Growing Your Agricultural Engine Business

By Jim Walbolt

Most automotive machine shops and engine builders are familiar with cars and trucks as a market for their services. In fact, for many shops, these two markets are their lifeblood. A look at other markets, however, is always worthwhile and any industry that uses equipment powered by an internal combustion engine should be a prospective customer. Take, for example, the agricultural industry.

When most people think of agricultural engines, they automatically think of farm tractors, yet, in reality, the agriculture industry encompasses much more than just tractors. Most farms have a complete collection of self-propelled equipment and that is what most of us should be interested in. If it has an internal combustion engine, sooner or later we're going to get our shot at rebuilding it.

First, however, you must get past the thought that "agriculture equals farm." There are numerous other agribusinesses out there that also use ag-type equipment. It could be a fertilizer application company that uses those big three-wheeled Terra Gators we have all seen zooming across a field. It might be a cotton picker or a self-propelled swather such as a Massey-Ferguson 9000 Series with a Cummins 110 hp engine.

While every farm will have tractors, what other type of equipment will be found will depend somewhat on the part of the country you are located. Farms that raise grain, such as most in the Midwest will have certain types of equipment, while farms that grow vegetables will have different types of equipment.

One thing is for certain: sooner or later, you'll see that equipment in your shop should you decide to work on it.

In 2002, government figures show that the average farm in the United States was 441 acres, a fairly small farm. Overall, that number showed a decline of 86,894 farms in five years. Although the number of tractors increased by 222,300 during this same five years, the number of combines decreased by 75,597 from 1997 to 2002.

While much of the decrease in combine sales can be attributed to the decline of farms, I believe much of it is also due to the consolidation of farm equipment purchases.

While most farms can still afford a new tractor, at $300,000-plus the cost of a new combine, chopper or other high-dollar piece of equipment is harder to justify. Many farmers are joining forces and purchasing these expensive machines as a group, then using it as needed on each of that group of farms, thereby spreading the cost among several owners. While a single farmer might put just a few hours per year on a combine, the group will put on many more hours, the equipment will be much more productive and, happily, will need attention from a shop like yours much sooner.

So you might wonder where that leaves you. First off, the increase in tractor sales ensures that you have work now and into the future. There are still hundreds of thousands, maybe millions, of older models out there that need rebuilding or machine shop services on a daily basis. You just need to go out and find those jobs.

Much of this opportunity will come from relationships you cultivate (sorry) with implement dealers, particularly if you are a machine shop. The dealer may have the technicians to rebuild a motor, but they will most likely need someone to handle the machining work. If you're a rebuilding shop, you can still get work from the dealers because, except in winter, their technicians will likely be on the road repairing equipment for the farmers in the field, particularly in the spring and fall.

Complete remanufactured engines are getting more popular with many equipment dealers. Nearly every manufacturer has a reman program, whether it is implemented in-house, or contracted out to a rebuilder. If you have an ag repair center as a customer, it may be possible for you to develop a reman engine program. Perhaps you could even keep a few of the popular engines on the shelf ready to go.

Remanufactured engines are becoming popular for a few reasons, least of which is the time savings. While an engine can be swapped out in a day or two, a farmer or equipment owner may find that rebuilding his existing engine could take several weeks at least. And warranties are extremely popular selling points.

Of course, while you may get a lot of work from the dealers, don't forget the farmer who does much of his own repair work. He or she may come to you to purchase the parts, or machine work, but they'll often put the engine back together themselves, thereby saving much of the labor cost, especially if it isn't a time-critical piece of equipment.

Unlike everyday cars and trucks; the grain trucks, tractors, and other machinery used on the farm will continue to be used for 20, 30, 40 years or more and it is very common to see a tractor from the 1960s still used regularly on the farm. Even grain trucks can last that long on the farm because they are used relatively few hours per year. They may be used to haul seed from the seed dealer a few miles down the road in spring, then won't be used again until fall when they haul the grain a few miles down the road to the elevator.

Most shops are familiar with the older engines, but because a fairly well maintained engine should see at least 6,000 hours before needing some internal attention, it may take some time before you begin to see much work from the newer engines that are being used in ag equipment. But there are plenty of older machines still out there, including gasoline powered equipment. The biggest changes you will see will be in the names of the engines.

