Securing a Whole Animal to a SpitJack Rotisserie

Instruction sheet for trussing hardware and equipment

Securing the meat to the spit is a critical part of the rotisserie cooking process. If not done properly and sufficiently, your entire event may be susceptible to failure. Since the rotisserie will be turning at a constant rate of 4-6 RPM and you have a relatively heavy unbalanced load, there are considerable forces that you must reckon with to ensure your success. Using the appropriate hardware and accessories is essential to this process.

Each event is different both in type and weight of the meat, slaughtering methods, and final preparation so it is virtually impossible to prescribe just one method, hardware set, or piece of specialty equipment. Our answer is to provide you with many different tools and equipment so you can adapt to the specific needs of your event.

Basic concepts and tips:

1. Skewering vs. Securing. The simple idea of skewering meat with a spit is best suited to solid pieces of meat like roasts. A whole animal is a hollow object, not a solid piece of meat. Because of this, a different approach is taken. The animal must somehow be firmly connected to (or engaged with) the spit. While another popular concept, large spit forks that are bolted to the spit and then stuck into the meat have some value, they are rarely sufficient to do the job, especially on larger animals. The best way to assure the animal will stay connected to the spit throughout the entire cooking process is by bringing the spit and the animal's backbone into play. By either stitching with twine, wire, or by using other hardware, a strong adjustable connection between the spit and the backbone is the best way to avoid the meat "flopping" during the cooking.

Method 1: Trussing with a needle and butcher's twine

This method uses a special long needle and butchers' twine to basically stitch the animal onto the spit (see instructions of the website or in the user manuals. This method is all that is needed for most animals under 50 lbs. The drawback to this technique is that if the stitches loosen, there is no easy way to tighten them. Also, this alone is not sufficient for larger animals (for more information and illustrations, see the related document Spit Trussing a Whole Animal Using a Needle and Twine).

Method 2: Banding with oversized hose clamps

These can be used in one of three ways: 1) to lash the legs of the animal either together or to the spit or both, 2) as a "stitch" as in the method described above, or 3) to keep the meat intact by banding it around the animal, usually at the key heavy parts (legs, shoulders). This provides an alternative to wrapping with chicken wire which may leech poisonous chemicals (if galvanized) into the meat. These clamps can be tightened as needed with a simple screwdriver throughout the cooking process.

Method 3: External spit forks

External forks are what most people associate with spit binding. They slide onto the spit and the fork tines enter the meat before the fork is tightened on the spit. This can be done at either or both ends (although not practical if the head of the animal is still on). While this method seems natural, it has its drawbacks when cooking whole animals. It is better suited for solid pieces of uniform size meat that are cooked more quickly. When used on a whole animal, it may be hard to engage the tines effectively and if you can, they may start to loosen (and are not able to be adjusted or tightened) as the meat softens toward the end of cooking.

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Method 4: Spit pins
This method uses a specialized spit pin made of stainless threaded rod with oversized washers and wing nuts at each end. The pin is jammed (or power driven) though the animal usually at the heaviest concentration of meat such as the legs, hips, or shoulders, through the spit, and out through the meat again. The wing nuts at each end can then be easily tightened as needed. Oversized washers prevent the wing nuts from digging too far into the meat. By utilizing the holes in the spit this method brings the spit into play to help move the largest parts of the animal. The drawback of this technique is that the backbone is not brought into play and if the meat becomes soft enough, they could lose their effectiveness (not likely). Pins can also be used to secure the head to the spit or bind the feet together.

Method 5: U-bolts
U-bolts are very effective in binding the meat to the spit and preventing "flopping" of the heavier sections of the animal during cooking. They use the best design concepts of some other methods and provide the most reliable way of securing larger (100 lbs. or more) animals. The U-bolt is placed around the spit from the bottom and then driven up through the meat and protrude on either side of the backbone. It is then secured with a common plate and tightened with wing nuts. The plate can then be easily tightened down as needed throughout the cooking (not illustrated).

