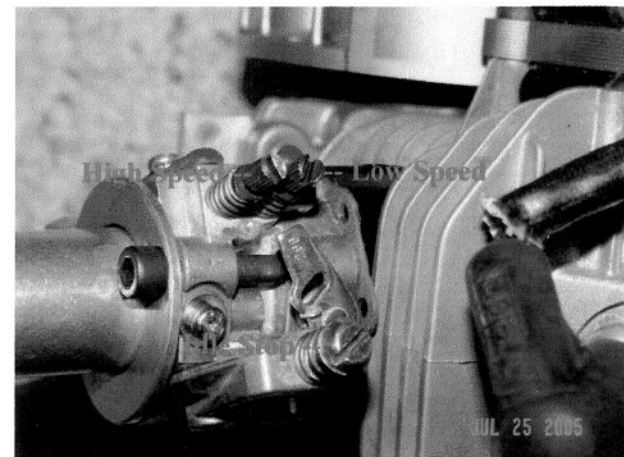
Brillelli 46cc Specs-
Displacement- 46cc / 2.8 ci
Benchmark Prop- Xoar 22 X 8 prop at 6550 RPM
Weight RTF- 56oz
RPM Range- 1800 - 13500
Suggested Props - 20x8, 20x10, 21x8, 22x8.
Fuel Oil Mix- 40:1 for break-in, 50:1 thereafter..

Thank You for your purchase of an Brillelli 46cc engine. This 46cc engine will provide you with years of flying if maintained and tuned properly. We will guaranty this engine against any defects in materials or workmanship for a period of 1 year from date of delivery. This does not include crash damage, improper tuning, or improper fuel mixture.

ENGINE ADJUSTMENTS
• Always make high and low speed needle adjustments with the engine shut off.
Also make sure the ignition is OFF.
• Adjust the needle marked "H" for high speed RPM.
Adjust the needle marked "L"
for low speed RPM.
A. Normal high and low-speed needle settings:
It is not necessary to change the needle settings if the engine runs smoothly.
Normally only the "H" needle will need adjustment from time to time and only by
a small amount.
H: Open the needle 1 3/4 turns from the closed position (±1/4 of a turn in winter).
L: Open the needle 1 3/4 turns from the closed position (±1/4 of a turn in winter).
B. Idle adjustment:
Note: Do not confuse the idle screw with the low speed needle "L". The idle screw
physically adjusts how much the carburetor valve can close. The low speed needle
"L" adjusts the gasoline to air mixture when the engine is running at low rpm. If
your engine appears to work correctly except that the low rpm are not as low as
you want them to be, then adjust the idle screw. If your engine behaves erratically
at low rpm, then adjust the low speed needle "L". When adjusting, turn the screw
about 1/8 of a turn each time. A dirty plug will make it difficult to adjust the idle
RPM. Follow the recommended procedures if any of the following happens:
Problem:
1. The engine hesitates when accelerated rapidly.
2. The RPM increases at idling.
3. The engine stops when the throttle is moved from high to low.
Solution:
Your low speed needle "L" is too lean. Open it up about 1/8 turn and try again.
Problem:
The idle is not steady.
Solution:
Your low speed needle "L" valve is too rich. Close it 1/8 turn and try again.
C. High Speed Adjustment:
The high speed rpm and transition performance is adjusted with the high speed
"H" needle valve. When adjusting, turn the screw about 1/8 of a turn each time.
The position of the "H" needle will vary according to air temperature and field
elevation. If your engine is running smoothly, then do not adjust this needle valve.
Follow the recommended procedures if any of the following happens:
Problem:
1. Engine stops at full throttle.
2. Engine hesitates when accelerated rapidly.
3. The engine will not come up to full RPM at full throttle.
Solution:
Your high speed needle valve "H" is too lean. Open it up 1/8 turn and try again.
Problem:
1.Your engine does not reach full rpm.
2. Carbon build-ups appear consistently on your spark plug.
Solution:
Your high speed needle valve "H" is too rich. Close it up 1/8 turn and try again.



PLEASE READ ALL INSTRUCTIONS BEFORE RUNNING YOUR ENGINE !!

