



# MAINTAINER

Issue Topic: Certified Overhaul Program

## Get a Certified Overhaul for Over-all Performance

A few years ago, Waukesha Engine introduced its Factory Certified Overhaul Program. Broad in scope, it encompasses many components including parts, procedures, tools, technician training, documentation, calibration and more with one goal in mind: to return to you an engine capable of “like new” performance, and to provide you with an Express Limited Warranty after the work is done.

The program requires that a distributor’s facility and personnel performing the engine overhauls be certified, and that a specified minimum amount of new Genuine Waukesha Service Parts be used in the procedure.

### Unique Program Requirements

Certified Overhaul Program requirements are well thought out and are to be rigorously followed. They include:

- The overhauls shall only be performed at a Waukesha-certified distributor facility;
- Personnel performing factory-certified overhauls shall be factory-certified technicians;

- A defined number of new, genuine Waukesha service parts is required;
  - All work, calibration, procedures and training shall be documented and recorded in a specified manner and retained for a specified time period.
- Each facility performing factory-certified overhauls has developed a quality plan to maintain the necessary standards, equipment and tools. In addition, facilities that have been certified by a third-party quality system such as ISO or QS, can use these procedures where they are in alignment with the Waukesha Engine program.

### Technician Component

Each technician is required to attend and receive a passing grade (80% or better) in the applicable classes conducted through the Waukesha Engine Product Training Center, and must demonstrate the knowledge and ability to measure critical parts and clearances per the overhaul manual.

The technicians must have access to the current technical data and manuals of a particular engine line

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## What Happened Here?

### No Fouling Around!

**After months of solid operation, a VHP™ engine began to run erratically. The operator noticed the oil consumption began to increase and number 2, 3 and 4 cylinders on the left bank were misfiring.**

**The operator shuts down the engine and examines the spark plugs. The plugs appear to be oily. He checks the engine log and finds that these cylinder heads were just replaced a few months ago from a stock of heads re-done by a third-party rebuilder.**

**He calls in the Distributor Service Technician, who bore scopes the cylinders. The cylinder wall checks out fine, but the top of the piston crown is very oily. The cylinder head deck looked oily and some valve guides appear worn and full of carbon. What happened here?**

**Answer on Back**

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### Inside:

**Find out how the certified engine overhaul was the right choice for a satisfied user.**





*Many distributors have invested in special tools such as this head builder.*

***Each overhauled engine is rebuilt by certified mechanics using Waukesha parts.***

## **Distributors, Users Agree On Certified Overhaul**

Even a quality-built Waukesha engine will need an overhaul during its long service life. Typically the top-end will require it first, followed by a total engine overhaul at some point down the road.

While a top-end rebuild can be done on the site where the engine is located, total rebuilds usually require the engine to be transported to a distributor's shop, where skilled personnel have access to proper tools and other equipment.

But why should you, as an engine owner, invest the extra expense of participating in the Factory Certified Overhaul Program? How can it benefit you and what can you expect over the life of the engine? The answer is a lot, claim Waukesha Engine Distributor personnel participating in the program along with an owner of a Certified Overhaul engine.

According to Ronnie Bowles, District Manager for Waukesha Pearce in New Iberia, LA, the certified program is a "hidden" value.

"If the program works the way it should, then the engine user won't even be aware of it," he explains. "A certified engine is supposed to perform like a new one, and it comes with a warranty. The result is extra peace of mind for the owner. An engine that's certified should provide long run times and high availability and therefore is much less of a daily concern than one that was not rebuilt correctly and needs constant monitoring or breaks down often.

"Another aspect of the program is that small users with only a few engines can enjoy the same quality and lack of worry as do our larger customers. Often, smaller firms might take their engine to a local 'job shop', where the engine is rebuilt piecemeal with 'will-fit' parts. They think they are saving money. But for not much more, they can get a certified engine that's the same as the ones used by the large companies."

Another advantage of the program is the time element. Often, several rebuilt Certified engines are on the shelf, ready to go. "This is especially important in natural gas production, where time really is money," stresses Ernie Williams, a service supervisor at Reagan Equipment Company's Harvey, LA, location.

"Some users are worried that they are not getting their own engine block overhauled and returned, but the ability to get back up and producing quickly with a Certified engine quickly overcomes that concern.

