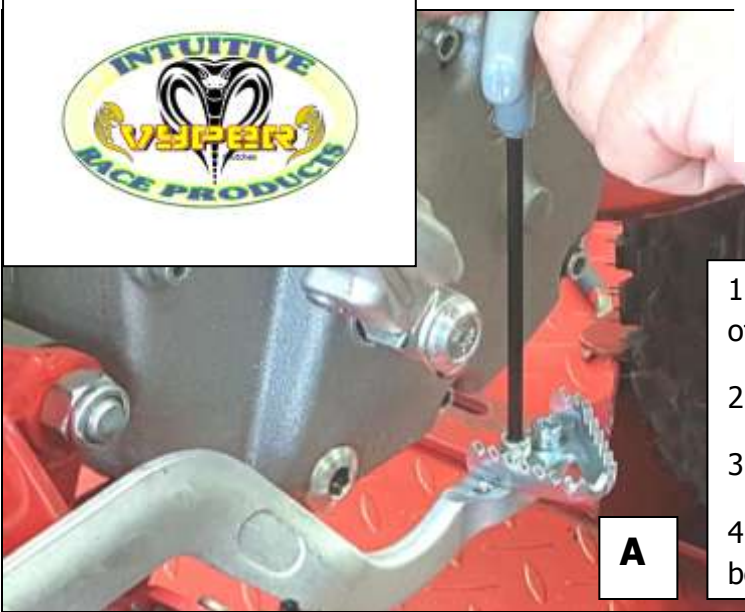


# Vyper Manual

920430 Clutch fits Cobra MX 50cc 2016-18

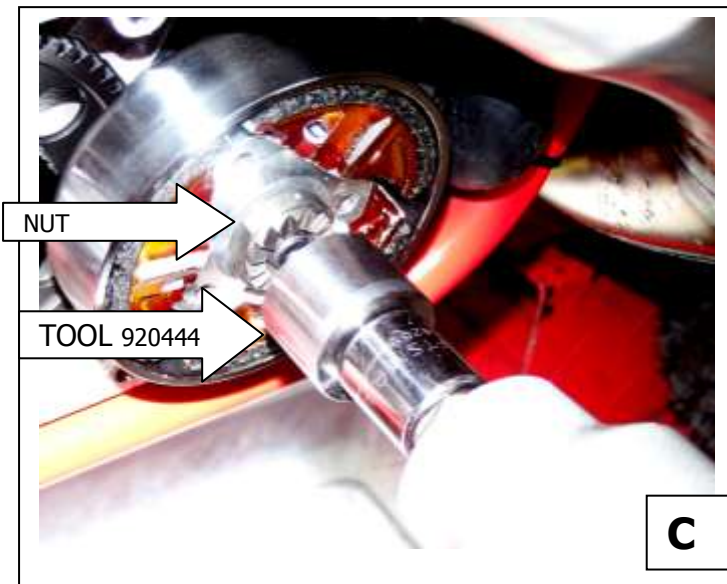
Patent D 487,760S

2018 B



## Removing Shoe Clutch

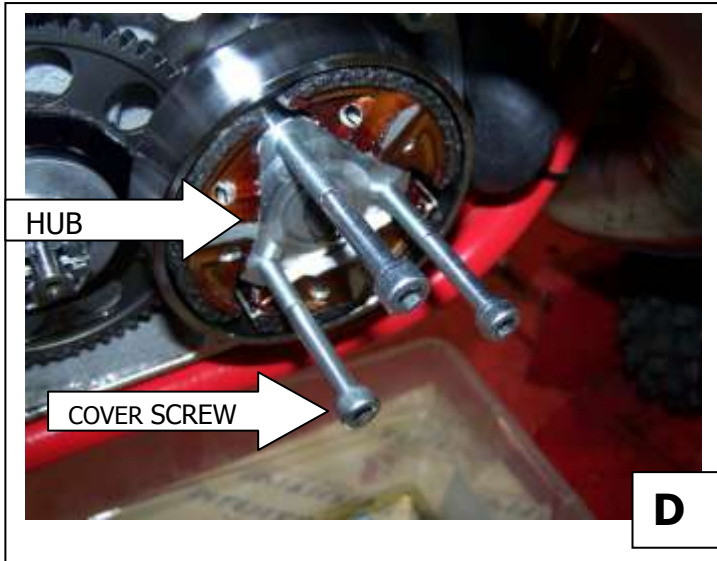
1. Remove brake pedal end to allow easy removal of clutch cover...**Picture A**
2. Drain clutch fluid
3. Remove cover ... **Picture B**
4. Save cover gasket ...reuse if not compressed below .050" thick