Method 6: Shackles
Trussing shackles are a specialty piece of hardware developed to keep the legs of whole animals (pigs, lambs, goats) in place while going. They also serve to hold the legs of the meat in place and assist in the overall trussing efficiency throughout the cook. Shackles should be attached after the animal is already secured on the spit. The feet are then inserted into the u-bolts of the shackles and tightened down. Note: there are times when using shackles may not be advised. If there is too much stress on the leg joints (caused by needing too much force to bring them up) they may split apart during the cooking. Legs may also be tied up with string or wire or simply cut off at the middle joint.

Wrapping in chicken wire
We do not recommend this (unless you are using stainless steel chicken wire). See Method 2 for a more detailed explanation.

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Fire Pit Layout for SpitJack XB85 Rotisserie System

Below are illustrations of how a fire pit can be constructed for your rotisserie from simple building materials that are available at local building supply stores. The fire pit provides a non-combustible surface for your heat source and serves to protect (partially) the ground beneath it. It also acts as containment for the fuel and provides some additional radiant heat. Overall, this is a practical and inexpensive solution for a cooking environment for your rotisserie. Since there is no mortaring used, you can easily break it down and store it for the next use.

> Note: this will not prevent damage to the ground underneath. While there will be no direct contact from fire, the heat generated will cause live grass to be burned and may be dangerous to be used on any combustible surface (such as a wood deck).

Material List and Instructions for a brick fire pit for the SpitJack XB125C Rotisserie:

From The Home Depot (similar products are available through other sources) you will need:

1. **96 of these concrete pavers (bricks) in either style: (about $60.00)**
   Pavestone Holland 4 in. x 8 in. Concrete Paver Model 22051EA
   https://www.homedepot.com/p/Holland-7-75-in-x-4-in-x-1-75-in-River-Red-Concrete-Paver-22051EA/100619492
2. **22 of these landscape edging bricks: (about $30.00)**
   Pavestone 1 ft. Concrete Scallop Edging
   https://www.homedepot.com/p/Pavestone-12-in-x-2-in-x-5-25-in-River-Red-Straight-Scallop-Concrete-Edger-74851/100620831
3. **1 or 2 bags of paver sand for leveling and finishing (about 10.00)**
   https://www.homedepot.com/p/0-5-cu-ft-Paver-Sand-98000/100343385?MERCH=REC-_-pipinstock-_-301963267-_-100343385-_-N

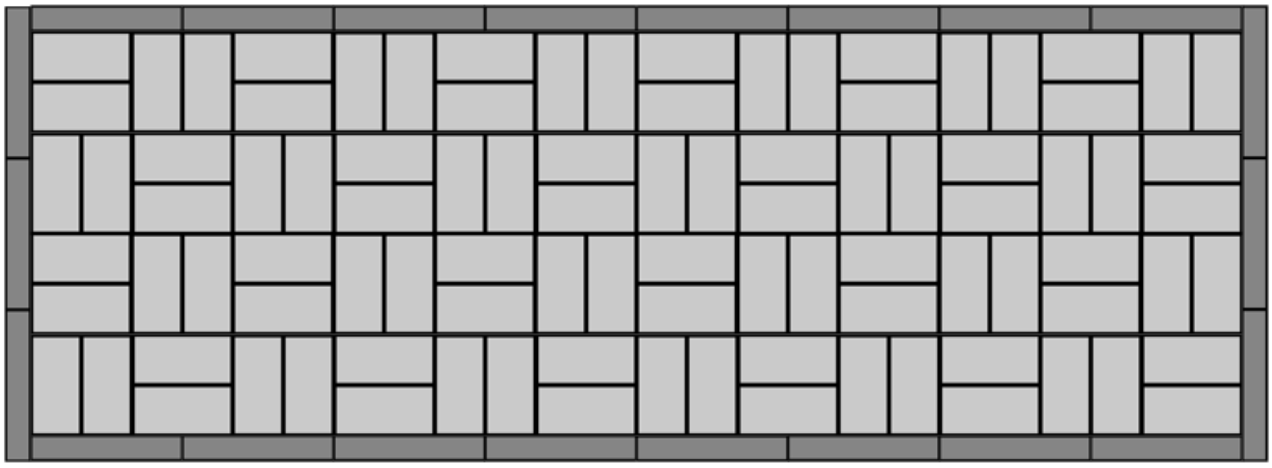
Total cost of pit materials (estimated) - $ 100.00

Constructing the pit:
Find a level non-combustible surface of at least 4’ x 8’.