"They know that to be certified the engine has to meet some very rigorous criteria, and the extra advantage of the additional warranty is a real plus along with the fact that the engine has been rebuilt, using Waukesha parts, done by certified mechanics. Besides, there's not that much price difference for a Certified engine over rebuilding one that the customer has trucked in — and the time element can quickly make this a non-issue where uptime counts."

The upgrade requirement that's built into the program may seem more costly at first glance, as does the fact that all components are new, not just cleaned and checked for condition and tolerances. But the cost is offset over the extra life expected out of the engine, Williams points out.





*Above: Another benefit of the Certified Overhaul Program is that rebuilt engines are often “on the shelf”, ready when needed.*

“For example, the cylinder heads on the Certified engine offer the same performance and longevity as ones new from the factory,” he says. “The cylinder head castings aren’t new, but they’re checked before all new kit components are inserted. So it’s a new head in an old casting idea. If a head is discovered to have cracks, it’s not welded but returned and core-charged against a new one.

“We also examine the gear train and all accessory drives, as well as change all the bearings, which often is not done if you’re just re-lining cylinders or bolting on new heads.”

Reagan Equipment in Louisiana was the first Waukesha Engine Distributor to sign up for the Certified Overhaul program when it began two years ago, according to Larry Cooley, Branch Manager, Reagan Equipment Co., Harvey, LA.

“We had a similar program in place that Reagan Equipment began with Waukesha back in the ’80s, so it was relatively easy for us to get into the Certified program.

“It’s one more way for us as a Distributor to prove to our customers that we’re on top of our game and we know what we’re doing. It’s something extra we can bring to the table. As part of the program we get all the latest service manuals and technical updates and tooling on all the engine models as well as tooling calibration.”

### **Recommended by Satisfied User**

Scott White is the production foreman at Robinson’s Bend Operating Company, Buhl, Alabama, a coal seam methane site. Average daily production there is 17 million cubic feet. Supervising 17 field service personnel does not leave him a lot of

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— Ronnie Bowles,  
District Manager,  
WAUKESHA PEARCE  
NEW IBERIA, LOUISIANA

time to worry about how his engines are performing. Therefore, he decided to try the Certified Overhaul program.

The result? "I've had real good luck with the engines, absolutely no complaints," he says.

The engine chosen for the overhaul program had 68,000 hours and had been running continuously since it was installed four years earlier. The VHP™ L7042GL had a top-end overhaul along the way and then it was time for a total overhaul. The engine received a Certified Overhaul at the Reagan Equipment branch in Harvey, Louisiana.

"I started calling around and seeing what our options were, and found we could get another rebuilt engine or have ours rebuilt. Because we had time on our side, we chose to have ours overhauled. We are very pleased with our local distributor, who explained the benefits of the Certified Overhaul program.

"They recommended the program and we felt the price was right, especially with the warranty. The great

part is because the program is already in place it didn't take any longer to get a certified engine than to complete a standard overhaul. We were pleased with the turnaround time.

"I especially like the fact that it's returned as a zero-hour engine with new tolerances and many new components.

"We have 11 Waukesha VHP L7042GL engines on site and will consider the Certified Overhaul program when the time comes for a total overhaul. I would recommend the program to other Waukesha engine users." ■



*Above and below: Certified Overhauls are thorough and performed in a Certified facility by Certified Technicians.*



## Current Manuals Can Make a Difference

Waukesha's Certified Overhaul is done:

- by Factory Trained and Certified technicians
- at a Factory inspected Certified facility
- with Factory specified tools and equipment
- according to factory authorized current Manuals and Service Bulletins. All of these measures are taken to insure the overhaul is done right!

Parts, materials and methods to service or rebuild an engine are ever changing and improving. The steady stream of new Service Bulletins and Manuals from us are evidence of that. To add to the challenge, Service Bulletins will in time become obsolete when new Manuals are released.

Therefore, even if you have all the current bulletins, but are using an old, obsoleted manual, you will be missing some information.

What could that "missing" information cost you? Probably a lot more than a new manual.