5. Remove Cobra STARTER NUT with special tool #920444 or Cobra factory tool helpful... save nut

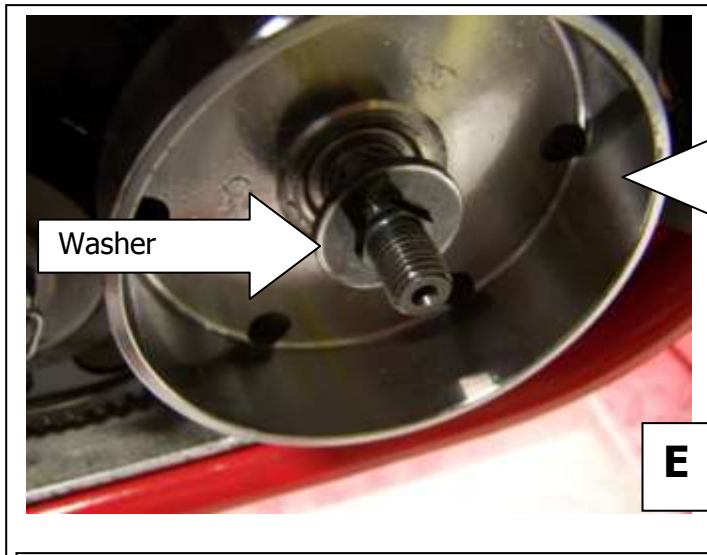
Impact wrench beneficial

... **Picture C**



6. Remove hub & shoe assembly...installing 3 M6 x 55 screws from cover will aid in removal ...it may be necessary to thread the screws against drum to force hub off shaft

