At the subwoofer manufacturing facility in Michigan, we got a chance to see the Power subwoofers being built here in the US of A. Rockford has been producing subwoofers for over 20 years, designing and manufacturing their own subwoofers, once they realized that nothing but the best could stand up to the power and abuse that Punch amplifiers could dish out on a daily basis. We will be focusing on the process of building a Power series subwoofer from beginning to end.

The process begins in the engineering department. Here a group of dedicated individuals begin the process of developing new products, and testing out competitors existing products.

Here they are developing some top secret stuff; they didn't want to tell us more for obvious reasons. Just for size comparison the pictures below show an 8” woofer next to the project in question



It starts with a simple spool of copper wire. The wire is spun over a voice coil former (the tube part). The voice coil is then baked to cure the varnish that was applied. The process is pretty much the same between the Power and the Punch products outside of the fact that the Power series voice coils are larger in diameter and longer in length (which is one of the reasons that Power series subs have higher power handling and longer excursions).

On the Power Series subwoofers, they take a different approach when it comes to the motor assembly. Since the magnet is placed inside the subwoofer basket instead of on the back of it like the Punch series, they don t have the luxury of building it from the bottom up. The first step involves screwing the speaker terminals to the basket.

Here someone is getting the basket ready for attaching the magnet.






After the magnets are attached to the woofer, the next step is to attach the spider/ voice coil & cone assembly. In the case of the Power series subwoofers, the spider/voice coil assembly is attached to the basket and then the cone is attached afterwards



Next, they attach the cone to the spider/voice coil assembly with an industrial grade adhesive (when you rate a woofer to handle up to 2000 watts, you need the best materials to get the best results.) When that is complete the woofer is taken to another pneumatic press to make sure the surround is firmly attached to the basket. After that the dust cap is attached to the cone using adhesive, a large weight is placed on top to ensure that the glue joint is as strong as possible.









As an added measure to ensure quality, a sample of woofers are taken off the production line and put through a full battery of tests. One of the tests is a relative low stress test called a Klippel analysis involving a calibrated laser and a super complicated software package.



A Klippel analysis is the equivalent of a speaker dyno test, in this case they are making sure that all the published parameters are being met or exceeded (power handling, frequency response, etc.) In addition to the Klippel test, they also put a sample of subwoofers through a full power assault to make sure they are meeting the rated power handling. Not for a few minutes, or a few hours, but for 24 hours straight at full rated power. The room they use to conduct this test is called the "Boom Room". As you can see, those are 10X 30001BD amplifiers, so that wall of amplifiers right there can put out over 30,000 watts at its rated power (and since RF amplifiers are underrated it is closer to 40,0000 - watts).The other rack of components, is test and measuring equipment



Only once they are certain these products will uphold the Rockford Fosgate name will they be allowed to be boxed up and get sent to the warehouse for shipping to retailers via distribution points and ultimately to the end users all over the world.
Here we see the product getting boxed up for shipment. In this case being packaged is a master pack of six 8" woofers .As you can see they are very concious of preventing any kind of repetitive motion injuries for their staff
In particular, all the woofer boxes are moved by machine from the conveyor to a waiting pallet on the floor with this motorized arm.