

In 1926 the Stihl Engineering Consultancy was founded by Andreas Stihl in Stuttgart Germany. Andreas, an ambitious mechanical engineer, had first conceived the idea of a portable saw some years earlier as he witnessed the strenuous work performed by men in saw mills as they moved logs to stationary saws for processing.

In 1927 Andreas' first chainsaw, an electric saw weighing 116 lbs, was introduced. By 1929 Stihl was ready to unveil its gasoline powered chainsaw weighing 139 lbs and delivering 7.5 HP.

Today Stihl has 5 manufacturing sites around the world, the largest of which is located in Virginia Beach, Virginia. This facility employs 2000 workers and in 2006 had produced a record 3 million units consisting mainly of chainsaws, grass trimmers, and blowers.

Stihl is still a privately held and family run company. Stihl equipment is available through a network of independently owned dealerships that pride themselves on salesmanship and service. Stihl dealers give priority toward communicating the proper use and maintenance of the equipment after the sale.

Some items to be aware of when maintaining your saw are:

### **PROPER SHARPENING**



*When sharpening your chain be sure to use the appropriate file size and hold it at the correct angle to the cutter when filing. Dull or wrong filing angles can cause extra load on the engine, clutch, and most importantly you! Be sure to also dress the depth gauge (rakers or drags) when you sharpen the chain as well. Consult your local dealer for filing kits that correspond to the different chain pitch. These kits include the appropriate sized file, file guide, and depth gauge file. If your saw is producing fine dust instead of chips, it's time to sharpen the chain. Fine dust can quickly clog air filters and cooling air access.*

### **SPROCKET REPLACEMENT**



*If the sprocket is worn past its normal use it will cause vibration and premature chain wear. Wear patterns greater than twenty thousandths would indicate its time to change the sprocket.*

### **BAR ROTATION AND PROPER CHAIN TENSION**



*Chains too loose will cause divots under nose of bar, chains too tight may cause premature bearing and seal life. One way to tighten a chain to proper tension is to lift the saw by the nose of the bar so that the edge of the rear handle is the only part of the saw touching the ground. Now adjust the tension of the chain until all distance between the bar and chain closes up. At that point tighten the bar nuts. You can get twice as much life out of the bar by turning it over periodically. Be sure the saw is OFF when making adjustments.*

### **AIR FILTER MAINTENANCE**



*A dirty air filter can contribute to bogging the unit down and poor performance. Dirt left on air filters can also cause dirt ingestion. Dirt in the engine will lead to premature piston, rings, seals, and bearing failure. Air filter maintenance and periodic replacement is very important.*

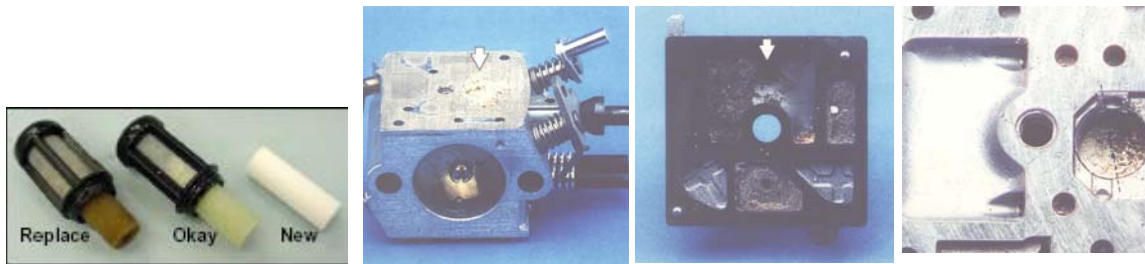
## COOLING AIR ACCESS



*If your saw has compacted sawdust or dirt present near air intake areas, the amount of cooling air allowed to flow across the cylinder will be limited and may contribute to overheating of the engine and piston seizure.*