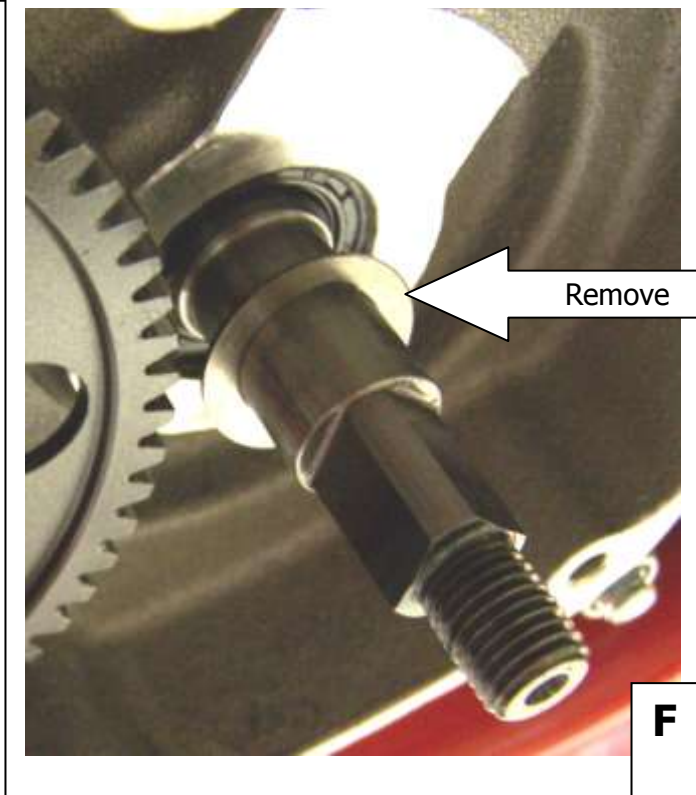
**Picture D**



7. Remove washer

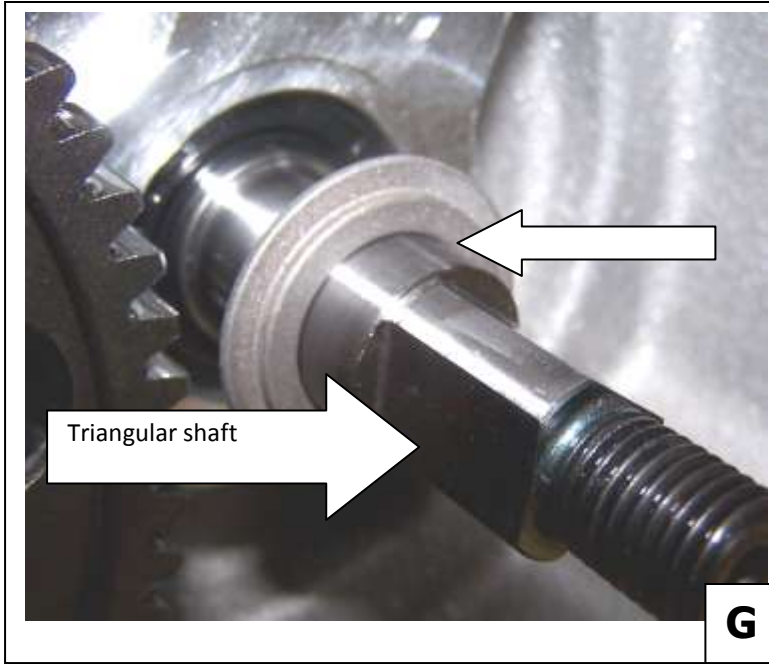
8. Remove Drum

**Picture E**



9. Remove thin factory thrust washer....note often this washer will be stuck to the drum from oil adhesion

**Picture F**

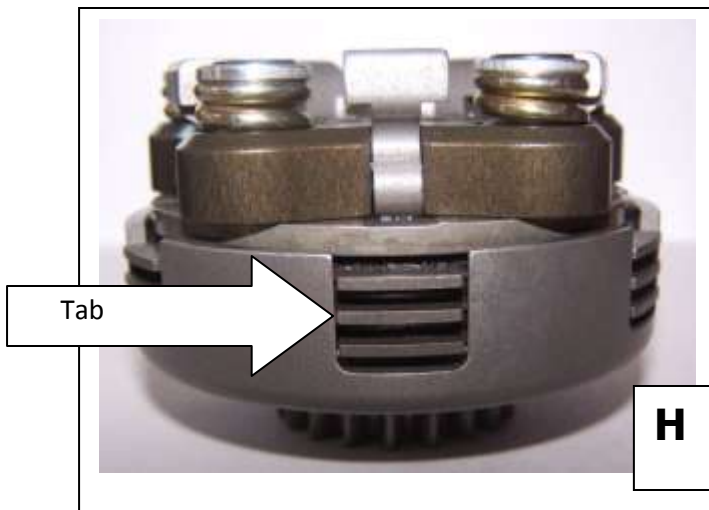


## INSTALLING VYPER CLUTCH

1. Install Vyper Step Washer as shown...  
 .815" diameter Step must face outward see arrow

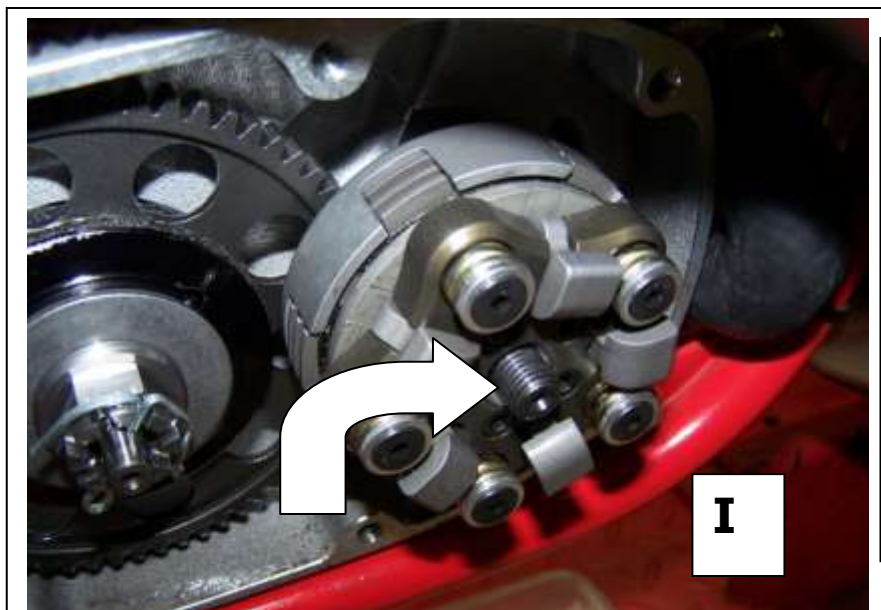
Note: triangular shaft

**Picture G**



2. Before installing clutch onto crank make sure all tabs on friction disks are nested in drum slots

