Welcome to the Podium Club!
The information found at www.antiquetractorpullguide.com is like no other information out there. The tips, tricks and secrets of successful tractor pulling are designed to improve your performance at the next tractor pull, while having more fun at the same time.

Project Update: Putting the Offset Grind to Use
The current project is a 1943 Massey Harris 101 Senior. This tractor was originally equipped with a Continental F226 flathead six cylinder engine. These engines are very common and were used in all sorts of applications including forklifts, generators, pumps, etc. The engine features a bore and stroke of 3-5/16” x 4-3/8”, respectively. It was also carried over into the later 44-6 tractor, which was an economy model to the 44-4 with the overhead valve 4 cylinder Continental H260. Although the F226 could probably have been massaged to produce better power, they are limited by bore size and the bottom end of the engine is tight for added stroke. It can be done, but luckily there are other options.
Continental produced two larger families of flathead six cylinder engines – the M series and B series with larger block sizes. The most common power upgrade for a MH 101 Sr or 44-6 pullert is the M330. This is a 330 cubic inch flathead six that is the same stroke as the F226, just a larger bore. The block is longer and heavier. The B427 engine is a massive 427 cubic inches that features a 4-5/16” bore and 4-7/8” stroke. The B427 is heavier and longer than the M330.

These larger Continental flatheads can be swapped into Massey Harris tractors, but at the serious cost of weight. While the F226 weighs 550lbs, the M330 is 800lbs and the B427 is a whopping 950lbs! Of course, the clear advantage of one of these engine swaps is….more power.
Putting the Offset Grind to Use (cont)

One of the reasons the M330 or B427 engine swap is less common than other tractors is that the engines are relatively hard to find and the cost to repair them can be very expensive. The M330 and B427 engines were used in transportation and industrial applications.

All that being said, my policy is to always “go big or go home”. After doing some research and looking around, I was able to locate a B427 power unit engine and similar transportation engine. Using these engines to build the ultimate unit to put in the tractor, the build gets very interesting. Keep in mind parts are scarce for these engines, they are a flathead, and the added 400lbs of weight over the F226 will have to be addressed later.

Ever wanted to see the actual size difference between one of these engines and the original F226 that came out of the tractor?

42-BX Truck Engine (427 cubic inch)
Putting the Offset Grind to Use (cont)

These pictures show a B427 (left) sitting next to the F226 (right). I am either crazy to attempt this project or the payoff will be a good, potent 6mph pulling tractor.

The MH 101 Sr. tractor shown has the M330 engine in it. Notice the sheet metal bulges out on the right hand side to accommodate the manifold and carburetor of the bigger engine.
Putting the Offset Grind to Use (cont)

Let’s get back to where the offset grind comes into play. Upon first inspection, the B427 power unit engine looked pretty good inside. It was actually a running engine when pulled from service and to my great surprise, none of the valves were stuck. The engine could probably have run if I had attempted to start it. Upon further inspection though, there was a reason the valves weren’t stuck. They had an enormous amount of play from LOTS of hours of run time.

The bores generally looked good, but the pistons also showed signs of a massive amount of hours. Also, there were two types of pistons used for a previous rebuild. Three pistons were one type and three another. The decision was made to look at options for the engine if a bore job was to be done.

The rod journals on this engine are 2.5” in diameter, which means it was highly possible to do at least an offset grind to 2.25” and pick up 0.25” of stroke. With an engine as massive as this, the offset grind could yield a significant increase in cubic inches. It would be even better if this could be achieved with “off the shelf” type components to avoid custom rods, pistons, etc. The idea is to always keep the cost down in any build, but this one especially. The Continental rod bearings alone were extremely expensive, so the opportunity was there. For this, it was the connecting rod that had to be identified first.
Putting the Offset Grind to Use (cont)

Using the Automotive Engine Rebuilders Association (AERA) connecting rod catalog, a connecting rod was identified. This catalog is extremely valuable and I would highly recommend it to anyone who is looking for connecting rods. It has size and center-center distance information for automotive and industrial engines back to the early part of the 20\textsuperscript{th} century. Yes, our antique tractor engines are shown in this catalog.

The original B427 connecting rod is 8.375” center-center, with the mentioned 2.5” bearing size.

The connecting rod identified is from a Perkins 203 diesel engine. This rod is 9” center-center with a 2.25” bearing size. These rods were used in Massey Ferguson 65 and 165 tractors and are a very strong, readily available rod. Also, because they are so common, a bearing kit is only $20.

Why a longer connecting rod? This gets the piston pin farther up into the bore, which gets into a pin height area for a cheaper, off the shelf automotive type piston.

Rod Weights:

B427: 4 lbs

Perkins: 3.4 lbs

B427 connecting rod (top), Perkins 203 connecting rod (bottom)
Putting the Offset Grind to Use (cont)

The pistons in the B427 were already 0.030" oversized. In doing the math using the deck height of the engine, it was possible to identify the new piston by the compression height. To select a piston, I simply went online to the Summit Racing website (www.summitracing.com). They have a great online tool that can narrow down a piston by diameter, compression height, etc. The chosen piston is a cheaper aluminum forged type from a Ford 429 V8 engine. This piston has the correct 1.89” pin height and is available in a 4.39” bore. These pistons were readily available for $63/hole. To compare, a custom built piston is usually $100-150/hole with rings. It definitely helps keep the cost under control if more common components are used.

With the increase in bore to 4.39” and increase in stroke to 5.125”, this makes the overall displacement of the engine 465 cubic inches. Using the offset grind and doing a bit of research, the engine picks up almost 40 cubic inches using much cheaper off the shelf components. Is that worth doing? YES! Ok, one more million dollar question. The answer is YES, the bell housing from the F226 bolts to the B427 without an adapter plate. (see picture at right)
URGENT UPDATE!