1. Clear area of any protruding stones or roots.
2. Check to be sure it is level. If needed, contour the ground and pack down firmly.
3. Spread a layer of sand over the entire area and level it with a board or other leveling tool.
4. Place the pavers down as described in the illustration below.
5. Place some more sand over the finished pavers and brush it into the cracks. Sweep and remaining sand away (optional).
6. Place the edging blocks around the sides. You may need to cut or break and edger to make it fit.

Storage and maintenance:
When you are finished using your pit, make sure it is fully cooled before cleaning or disassembling. Hose down the pit with cold water, dry each piece and stack and store indoors or outdoors.

Pattern suggestion for pit floor:



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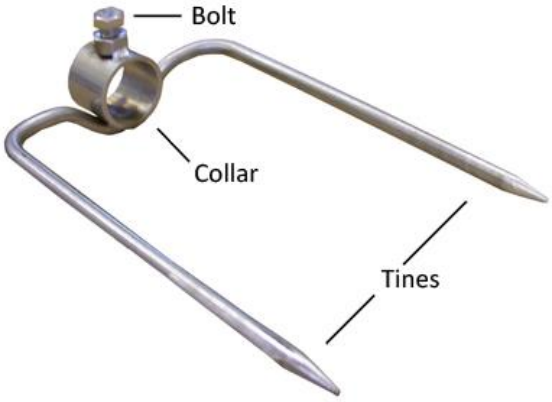
SpitJack Rotisserie Fork Instruction Sheet

Version 3/10/21

Rotisserie forks can be used to help fasten the animal to the spit and to keep other parts in place during cooking. They are easy to use and maintain. Following the instructions below will give you better and safer results. Check the fork to make sure all parts are included. Use caution when handling the fork as the ends of the tines are very sharp.



1. Make sure you wash the rotisserie fork in warm soapy water and rinse before each use.
2. Unscrew the bolt so that it allows full clearance through the collar.

3. Slide the fork over the spit with the tines pointing in the direction of the meat.
4. Drive the fork into the animal and wrench-tighten the bolt. Try to get into as much meat as possible for the most secure and lasting connection. Make sure the bolt is very tight to the spit and that you are not through or near one of the holes in the spit.
5. Observe frequently during cooking. Tighten as necessary.
   Note: after long, slow cooking, the meat may begin to soften and the forks may lose their hold. To avoid problems that may be caused by this, we recommend using other methods of meat trussing as well: binding clamps, needle and twine or spit pins.
6. When the cooking is finished, simply unscrew the bolt until the clamp is loose enough to remove. Be sure to use caution as the fork may be very hot.

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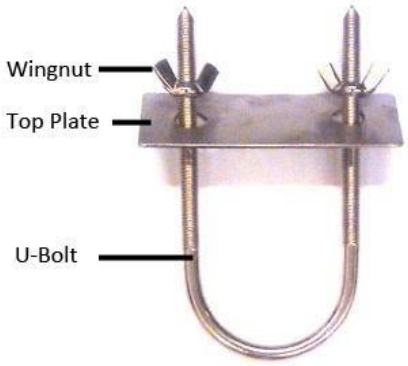
SpitJack Rotisserie Trussing U-Bolt Instruction Sheet

The SpitJack Stainless Rotisserie Trussing U-Bolt is designed to secure the meat to the spit and to keep it from flopping and coming loose during cooking. It can also be tightened during cooking to assure the meat stays tight to the spit. This product comes in different sizes and styles. The product that you have may vary slightly from the one pictured below. This instruction sheet will work for all styles of SpitJack U-bolts.