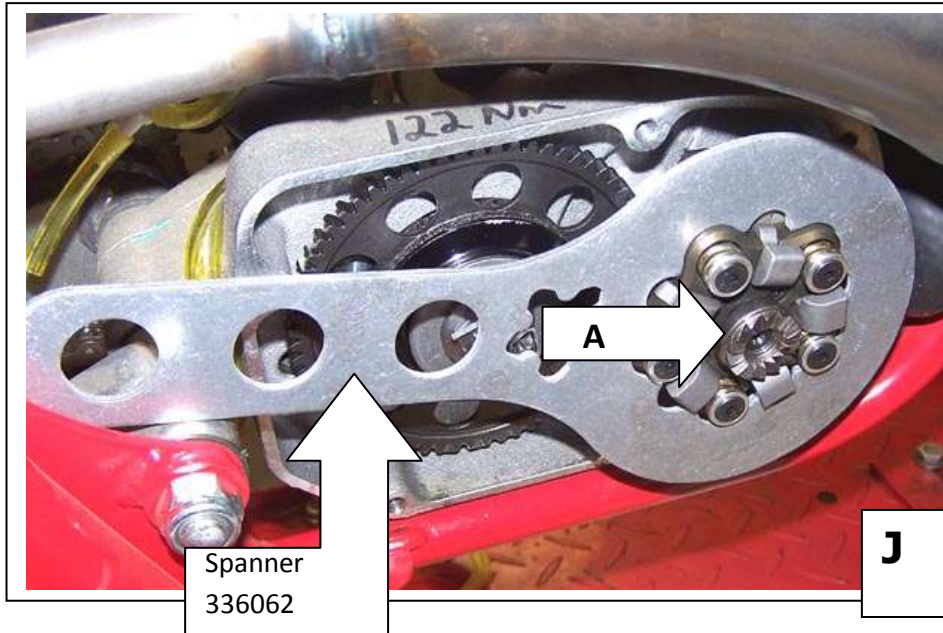
**Picture H**



3. Slide Clutch over crankshaft ..... wiggle back and forth until clutch gear aligns with trans gear and triangle in clutch aligns with triangle of crankshaft

Note: 7 threads will be visible on the crankshaft if clutch installed correctly ..see arrow

**Picture I**

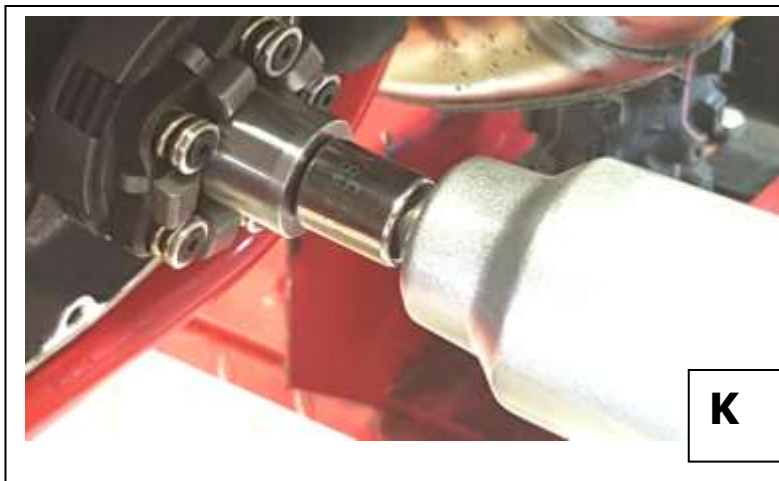


4. Apply **red loctite** and install factory starter nut ... see arrow A

Note: Optional Spanner keeps crank from turning during installation and removal of clutch

