1/2" x 1-3/4" bolt (with a lock washer and washer) through the hole in the 1-1/2"x5" rectangle plate. Temporarily install a 1/2" nut on back. This nut will be welded to the spacer tubing later.

![Adjustable Width Fixture Image]
**Center Fixture**

Assemble the center fixture using four 7/16" x 8" bolts (each with two washers, a lock washer, and a nut). For 2"x3" tubing, use the upper and lower holes.

![Center Fixture Image]

**Feet**

Insert one 1/2" x 1-3/4" bolt (with a lock washer and washer) through the hole in each 1-1/2"x5" rectangle plate. Temporarily install a 1/2" nut on each bolt. These nuts will be welded to the spacer tubing later. If you bought the standard feet kit, ensure you have four 1/2" x 2-1/2" carriage bolts with 2 nuts for each. If you bought the heavy duty swivel leveling feet, each foot should have a 1/2" jam nut and a 1/2" nut on it. One 1/2" nut from each foot will be welded to the tubing for the feet.

![Feet Images]
**Threaded Rods and Spacer Material**

Each threaded rod and spacer kit includes two 14" threaded rods, four nuts, one 2" spacer, and additional spacer material. The additional spacer material will be cut later to make four spacers.

**Rotisserie Brackets**

Insert four 7/16" x 1" bolts with a washer (no lock washer) through the 7/16" holes in one round rotisserie plate. Thread a 7/16" coupling nut onto each bolt and torque bolts to 20ft-lbs while holding the coupling nut with a wrench. Attach two square plates to the round rotisserie plate using four 7/16" x 4-1/2" bolts (each with a lock washer and washer). These bolts will thread into the coupling nuts. If you are using 2"x2" uprights, use the 3-1/2" bolts provided instead (not shown in the image below). Repeat for the second rotisserie bracket. Keep these bolts loose for now.
Step 2: Cut Structural Tubing to Length

Several lengths of 2"x3" and 2"x2" tubing (1/8" or 11ga wall) are required to complete the jig. This should be available locally at a metal supply store or welding/fabrication shop. Many times the store/shop will cut them to size for a small fee. The lengths provided below are a guideline that should work for many different styles of frames and can be adjusted to suit your needs. See the FAQ at the end of the instructions for more details on main-rail lengths.

<table>
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<tr>
<th>Tubing Required for Part:</th>
<th>Size (all 1/8&quot; or 11ga wall)</th>
<th>Qty.</th>
<th>Length</th>
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<tbody>
<tr>
<td><strong>Full Frame Jig Kit</strong></td>
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<tr>
<td>Basic Kit</td>
<td></td>
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<tr>
<td>Main rails for jig*</td>
<td>2&quot;x3&quot;</td>
<td>2</td>
<td>72&quot;</td>
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<tr>
<td>Upright for neck fixture</td>
<td>2&quot;x3&quot;</td>
<td>1</td>
<td>36&quot;</td>
</tr>
<tr>
<td>Upright for axle plate fixture</td>
<td>2&quot;x3&quot;</td>
<td>1</td>
<td>24&quot;</td>
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<tr>
<td><strong>Center Fixture</strong></td>
<td></td>
<td></td>
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<tr>
<td>Spacer for center fixture</td>
<td>2&quot;x3&quot;</td>
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<tr>
<td><strong>Adjustable Width Fixture</strong></td>
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<td>18&quot;</td>
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<tr>
<td><strong>Legs</strong></td>
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<td>24&quot;</td>
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<td>4&quot;</td>
</tr>
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<td><strong>Rotisserie Stand</strong></td>
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<tr>
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<td>2&quot;x3&quot;</td>
<td>2</td>
<td>40&quot;</td>
</tr>
<tr>
<td>Upright for rear rotisserie bracket</td>
<td>2&quot;x3&quot;</td>
<td>1</td>
<td>18&quot;</td>
</tr>
</tbody>
</table>

*If you decided to extend the main rails for the jig, you'll need to extend the rails for the stand by an equal amount.