To further insure the job you are doing is done right, make sure that you are using current Manuals and Service Bulletins. ■



## Technology Partner Program Provides Information

An easy mistake anyone can make in servicing an engine is simply not having all of the available information. Without it, you can miss out on the correct procedure or a "new and improved" part. In either case, it costs you time and/or money.

This simple mistake can easily be avoided by becoming a Technology Partner.

Simply provide your mail and/or e-mail address, phone/fax numbers to your local Waukesha Distributor, Power Partner or Regional Manager and ask to become a Technology Partner.

This will give you electronic access to a whole range of information including the current Service Bulletins, Operation and Maintenance Manuals, Parts Manuals and Product Training information and schedules.

The best part is – it's free!

What are you waiting for? ■



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and must demonstrate knowledge of them. Special tools must be on-hand and kept orderly and in good condition. Any tooling and gauges required must be calibrated to ensure accurate readings and records kept of their accuracy.

All measuring and test equipment must be calibrated and any necessary adjustments completed and documented. The test equipment is identified with a calibration sticker.

## Replacement Parts Covered

Annual internal audits and bi-annual factory audits assure both you and Waukesha Engine that overhauled units and components are returned to factory specifications. Once a distributor facility is certified, a special certificate is provided for display at the distributorship.

Replacement parts are also covered as part of the program. For the valve overhaul, these include: replacing of all wearing parts, guides, valves, seats, seals and gaskets; valve springs are tested and replaced as needed while head castings are hot tanked and inspected to factory standards.

Certified Major Overhauls include the valve requirements listed above plus: bearings, bushings, pistons, liners, rings, gaskets, seals, O-rings and ball bearings.

As part of the Certified Overhaul program, the following components are rebuilt using genuine Waukesha parts: oil pump, auxiliary water pump, turbocharger, admission valves and carburetor(s). In addition, the jacket water pump is upgraded to the current double-row bearing model. The crankcase, crankshaft, connecting rods, gears, manifolds and other major castings and forgings will be inspected to factory tolerances and either be replaced or reconditioned to meet factory specifications.



As a final step, the engine is idle-tested at the repair facility, and site-tested when re-commissioned. All measurements and readings shall be within the specified acceptable range and recorded as specified. The Certified Overhaul Facility is responsible for maintaining documentation and records pertaining to the Program. ■

## What Happened Here?

### Answer: Proper machining, pressing provides cure to oil fouling.

The distributor technician pulls a cylinder head. The cylinder head was inspected and disassembled by the technician. First he inspected the valves and valve guides. The guides showed signs of mis-machining. Also, the guide was not pressed-in straight and the valve stem seal was damaged. This caused the guide to let excessive oil in, thereby fouling the spark plugs.

The solution? All new valve guides were pressed into the head from the valve-seat insert side of the cylinder head. A 20-ton hydraulic press and valve guide remover / installer tool were used to press the guides to the correct depth. Next, the technician used the correct reamer to ream the valve guide to correct inside diameter. The result? The excess oil fouling problem is gone!



## SERVICE PROGRAM Certified Overhaul



### • Factory Certified Facility

The Distributor's facilities are inspected by Waukesha Engine personnel to insure that your engine will be overhauled to meet stringent, Waukesha Engine Factory Certified Overhaul standards. This audit verifies that factory-published technical data is both current and readily available. Tools, equipment, and gauging are inspected for proper functionality and current calibration.

### • Factory Trained Technicians

Overhauls can only be performed by, or under the supervision of, Waukesha Factory trained and certified technicians. These technicians attend and pass technical courses offered by Waukesha's Training Facility. The technicians must pass annual recertification tests to retain their factory certification.

### • New Parts Requirements

Waukesha requires that new parts be used for each certified overhaul. This eliminates the possibility that a critical component may be simply cleaned and reused. By requiring new parts, human subjectivity and margin for error are eliminated, ultimately producing a superior overhaul.

### • Documentation

The same engine log sheet used by Waukesha Engine when the engine was first built is used to record all of the required engine specifications.

### • Extended Warranty

Certified Overhauls receive an extended warranty for both service and parts. The warranty period is extended to 18 months on specific critical wear items.



Your Distributor's facilities, tools, equipment and gauging are all inspected by Waukesha Engine personnel for proper functionality and current calibration.



**Call (262) 547- 3311  
For Details!**



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