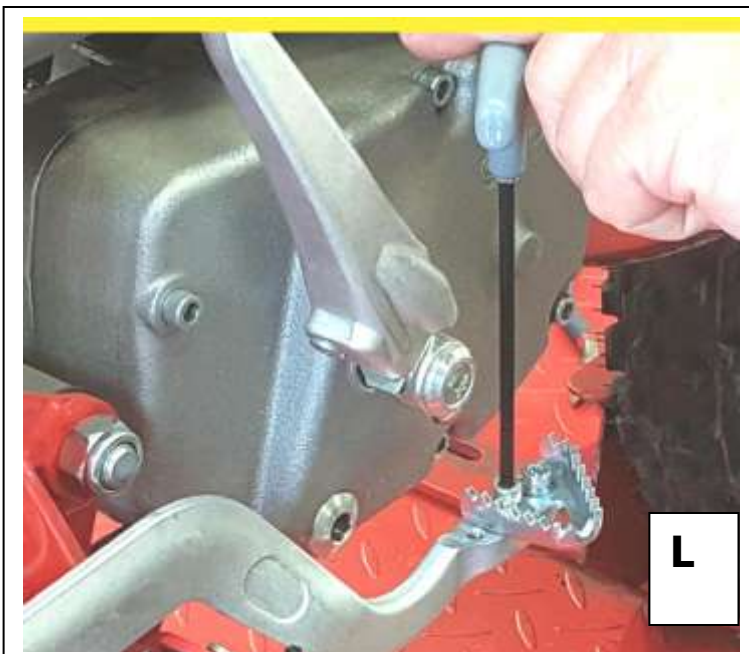
IRP Spanner P/N 336062

**Picture J**



5. Tighten nut with IRP Socket tool #920444 or factory Cobra Socket ... 35-40 ft lbs

**Picture K**



6. Install new gasket if old gasket is compressed under .050"

7. Install Cover

8. Put the end piece back onto the brake pedal

**Picture L**

9. Add 425-450 ML of IRP Nytro oil or any semi-synthetic ATF of your choice

**DO NOT USE GEAR OIL OR MOTOR OIL OR FULL SYNTHETIC ATF AS CLUTCH LOCK UP WILL BE COMPROMISED!!!**

## STALL SPEED

Stall speed is the RPM that the clutch locks up solid. In racing stall speed is often called “slipping” the clutch. Adjusting the clutch for more slip is actually raising the stall speed. Or when adjusting for less slip the stall speed of the clutch is lowered. The trick is to adjust the stall speed at peak torque of the engine.

The power band of the 50cc 2-cycle engine is very narrow therefore proper clutch adjustment is necessary for maximum performance. A clutch that locks-up far below the power band will cause the engine to bog and performance will be sluggish. A clutch that locks up above the power band is (over slipping) thereby hurting performance. A clutch that is over slipping will cause power to be wasted in the form of heat. Excessive heat may also destroy friction discs, warp clutch components or damage engine. A slight bog of 100 RPM is better than an over slipping clutch.

The stall speed of the **Vyper** is set from the factory at about 9800 rpm at sea level. ***Install the clutch with the factory setting and break in clutch for 10 minutes before making any adjustments. If you are pleased with performance no adjustment will be needed. If you want to make an adjustment a tachometer will be needed for accuracy.***