To secure the U-Bolt correctly, follow these easy instructions.

1. Wash the entire assembly in warm soapy water and rinse well before each use.
2. Remove the wing nuts and top plate from the bolt.
3. Position the bolt so that the open (sharpened) ends are spanning the spit on the underside of the animal and pointing towards the top (animal pictured below is upside down) .

4. Drive the U-Bolt through the animal so that the spine and spit are both between the sides of the bolt. Be sure that both ends of the bolt emerge through the back skin *each on one side of the spine*.
5. Wipe excess fat and skin off of the exposed section of the U-Bolt prongs with a clean cloth.
6. Secure the top plate over the U-Bolt prongs and fasten on the wing nuts until tight.
7. Test by observing the connection you have just made while the meat is turning (and before the cooking has started).

8. Continue to monitor the tightness of the bolt during the cooking.
9. When the meat is finished cooking, remove the wing nuts and top plate using a heavy glove or other heat protection. Pull the bolt out from the underside and clean all parts (dishwasher safe) thoroughly before the next use. A soft brush is useful to clean the threads of the bolt.

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Trussing Needle and Twine Instruction Sheet

We provide you with our trussing needle and twine package primarily to give you a way to sew up the belly (or any other loose flaps) of a whole animal you will be cooking on your rotisserie. For chicken, turkey, or even lamb and goat, it is not too difficult to pierce the skin. But for pigs and hogs, it can be a bit of a challenge. Our needle is sharp enough and strong enough to get it done.

Preparing the twine:

Measure out and cut off about 4X the length of what you will be sewing up. Wet one end of the twine, compact the strands, and push it through the eye of the needle. Bring it through about six inches.

Stitching the skin:

For stitching the belly of a lamb or pig, we recommend using the cable stitching method. Here is a video on how we do it.

Other uses:

The twine can be used for tying the legs (front of back) to the spit or lashing them together to hang. Twine can also be used to help secure the big joints if they start to come loose.

Will the twine burn during cooking?

No. The moisture from the meat will make it impossible for the twine to catch on fire. Besides, you should never have any live flame too close to the meat. If you do, there are more serious issues to worry about.

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Rotisserie Trussing Shackles Instruction Sheet

Trussing shackles are the luxury hardware of large animal rotisserie cooking. They are very effective and most times the best solution for the problem of how to best handle the legs of the beast. They also make the whole operation look cleaner and more professional. The one drawback is that they may stress the joints of the legs with longer cook times. They are also more expensive than the alternatives. Trussing shackles are a good investment. Good to use for most events and good always have on hand.

Shackles are attached after most of the main trussing has been done. Loosen the thumb bolt and slide the shackles onto the spit. Insert the legs, one at a time, into the u-bolts and tighten down the wing nuts. The u-bolts should be hitting the meat at the high ankle mark. Adjust the shackles if needed and secure them tightly with the thumb bolt. The u-bolts may need to be tightened from time to time.

Keep the shackles clean by removing all cooked material before washing with soap and water or running them through a dishwasher. Use a stiff bristle brush to fully clean the threaded portion of the u-bolts.