**The Full Frame Jig Kit includes one of these fixtures, unless you ordered both.

All fixtures will work with 2"x2" tubing. If you're using 2"x2" tubing for the mail rails of the jig or stand, the spacers for the legs and spacer for the adjustable width fixture should be 1"x2" tubing.
Step 3: Assemble Main Part of Frame Jig

Assemble the basic structure for the jig using two main rails (72"), the upright for the neck fixture (36"), the upright for the axle plate fixture (24"), and two base clamps.

The uprights should extend below the main rails by 1-1/2". The upright for the neck fixture should be spaced inward 1" from the end of the main rails. An easy way to assemble these parts is to set the lower rails on two short scrap pieces of 2x4 lumber. Place the 2x4s about four feet apart and set the main rails on the 2x4s with about a 2" gap between them. Slide one base clamp over the left end of the main rails and insert the 36" upright for the neck fixture. Slide another base clamp over the right side (about 16" inward) and insert the upright for the axle plate fixture. Tighten the nuts just until the lock washers start to compress.

If you bought the rotisserie stand, you'll also need the upright for the rear rotisserie bracket (18") and one additional base clamp. The upright should extend below the main rails by 1-1/2" and be spaced inward about 1" from the end of the main rails. Tighten the nuts just until the lock washers start to compress.
Build and Install Feet

**FIRST IMAGE:** Drill a 1/2" hole (centered) on one side of both 4" spacer tubes. Drill a 1/2" hole 1" from each end of both 24" tubes (centered width wise)

**SECOND IMAGE:** Thread a nut onto one of the 1/2" bolts and insert it into the hole to help center the nut while you tack weld it. Remove the bolt and fully weld around the nut. Weld in a well ventilated area. Repeat for the three remaining holes. Do not weld a nut over the holes in the 4" spacers yet.

**THIRD IMAGE:** Center one 24" tube on top of a 4" spacer, with the hole in the spacer facing down and the nuts facing up, and tack weld one side (top of third image). Flip it over and check that it is square (bottom of third image).

**FOURTH IMAGE:** Flip it back over, place two or three tack welds on each side then weld the two seams. Do not weld all four seams or the weld could contact the main rails of the jig and not fit. Weld a nut over the hole in each 4" spacer in the same manner as before.
Attach the feet (carriage bolts or swivel feet) to the four nuts on the ends of the 24" tubes and install under the lower rails of the jig. Secure using two 1-1/2"x5" rectangle plates on top of the rails with 1/2" x 1-3/4" bolts (each with a lock washer and washer). If you purchased the rotisserie stand, the feet from the main part of the jig will be installed on the stand instead. If you are using the jig on a table or lift, level the jig by adjusting the feet, and **torque the two bolts to 15 ft-lbs.**

![Foot Attachments](image1.jpg)

**Install Neck Fixture**

Install the neck fixture on the 36" upright. Tighten the nuts just until the lock washers start to compress. Square the upright for the neck fixture relative to the main rails (magnetic digital angle cubes work great for this) and **torque the nuts on the base clamp to 15 ft-lbs.**

Slide one cone down the threaded rod. Once the frame is in the jig, you'll add the top cone and a 3/4" nut. Don't torque the nuts on the neck fixture until you install a frame in the jig.

![Neck Fixture](image2.jpg)
Install Axle Plate Fixture

Install the axle plate fixture on the 24" upright. The fixture can face forward or backward. Face the holes toward the neck fixture to make welding near the axle plates easier. Face away from the neck fixture if you need more length for a stretched out frame.

The fixture has holes and slots for 3/4", 1", and 5/8" threaded rods (in that order from top to bottom). If you purchased a threaded rod and spacer kit, you will have two 14" threaded rods, four nuts, one 2" spacer, and spacer material to be cut into four spacers. The 2" spacer goes between the fixture plates on the rod furthest from the upright. The rod closest to the upright does not have a spacer between the plates.