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Here’s a small sample of inventory! Many, many more copies are in stock now!
Putting the Offset Grind to Use (cont)

These bigger flathead engines will never be an IH Red Diamond 450 or 501, or have the efficiency of a Waukesha in an Oliver, but it should be fun to play with.
Podium Member Spotlight – Greg Knapp

Hi this is Greg Knapp from Middleport, Ohio. Three years ago on my birthday of July 24, I went to a tractor pull in Meigs County Ohio with my Brother-in-law. That day Steve and my wife Tabitha were talking about how I thought tractors were so neat. That day the paid my yearly dues of $10 to become a member of The Big Bend Farm Antiques Club. He paid to pull in two classes and he let me pull the second class. I pulled his Allis Chalmers WD 45 and I was Hooked. Immediately after the pull was over I started looking for a WD-45 but had no luck. I finally found a John Deere 50 which was completely stock until we changed the air cleaner and the stack. The tractor pulled in the 5000 lb and 5500 lb classes and pulled a distance of 274 feet. I think that was really good for a stock tractor. Well over this winter I got mad and sold my Deere then spring came around and I got the fever again this time I have changed to Farmall. I recently purchased a 1947 Farmall H. I know absolutely nothing about them but I do want to make a good puller out of it. I know you have learned all of your techniques by trial and error and I would be appreciative if you could give some pointers on where to start and what to do. I have been told that I can use an intake and carb from a M, can you confirm that? I have included pictures of the Deere and The Farmall. Any way not only do I have the fever but my wife and our 13 year old son Gregory does too. Do you have any pointers to give me to make sure he keeps the pulling fever instead of wanting to run the streets when he gets older. Thanks a million, Greg Knapp
Podium Member Spotlight – Vic Simpson

Zack Great job on the kids couldn't do better myself. Hope the Mrs. is alright too. We had our son's twins (23 months) for a week! The reason young people have kids. Thought I might submit this. Vic Simpson Barnhill, IL. (located in the south eastern part just south of I-64, at the 112.5 mile marker) I got into pulling back in 1967. I bought a U Moline for $100. Drove it home (20 miles). The next morning went to start it and the motor was locked. Pulled a plug and water squirted out! As luck would have it a good friend of mine had bought a GB LP Moline. He just wanted the rear end and trans. Let me have the motor for $250 or half what he paid. We both worked as mechanics for Mill Shoals Implement, a MM dealer. The motor looked bad, black and nasty. But after checking inside was clean as a pin. Took it apart and put new rings and gaskets in it. Ported the heads a little and port matched the manifolds. This motor also had M&W pistons and I think 10A4206 heads. A set of 4 inch widen rims and a big aluminum carb from an Oliver. And voila, I had a 100 plus hp pulling tractor. It just had 85hp through the original air cleaner. I had a lot of fun with this old U. Nobody understood then what a 6 inch crank did to a Moline. Pulled it at Fair puller's at 9000 lbs. Remember always looking for a dock to unload. We hauled then on a 2 ton truck and no ramps. Everyone did. It did win some. Pulled a 4010D in the 12000 NA class next. Then rode horses and 3 wheetlers for the next 30 yrs. Got back in pulling a little over 10 years ago, with a Allis WC, styled 1945 model. It is a war model, steel rear end and foot brakes. It is 366 cu in. Had a lot of fun with it and learned a lot! The most notable pull it won is the 4500lb class at the 50 yrs of progress pull at Rantool, IL year before last. I am now pulling a 435 JD that came with a 2-53 detroit (2 cylinders with 53 cu each), not very big. It took me about 5 yrs to build it. It is the winning-est tractor I have ever had. For some reason it is easy to balance. I have took it to some big pulls and came in 1st. Last year at the Mid Atlantic Super Pull, it made a Full Pull in the 5.5 Mod, 3500 and a 350 IHC did also. I came in second in the pull-off. Then took 1st in the 4000. Took it to Tunica Southern Nationals 3 yrs. First year came in second in the 3500 4 mph class and third in the 4000. Second year 1st in the 3500 and 2nd in the 4000 4 mph mod class. Last year 1st in the 3500 and 3rd in the 4000. At the USAP Thanksgiving Pull. 1st in the 3500, 1st in the 4000 Full Pull. Then was kidded into entering the 6MPH
Podium Member Spotlight – Vic Simpson

class and got second. The box was coming up faster and should have moved one weight forward. Also went to Springfield, MO indoor pull and I think 3rd in the 5 mph 3500 and a Full Pull in the 3750 and the win. That is enough bragging, but the 435 is a tremendous puller, considering it just has enough power to go 3.5 mph in low gear. Good tires and balance are everything. Hope to see you-all soon Vic

Good stuff Greg and Vic. Thanks! I have seen Vic’s tractor pull the past two years at Tunica and yes, it is very impressive!

~Zack

Want to be a part of the Podium Newsletter? If you're interested in sharing your pride and joy, send an email to zack@antiquetractorpullguide.com. Answer the following questions:

- Your Name and where you're from
- How you got into pulling
- What clubs you like to pull with
- Tractor Make/Model/Year
Coming next month…

- Dyno spotlight
- Benton County Pull
- Podium Members
- And more…

I want to hear from you! If you have feedback, requests or information you would like featured, please send an email to: zack@antiquetractorpullguide.com.

B427 Manifolds
Note torched hole in original – custom dual exhaust.

May issue will be available 5/29/13