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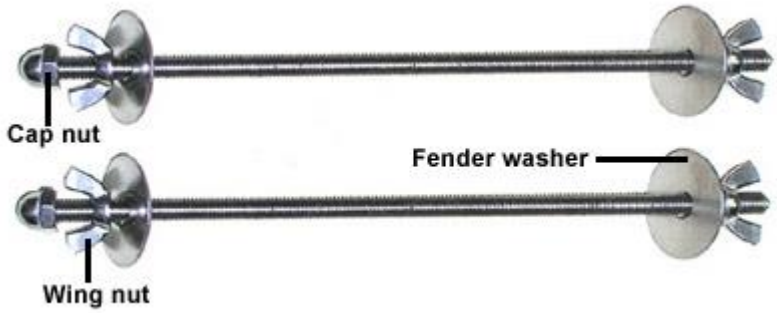
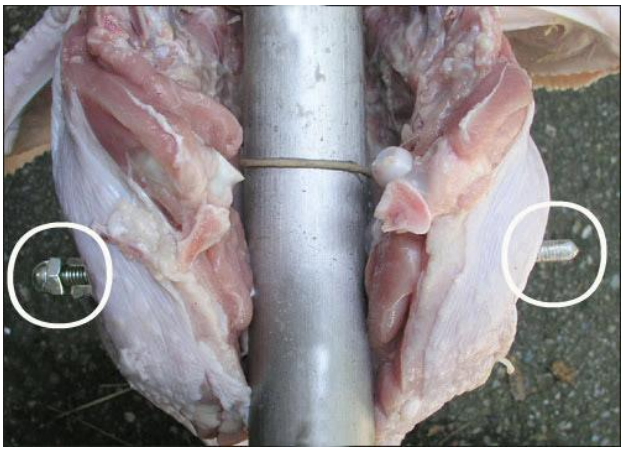
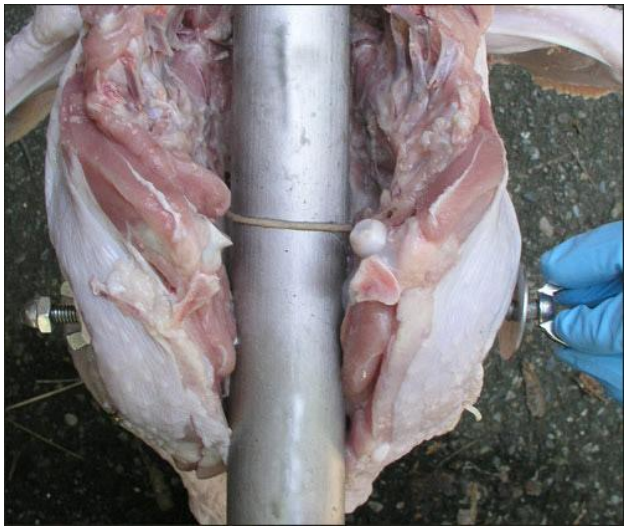
Rotisserie Spit Pins Instruction Sheet



1. Set up the spit pin as illustrated above.
2. Remove the wing nut and fender washer from the pointed end of the pin.



3. With the meat on the spit, make sure you have the spit oriented so that the hole is facing the proper direction to receive the pin.
4. Driving from the cap nut, push, hammer or drive the pin through one side of the meat, through the hole in the spit, and then out the other side of the meat. You can use a 9/16” socket wrench (hand or power) to help if you need to. The pin should now look like it does in the photo to the right.



5. Replace the second washer and wing nut on the pointed end and tighten down both wing nuts as needed.
6. The wing nuts may be tightened all through the cook as well.
7. Remove the pins by first removing the wing nut and washer on the pointed end and then pulling it out from the cap nut side.
8. Clean the pins by soaking before scrubbing with a stiff brush. The pins are dishwasher safe.

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Dual Sensor Meat and Oven Thermometer Instruction Sheet

The SpitJack Dual Sensor thermometer is an essential tool for spit roasting a large animal. It is inserted into the meat and can be left there even under high temperature conditions.

There are two dials.

1. The upper dial provides the internal meat temperature.
2. The lower dial provides a reading of the ambient or air temperature. A sensor embedded in the back of the thermometer. reads the air temperature very close to the meat surface which gives you with accurate and continuous feedback for maintaining your fire level.

Wash the thermometer stem in warm soapy water before each use. Insert into the meat in the thickest part (leg or shoulder) but try to avoid getting too close to a large bone. We recommend using two thermometers for large animals, placing one in the leg and one in the shoulder (since they are separated by a large hollow cavity, they are in effect separate cooking zones).

The internal temperature (upper dial) will not register for some time. Be patient. It might take hours for a large piece of meat to get to 120F (minimum reading). The ambient reading (lower dial) will register quickly but do not be surprised with a lower -than-expected reading. It takes a lot of heat to get to even 225F with an open charcoal fire. Lower the meat if possible before stoking the fire too high.