For instance, the John Deere 4020 has been around for nearly 50 years and was available with gas or diesel power. This model remains very popular today as does the International Model 1066, another tractor that is still in use on a daily basis at many farms.

In the past, nearly all manufacturers designed and manufactured their own engines. Thirty or 40 years ago, if you bought an International tractor, it had an International motor. It you bought a Ford, it had a Ford motor. These days, many of the manufacturers have merged

and with that, the engine manufacturing has changed.

John Deere is one of the only manufacturers left that also manufactures its own engines. Much of the reason for that may be, because of the increased emissions rules, the R&D costs are becoming a huge burden for the manufacturers. Many are joining forces or working with independent engine manufacturers.

John Deere recently unveiled its new Power Tech Plus 9.0L engines, coinciding with the January 1, 2006 date that the Tier 3 nonroad diesel engine emission regulations for engines rated at 175 to 300 hp took effect.

One of the EPA's concerns with nonroad diesel engines is that rebuilders have no incentive to check and repair emission controls that do not affect engine performance. Another concern is that rebuilders may have an incentive to rebuild engines to an older configuration due to real or perceived performance penalties associated with technologies that would be used to meet newer standards.

Currently, there are no regulations concerning the rebuilding of nonroad diesel engines other than the tampering provision. The EPA however is proposing to use the same regulations for nonroad diesel engines that was proposed to take affect in 2004 for heavy-duty highway use engines. Just a little more for shops to keep up with.

Hopefully, I haven't scared anyone away with the EPA talk because there are also some new and exciting opportunities coming your way. The compact diesel tractors have really taken off, and, depending on your location, could become a good market.

This market includes small tractors in the 20 to 60 hp range. They are extremely popular with homeowners with two to 10 or more acres. They may have horses, or just a large yard that they take great pride in. If you are located near a metro area where people are building homes just outside of a large city, you are going to see many of these tractors in the yards around you. You'll also see them pop up at the rental yards.

It's all good news because sooner rather than later, those tractor engines will be coming to you for work. We all know how abused equipment can get at the rental yards; more than likely that is already a good source of work for your shop. And think of the homeowner. Remember, he's the same guy who drives that car or pickup that you have worked on already. Can his new tractor be far behind?

Another segment of the agricultural market is restoration. Many shops keep plenty busy, just rebuilding the engines from 60- to 70-year-old antique tractors. Many of these tractors are restored to better-than-new condition and while many of the owners have the expertise for some of the restoration, most need to seek a professional for the engine machining and rebuilding.

This market has seen tremendous growth in the past 20 years and continues to grow. Many of these tractors are used in antique tractor pulls and their owners spare no expense in their attempts to win. I have heard figures of $25,000 and more spent on competition pulling engines in John Deere B's and Oliver 88's. Many of the shops that specialize in these pulling motors claim a 12-month backlog.

While the collectors and pullers continue to collect their old tractors, there is one area that has seen some decline. In the past, before the compact diesel tractors came along, anyone with a little property, a "gentleman's" farm, or small orchard, would have a small utility type tractor for mowing or plowing, or just general work around the property. These were likely to be International Cubs, Allis Chalmers C's or WD 45's, or the Ford 9N.

Many shops used to buy up these small tractors, fix them up, then sell them for a nice profit. That market is pretty much gone now as these tractors are getting harder and harder to sell. Everyone is buying the new compact diesels.

The biggest change in the last 20 years or so however, is in the engines. For the most part, any engine in a tractor, or other ag machinery over 20 hp is most likely a diesel. The new engines are built better, they're more efficient, and they last longer; however, they are still built the same way internally.

When you get one in the door, you still need to perform the same types of operations as in the past. You may still need to grind the crank, hone the cylinder, or replace a piston, but you also need to determine why it failed, or at least give your customer an idea why, so they can get it checked out before they ruin another engine.

While in the past you may have had a rod, piston, or maybe a valve spring fail, these days the parts are so much better that the majority of failures occur in the electronics and fuel systems. It may look like a mechanical failure, hopefully your experience will guide you.

The agricultural market is large and diverse and you will see machinery that may be just a year or two old; you will also see tractors from the 1930s or older, and everything in between. While cars and trucks are practicably "throw-away" farm machinery, particularly tractors are a lot like the famous Bunny. With a little of the right care, they just keep going, and going, and going.

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