To support a set of axle plates, cut four spacers from the two pieces of 8-1/4" spacer material. The spacers go on the outside of the fixture plates as shown in the first image below.

*If the axle plates are an equal distance away from the centerline of the frame, cut four equal spacers. To determine the length of the four spacers, take the distance needed between the axle plates, subtract 2-1/2" (outside width of plates), and divide by two. Cut four spacers to that length. For example, if you want your axle plates to be 8-1/2" apart, you would cut four 3" spacers... 8.5 - 2.5 = 6 and 6 / 2 = 3. The spacer material provided allows for axle plate spacing up to 10-1/2". Additional spacer material can be purchased on our site.*

Don't torque the nuts on the axle plate fixture or the base clamp under it until you install a frame in the jig.
Build and Install Adjustable Width Fixture

The support for the adjustable width fixture is made in a similar fashion to the feet, except that it is installed on the top of the main rails and bolts from the bottom, and you only need to drill one hole. See the section for installing the feet for details. Pay attention to where the welds are placed. Weld in a well ventilated area.

If needed, drill out the hole at the top of each bracket to fit your bolts.
Install Center Fixture

Place the 6" spacer (2"x3" tube) for the center fixture between the lower rails and install the center fixture as shown below.

When installing a frame in the jig, use the 6" spacer (3/4" o.d. round tubing) between the center fixture plates. Cut two spacers (from the shorter 3/4" o.d. round tubing) for the outside of the plates so the total width matches the inside of the mounts on the frame you are supporting. Two 1/4" spacers ("donuts") are provided for Yamaha XS650 frames that need 7" of spacing.

If needed, drill out the hole at the top of each plate to fit your through bolt. The inside diameter of the spacer material will allow for up to a 1/2" bolt.
Step 4: Assemble Rotisserie Stand

Weld Spacers into Stand Uprights

On both of the uprights for the stand (40"), drill a 7/8" hole 1" from one end, and drill another 7/8" hole 4" from the same end (a step drill bit or a good hole saw works well for the 7/8" holes). The holes should be 3" apart and centered width wise on the tube. Flip each tube over and repeat for the other side (not the opposite end). You are creating two 7/8" through holes in each upright. Deburr the holes with a file or small grinding tool so the 4" x 7/8" O.D. spacers will fit through the holes. Weld the spacers into the uprights with 1/2" of the spacer protruding from the inside of the upright. Two sets of 1/4" plates stacked work well for this (second image). If you are using 2"x2" uprights for the stand, leave 1" of the spacer protruding from the inside of the upright.
Attach Third Upright and Rotisserie Brackets to Main Part of Frame Jig

Attach the third upright for the rear rotisserie bracket (18") to the main rails of the jig using one base clamp (if not already completed in step 3). Slide the base clamp over the right side of the lower rails and insert the 18" upright for the rear rotisserie bracket. The upright should extend below the main rails by 1-1/2 and be spaced inward 1-1/4" from the end of the main rails. Square the upright to the main rails. **Torque the nuts for the base clamp to 15 ft-lbs.**

Assemble the clamp part of the rotisserie bracket (two smaller square plates) to the front upright on the jig using four 4-1/2" bolts. If you have 2"x2" uprights, use the 3-1/2" bolts provided instead. Attach the bracket to the upright so the round plate is facing out. The center diamond of the bracket should be about 8" from the top of the main rails. Repeat for the rear upright.
Assemble Stand

Assemble the stand in a similar fashion to assembling the main jig using two base clamps. The uprights should extend below the main rails by 1-1/2" and be spaced inward about 1" from the end of the main rails. An easy way to assemble these parts is to set the lower rails on two short scrap pieces of 2x4 lumber. Place the 2x4s about four feet apart and set the main rails on the 2x4s with about a 2" gap between them. Slide a base clamp over each end of the main rails and insert the 40" uprights. Tighten the nuts just until the lock washers start to compress.