When the desired internal temperature is reached, remove the thermometer, and place it in a safe place. Use protective gloves, or a heavy cloth to handle the thermometer when removing it after cooking. Clean the thermometer with warm soap and water by hand (no dishwasher). Use an abrasive pad to clean the lens if needed.

Please contact us with any questions or if you have any problems with this product.

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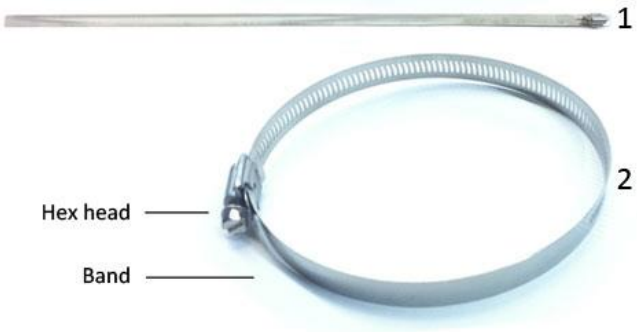
Whole Animal Trussing/Binding Clamps Instruction Sheet

Binding clamps can be used to help fasten the legs and neck of the animal to the spit and to keep other parts in place during cooking. They are easy to install and maintain. Following the instructions below will give you better and safer results.



1. Make sure that you wash the clamp in warm soapy water and rinse before each use.
2. You may receive your clamps unfastened [1] or already "started", with the band already connected to the hex head. If not [2], simply push the open end of the band into the slot under the hex head and hold it while you turn the head with a screwdriver. It should feed into the head and tighten as you continue to turn the hex head. *Tip #1: if you need more length on your clamp, simply fasten two together. To make it easier (especially on longer clamps with more band slack) use a 5/16 nut with an electric driver.*
3. Place the clamp (either open or started) where you wish to fasten the meat.
4. Keep tightening the hex head until the clamp is tight around the meat.

5. Inspect your clamp frequently as the meat is cooking. Since the meat will soften as it cooks and may shift in position, it may be necessary to tighten or adjust the fitting frequently.
6. When the cooking is finished, simply unscrew the hex head until the clamp is loose enough to remove.

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How to Create Crispy Pig Skin Using a Rotisserie

Crispy pork skin, one of the best parts of eating a whole pig, is not easy to make. You would think that the long cooking times would naturally make the skin crisp, but it doesn't work that way. Pork skin is thick and tough (for most pigs over 25 lbs), and nothing about the basic way it is cooked – turned over a low fire for hours – will create that light, crunchy, tasty result. Crisping the skin of any meat, whether chicken or pork, requires high heat and fat. The cracklings that you can buy in a bag are deep-fried at 375F. You have rotisseried your pig at 225-275F. The skin you are left with may look good, but it will be tough to eat. Without the high heat, it cannot transform into the delicious appetizer that we need.

There is a way to create that crispy result, though, without taking your meat off the spit. You simply have to raise the heat. (giving it a quick and light baste with some fat will help as well.) You can do this by either bringing more coals under the meat, lowering the spit to get closer to the heat, AND, stopping the turning by shutting off the motor temporarily. A combination of these methods may be needed depending on how you have set up your pit. Stopping the rotation exposes only one small section of the skin to the heat. This creates a broiling effect and exposes the skin to enough high heat to transform it**. CAUTION: the meat cannot stay without turning for very long - 30 seconds to 1 minute – before it will start to burn.** The trick is to start up the turning when the skin has crisped but not yet burned. Move it along only about a 1/8 revolution and repeat the process. You may have to go around again to get the best coverage.

This is not a complete or pretty result. There will be burned parts and parts where the process didn't take. But what did work will be delicious, worth the trouble and your guests will be very happy.