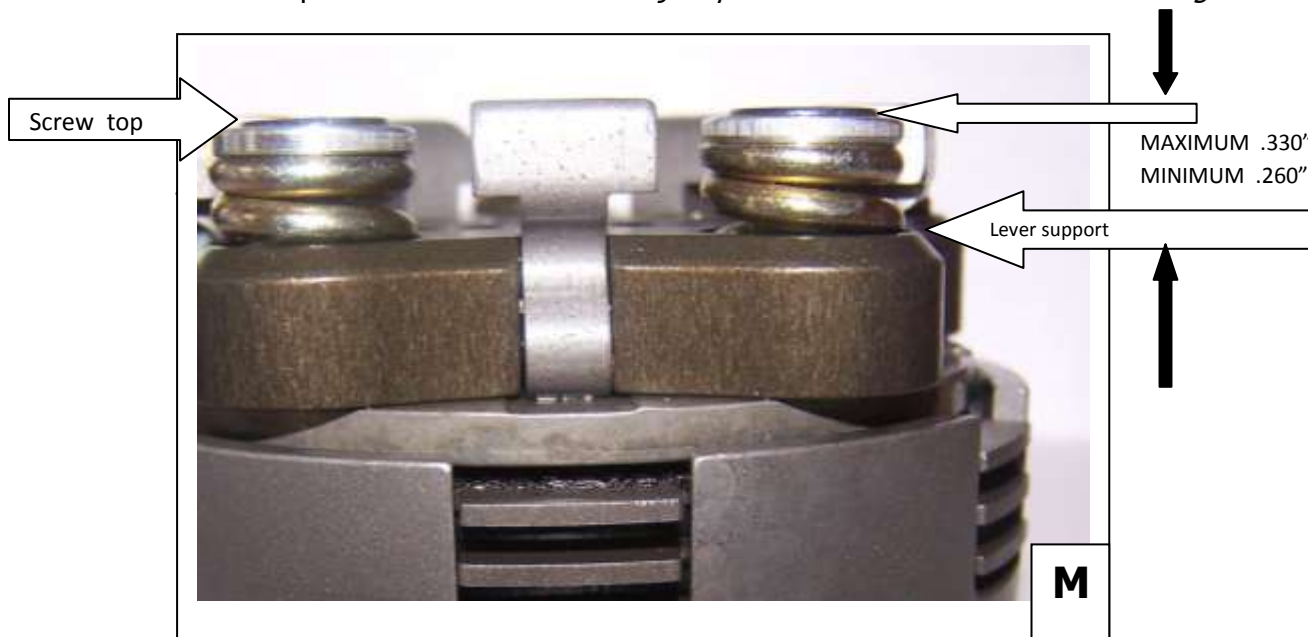
## ADJUSTING STALL SPEED

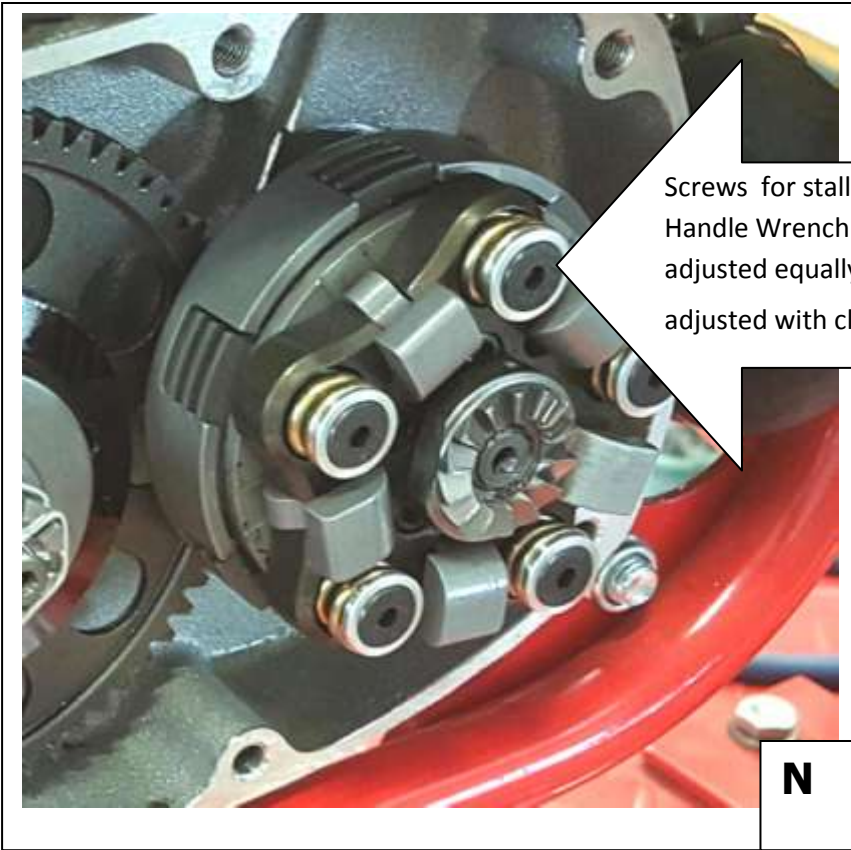
The **Vyper** stays on engine when adjusting stall speed thereby making adjustments quickly. 1/8" T handle wrench is needed for adjusting screws.

There are 5 springs that are attached to the clutch by flat head screws. To raise stall speed turn each screw equally 1/4 turn clockwise. 1/4 turn will be about 100 RPM. Put the cover back on and add 425-450 ML oil. Repeat procedure until desired stall speed is obtained.

To lower stall speed turn each screw equally 1/4 counterclockwise.

Adjustment limits are shown below. Measure from top of screw to top of lever support as shown in picture M below. ***Do not adjust past the limits or clutch will be damaged.***





Screws for stall speed adjustment ...insert 1/8" T Handle Wrench here ...all 5 screws must be adjusted equally Note: Stall Speed can be adjusted with clutch on engine **Picture N**

**N**



View of tachometer providing data . Note: Stall Speed set at 9893 RPM for this test session. *Example only.*

Stall Speed selection subject to factors such as:

Stock or Mod engine

Air density and temp

Altitude above sea level

Rider experience

PN 920430 **Maintenance:** Inspect after 2 to 5 race events Check for wear of frictions ... New .083" +/- .003" replace at .078" thick Floaters New .049" +/- .001" replace at .046" or when warped .. blue color indicates low oil level ... brown color not a problem as long as floaters are not warped .. Replace springs when free length below .520" all other components check for excessive wear or cracks and replace if needed