Attach the feet to the stand. See images on page 13. Secure using two 1-1/2"x5" rectangle plates on top of the rails with 1/2" x 1-3/4" bolts (each with a lock washer and washer) and **torque the two bolts to 15 ft-lbs.**

Level the stand by adjusting the feet. The uprights should be spaced far enough apart so the outside of the rotisserie brackets will just fit between the spacers welded into the uprights. You can leave an extra 1/16" for clearance. Measure the distance between the outside of the round rotisserie plates and adjust the uprights accordingly ensuring the uprights are square to the main rails of the stand. Torque **all of the nuts to 15 ft-lbs.**

Step 5: Lift Jig into Stand

Measure again to make sure the uprights on the stand are spaced far enough apart so the ends of the rotisserie brackets will just fit between the spacers welded into the uprights. You can leave an extra 1/16" for clearance. **Double check to ensure that all nuts on the base clamps (all five), and all bolts on the rotisserie brackets and feet are tight.**

Insert two 5/8" x 5" bolts halfway into the spacers in each of the stand uprights. With the help of a friend or two, lift the main part of the jig into the stand and slide the bolts through the spacers and into the round rotisserie plate. The top bolt on each upright will go through the middle hole of the round rotisserie plate. Use two 5/8" SAE washers (smaller than the 5/8" washers used in the neck fixture) and a 5/8" nut to secure each 5/8" bolt.

Some people have had success laying the jig on its side and attaching the stand. You will still want a friend to help lift it upright as the assembled jig weighs about 230lbs.

If you have any questions regarding any part of the assembly process, please email sales@chopsource.com
Frequently Asked Questions:

Question: Do you have a list of all of the tube lengths for the jig?
Answer: See page 10 for the cut list.

Question: Where do I buy the 2"x3" and 2x2" tubing?
Answer: This should be available locally at a metal supply store or welding/fabrication shop. Many times the store/shop will cut them to size for a small fee. Google 'metal supply near me' or 'steel supply near me'.

Question: How long should I make the main rails for the jig?
Answer: That depends on the type of frame you want to put in the jig or what type of frame you want to build. Obviously, if you're building a drag bike you're going to need a longer jig than someone who is putting a hardtail on an old Triumph. These instructions are based on a jig with 6' main rails. That will work for many different frames. The frame in the pictures on page 4 is a Yamaha XS650 frame and 6' rails will accommodate up to an 11" stretch with the axle plate fixture pointed to the rear. You'll get over 17" of stretch if using the jig without a stand since the rear upright for the rotisserie bracket won't be in the way. If you want a longer jig, you can make the rails for jig and stand longer. You could build the jig for the projects you have in mind, and purchase new longer rails later if needed. One of the nice things about a bolt together jig is that you can easily make the jig longer. You won't have to cut it apart and then weld it back together.

Tips:

When drilling holes, use a center punch so your bit doesn't wander, then drill a small pilot hole. Use a step drill bit to enlarge the hole to the required size. Use cutting oil to keep the drill bit cool. For larger holes and step bit or good hole saw will work. A drill press makes the job easier.

Level the jig before starting your project. Digital angle finders work well for this.

Keep the neck, axle plate, and adjustable width (or center) fixtures somewhat loose when putting a frame into the jig. A dead blow hammer works well for moving the axle plate upright back and forth.

Since the adjustable width fixture and center fixture are a fixed height, to lower a bike in the rear, you will raise the axle plate fixture.

If you have a complete bike and you want to modify the frame in the jig, take measurements from the bike before you take it apart. With a rider sitting on the bike, measure the rake of the head tube, the distance from the head tube to the ground, the distance from the lower frame rails to the ground, and the distance from the rear axle to the ground. You might want those measurements later and they are easier to get with the bike together.