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Tips and Tricks for Using a SpitJack Rotisserie System (Lamb)

1. DO NOT buy more meat than you need. DO buy more charcoal than you need.
2. Use a body bag to transport and store your lamb.
3. Plan thoroughly and in as much detail as you can.
4. Plan to do most of the work.
5. Plan to have it take longer than you think. Much longer.
6. Plan to stay sober until the meat is served. Assume no one else will be sober.
7. Truss your meat to the spit the night before.
8. Leave 2 hours for trussing. Invite some friends to help. Offer beer.
9. Truss the meat way more securely than you think is necessary. Use both u-bolts.
10. Do not put the spit through the butt. Lay the hams over the spit.
11. Use a meat saw, hack saw, or Sawzall if you need to
12. Sew up the belly and do not stuff it unless you really know what you are doing.
13. Use heavy foil to protect the ears and tail.
14. Season the night before. We use a wet rub of garlic, Kosher salt, pepper, olive oil, fresh thyme, and rosemary.
15. Salt the inner cavities.
16. Have a pop-up canopy ready.
17. Get your meat to over 50F before cooking.
18. Use natural lump charcoal, not briquettes.
19. Use the dual sensor thermometers.
20. Baste with fat only, olive oil is preferred.
21. Use a leaf blower to stoke the fire when needed.
22. Use a pump sprayer to douse the fire when needed.
23. Think about things to talk about with spectators.

24. Do not take any cooking advice from spectators, even if they are sure they know what they are talking about.
25. Never leave the pit unattended for more than 3 minutes. Never fully trust anyone you leave in charge.
26. Stay sober.
27. Make lunch with a small grill over the pit. Sausage and grilled garlic bread are my favorites.
28. Keep the thermometers at 250F (external)
29. Do not expect any movement on the internal temps for at least 2 hours.
30. Be patient.
31. The cooking will stall at about 165F internal and stay there for up to 2 hours.
32. Cook until internal temps read 195-200F.
33. Cook until internal temps read 195-200F. Really. The meat will be transformed at this temperature.
34. Be patient, stay sober.
35. Remove the spit from the motor CAREFULLY and place it on a large table.
36. Pull and shred what you can, cut and slice what you cannot. Quickly.
37. Put processed meat in a chafing dish or covered pan kept warm near the fire.
38. Season the meat if needed.
39. Enjoy the feast – now, you can party 😉!

Did I miss anything? Please, send me your tips and tricks for cooking a whole lamb.

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Tips and Tricks for Using a SpitJack Rotisserie System

1. DO NOT buy more meat than you need. DO buy more charcoal than you need.
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10. Do not put the spit through the butt. Lay the hams over the spit.
11. Use a meat saw, hack saw, or Sawzall if you need to
12. Sew up the belly and do not stuff it unless you really know what you are doing.
13. Use heavy foil to protect the ears and tail.
14. Inject the night before.
15. Scrub the skin (or outer surface of the meat) with a brine-soaked towel.
16. Salt the inner cavities.
17. Have a pop-up canopy ready.
18. Get your meat to over 50F before cooking.
19. Use natural lump charcoal, not briquettes.
20. Use the dual sensor thermometer. Both if you have two.

21. Baste with fat only, melted lard for a pig is preferable.
22. Use a leaf blower to stoke the fire when needed.
23. Use a pump sprayer to douse the fire when needed.
24. Think about things to talk about with spectators.
25. Do not take any cooking advice from spectators, even if they are sure they know what they are talking about.
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30. Do not expect any movement on the internal temps for at least 2 hours.
31. Be patient.
32. The cooking will stall at about 165F internal and stay there for up to 2 hours.
33. Cook until internal temps read 195-200F.
34. Be patient, stay sober.
35. Crisp the skin (see our instructions)
36. Remove the spit from the motor CAREFULLY and place it on a large table.
37. Take off the skin and distribute the crispy parts.
38. Pull and shred what you can, cut and chop what you cannot. Quickly.
39. Put processed meat in a chafing dish or covered pan kept warm near the fire.
40. Season the meat (it will take more than you think)
41. Enjoy the feast – now, you can party 😉!

Did I miss anything? Please, send me your tips and tricks for whole pig cooking.

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