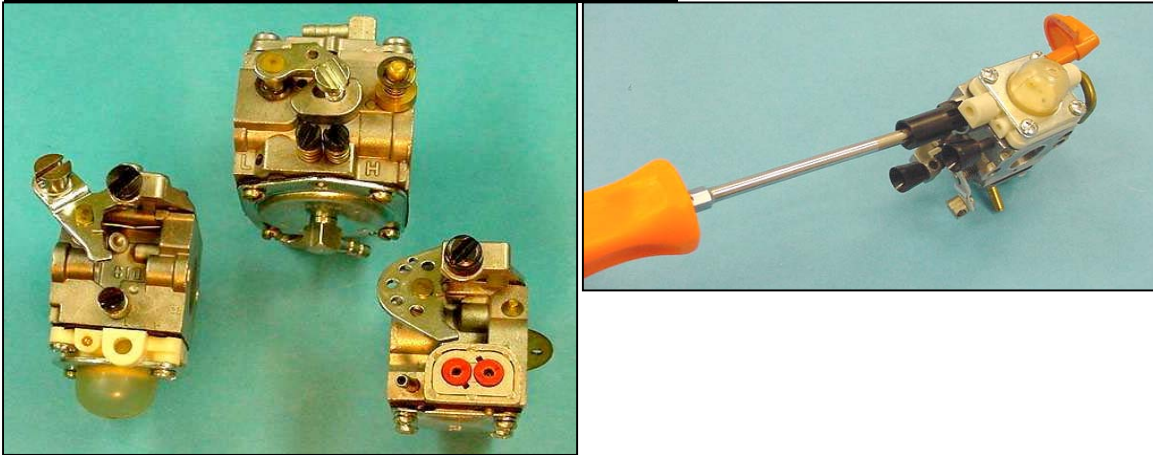
*It is important to keep the saw clean and make sure the cooling air intake passages and cooling fins on the cylinder are clear from obstruction.*

## FUEL SYSTEM CONTAMINATION



*Dirt that is allowed to fall into the fuel tank while refueling will restrict the fuel supply. Areas of restriction can be the fuel filter (should be replaced at least once a year) or in the ports of the carburetor itself. Be careful not to allow dirt or sawdust to fall in the fuel reservoir when refueling.*

## **IMPROPER CARBURETORS ADJUSTMENTS**



*Improper field adjustments made to carburetors can lead to other issues and failures. Factory settings are important to maintain while the saw is in the field due to internal jet and port sizing as well as emissions considerations. Improperly set carburetors can lead to lean fuel-air ratios, resulting in lack of engine lubrication and ultimately premature failure. If there is a concern of carburetor contamination or adjustment take the unit to a qualified service technician.*

## **FUEL MIX RATIO NECESSARY IS 50:1**



*It is important to run the saws at a 50 part fuel, 1 part oil mix ratio to insure proper operation. What happens in the field sometimes is the first filling of the gas can is at 50:1, but subsequent fillings of the gas can are mixed rich. The gas can, for example, may not be completely empty when re-filling. One appropriate sized bottle of oil is poured into the gas can but because the can wasn't empty the correct amount of gas for a 50:1 ratio is not able to "fit" into the can. The operator simply tops the can off and goes. The result is a rich mix. The more this is done the richer the mix will become in the can. When the fuel mix is transferred to the saw it causes running issues. The mix will lead to "coking" of the oil in the combustion chamber. This can result in scoring of the piston and cylinder requiring replacement. Excessive oil in fuel mix can also plug up the ports in a carburetor resulting again in lean operation.*

## **WINTER/SUMMER OPERATION**





Most all Stihl saws have a winter summer shutter. Not all shutters are operated in the same manner nor are they all in the same location. The shutter in the summer should be closed so that the hot air from the cylinder does not pass into the carburetor box. In cold conditions the shutter can be opened to allow warm air to enter the carburetor box in order to prevent icing of the carburetor. The MS361, pictured above, is currently in the summer mode. The owner's manual instructs to change the shutter from summer to winter operation at temperatures below 50 degrees F. At temperatures above 68 degrees F return the shutter to the summer position. Check your owner's manual for details.

Recently Stihl has launched the professional series MS441 chainsaw that has many new features. Some of the highlights are: a new Stratified Engine that delivers high power while maintaining low emission levels, an extremely high efficient filter system which doubles the time between air filter cleaning, and superior anti-vibration system that lessens operator fatigue caused by vibration.