WARNING ! Model aircraft engines are dangerous. It is your responsibility to insure proper maintenance is performed and safety guidelines are followed. Brillelli Model Aircraft Engines LLC is not responsible for any damage or injury that results from improper maintenance and/or improper handling of your new engine. It is fully your responsibility to insure the proper use and application for your new engine. Be safe and have fun.

SAFETY TIPS AND WARNINGS

- **Always use a balanced spinner and a balanced prop. An unbalanced spinner and prop combination will cause high levels of vibration and may cause the propeller shaft to break.**
- **Always use a lightweight spinner on your engine. Lightweight spinners are considered to be those with a cone wall of 1mm or less. Heavy spinners could cause the propeller shaft to break.**
- **Securely tighten the spinner and prop on the engine to prevent it from being thrown off the engine while running. Use the high-grip prop washer behind the prop.**
- **Never use a prop that has hit the ground. Even though it may look good from the outside, it may be cracked on the inside which may cause it to disintegrate while in use. Do not use a nicked, cracked or split propeller.**
- **Keep foreign objects away from the propeller. Make sure that nothing can be "sucked in" by the propeller. Never start the engine on loose gravel or sand.**
- **Keep onlookers away from the running engine, especially small children.**
- **Do not attempt to stop the engine by throwing anything into the path of the propeller.**
- **Make sure the fuel line is well-secured to the engine and to the fuel tank so that it won't come off in flight.**
- **Do not use silicone fuel line because it will be attacked by the fuel. Use vinyl or neoprene rubber fuel line.**
- **Always secure the fuel line away from the cylinder head. The engine's heat can damage the fuel line.**
- **Never touch the engine after a run. The engine will be hot and it may burn you.**
- **Before transporting your model, remove all the fuel from the fuel tank and fuel lines.**
- **Always use high-quality oil intended for 2-stroke engines.**
- **Use only low octane, alcohol-free gasoline. The carburetor diaphragm will gradually deteriorate if you use gasoline with alcohol (ethanol, gasohol, etc.). You will need to replace the diaphragm in about 80 hours of operation if you use gasoline with alcohol.**
- **Muffler pressure to the fuel tank is not required.**

- **Do not install your throttle servo or kill switch servo inside the engine compartment.**
- **Doing so could cause radio interference. Install all electronic radio devices at least 305mm [12"] away from the engine. The throttle pushrod should be non-metallic.**
- **In case the engine is not to be used for more than a month, drain the fuel tank and remove any fuel from inside the carburetor. Do this by running the engine at idle until it quits by running out of fuel. Keeping gasoline inside the carburetor over an extended period of time will damage the diaphragm valve and clog passages inside the carburetor.**
- **Because the carburetor is more complicated than those used in glow engines, keep the fuel clean by using a fuel filter. Use a filter intended to be used with gasoline engines. Metal filters intended for glow engines are too coarse and will not screen out finer particles. Always filter your fuel by using an appropriate filter before putting it into the airplane's fuel tank.**
- **Do not operate the engine in a closed room or where ventilation is not adequate.**
- **Gasoline is extremely flammable. Keep it away from an open flame, excessive heat or sources of sparks. Do not smoke near the engine or the fuel tank.**
- **This engine was designed for use in a model aircraft. Do not attempt to use it for any other purpose.**

Your new Brillelli engine has been thoroughly tested before leaving our facility and should operate without any trouble. If you do have any questions or problems please feel free to contact us via email at scott@scottellingson.com or via phone at (320) 249-7420.

You will notice on the carburetor, we have already installed a CNC'd throttle arm for easier carburetor hookup. Also we have installed a static nipple. The nipple is used to prevent erratic running in the air caused by uneven static pressure to the carburetor. You need to simply run a hose from the nipple into the fuselage to give the carburetor an even static pressure.

Please Read

EI Precautions-

CH Ignition units are designed to be run on a 4 cell NiCd/NiMh battery only. If a 5 cell NiCd/NiMh or a 2 cell LiPo battery is used, a 5v regulator is required.

Never turn on the EI without a plug in the cap. Doing so will burn out the hall sensor.

Do Not mount the EI with the mount lugs on the unit. Mount the EI unit like you would a receiver with foam and Velcro.

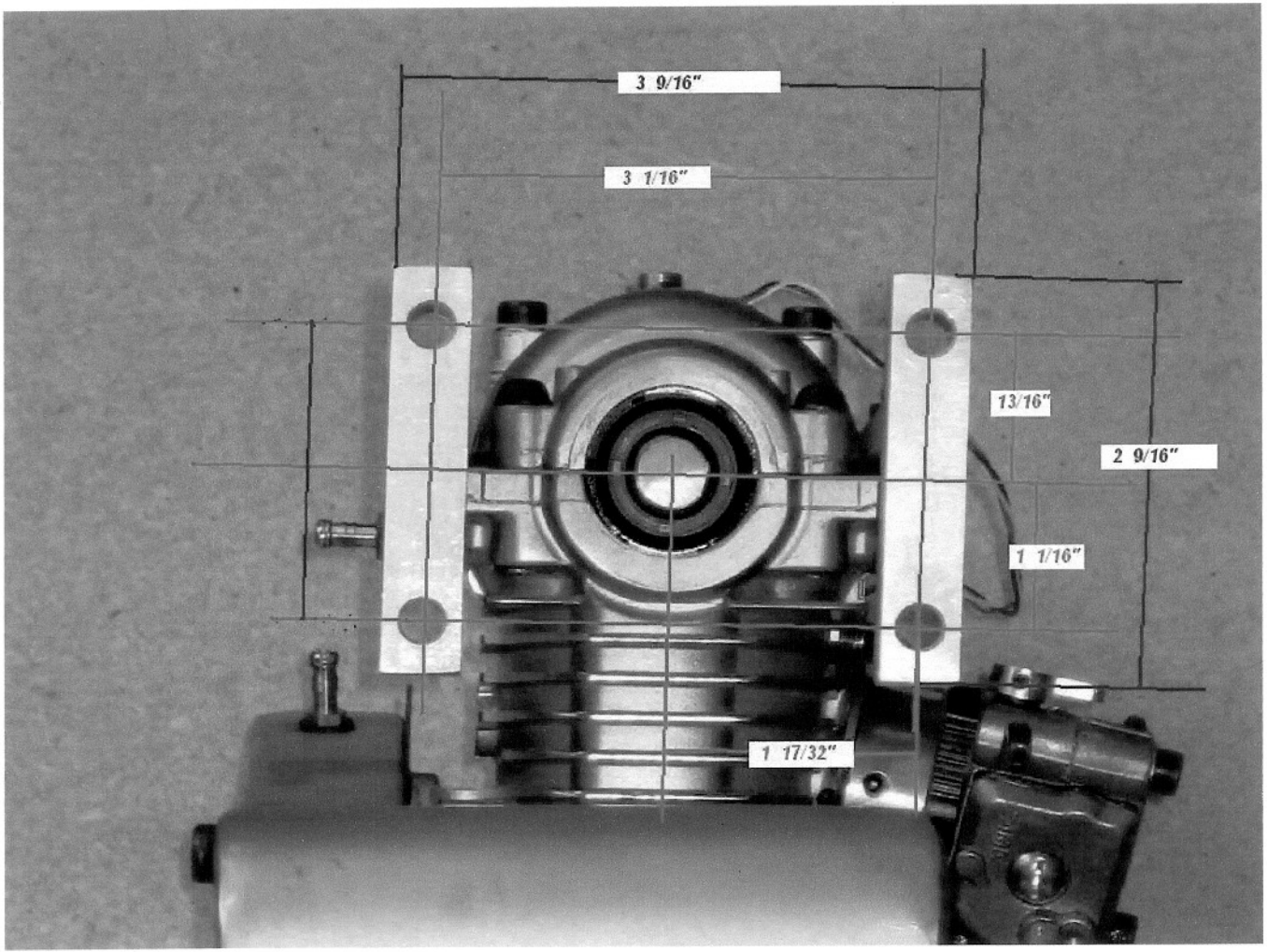
Engine Precautions-

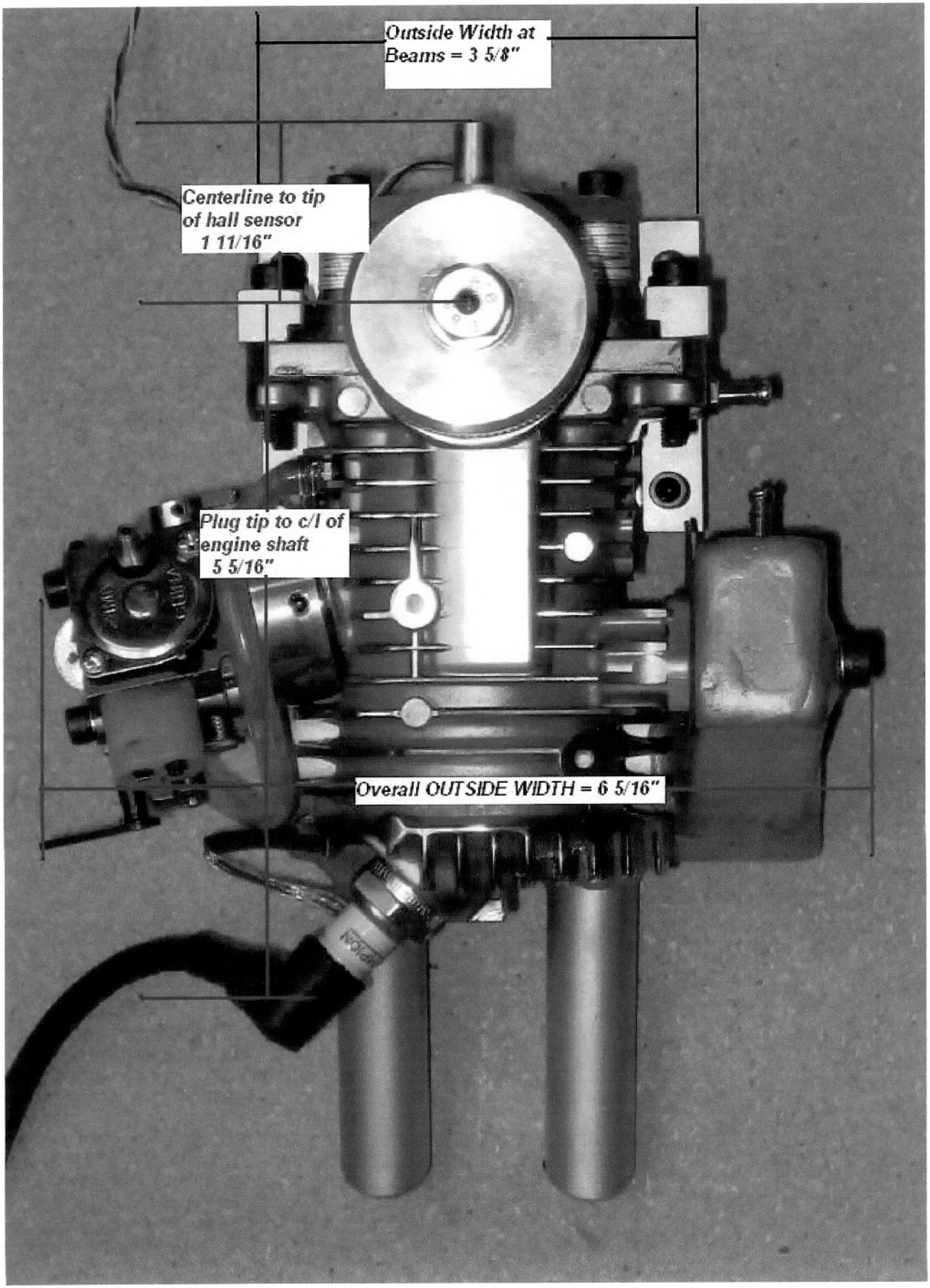
NEVER run an oil mix less than 50:1. Lower oil contents such as 80:1 will cause engine damage and void the warranty. Run at least 40:1 for break-in. Break-in mix should be used a minimum of 2 gallons. 4 gallons is recommended.

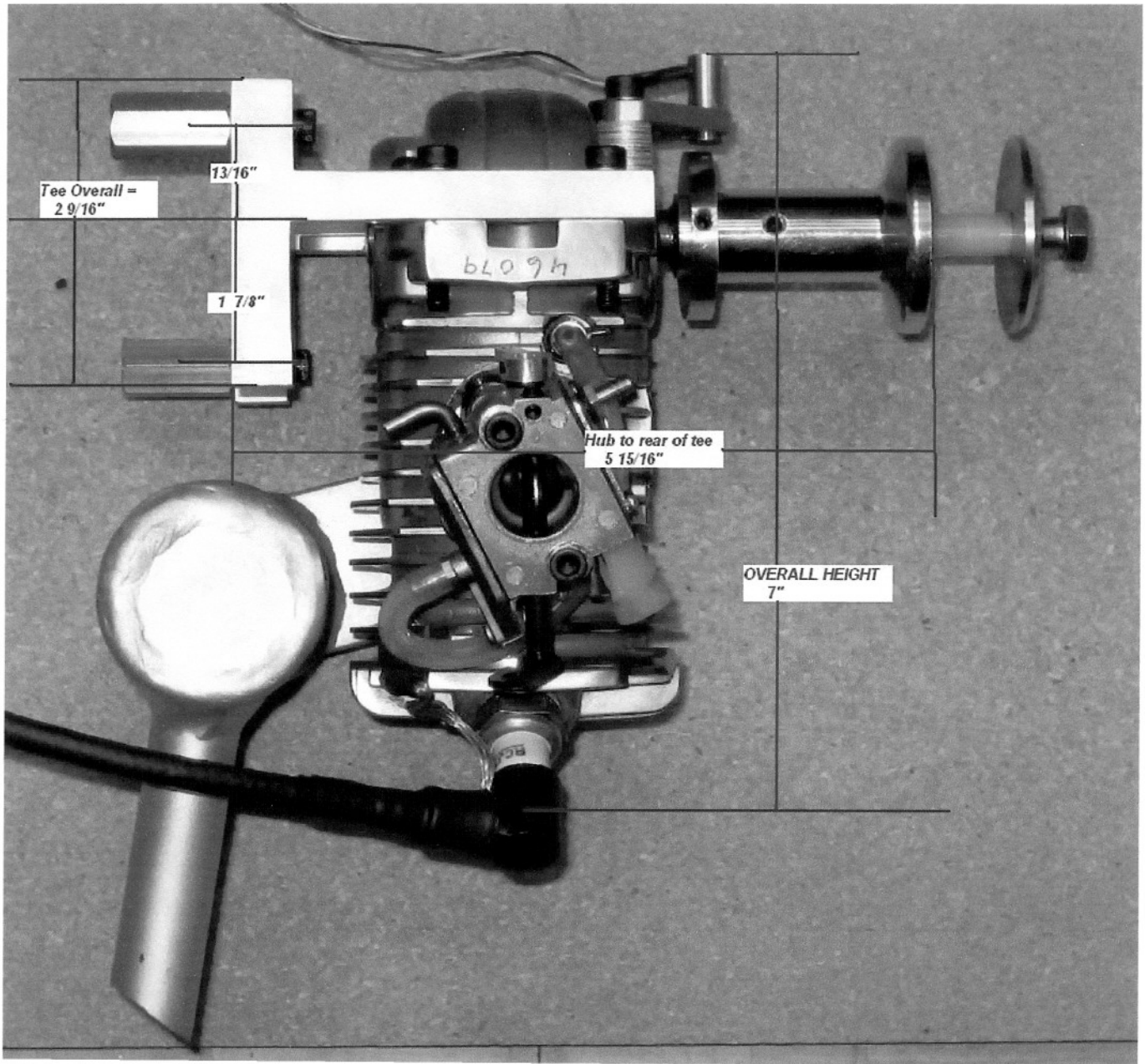
Use a good quality oil such as Penzoil for aircooled engines for break-in.

After break-in you can continue to use Penzoil at 50:1, or a good synthetic oil such as Bel-Ray , Yamalube R2, or Mobil 1 2T.

It is not good to run a gas engine excessively rich during break-in like you would a glow engine. A ***little*** rich is OK.


3 9/16"
3 1/16"
13/16"
2 9/16"
1 1/16"
1 17/32"


Outside Width at Beams = 3 5/8"
Centerline to tip of hall sensor 1 11/16"
Plug tip to c/l of engine shaft 5 5/16"
Overall OUTSIDE WIDTH = 6 5/16"


13/16"
Tee Overall =
2 9/16"
1 7/8"
Hub to rear of tee
5 15/16"
OVERALL HEIGHT
7"