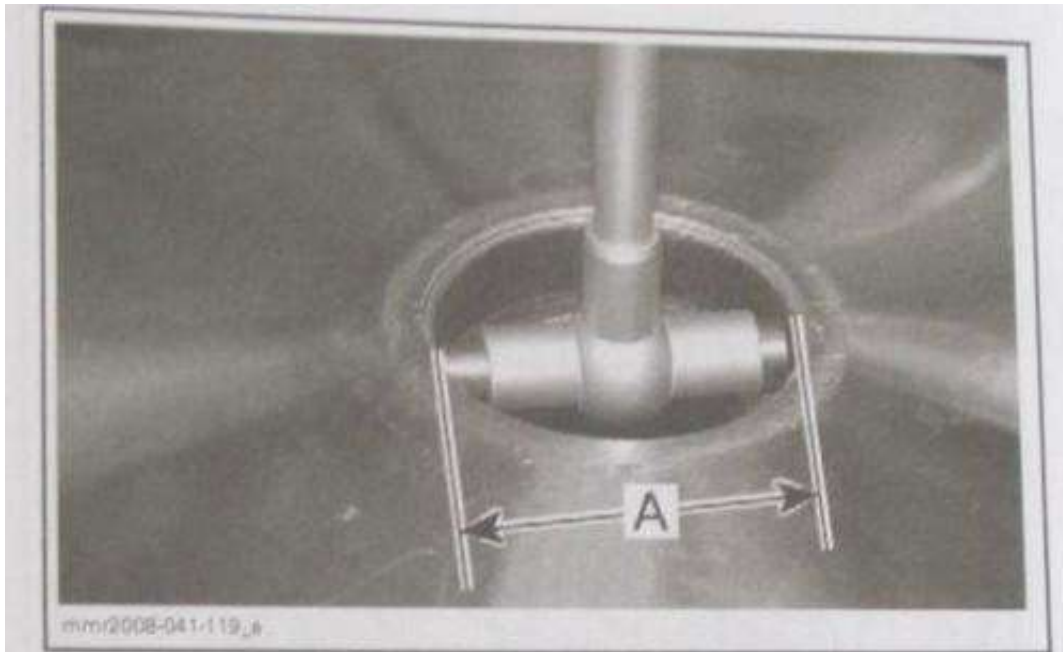


Primary Clutch Alignment

Sliding sheave bushing

For latest maintenance parts, check the information below the two pictures.

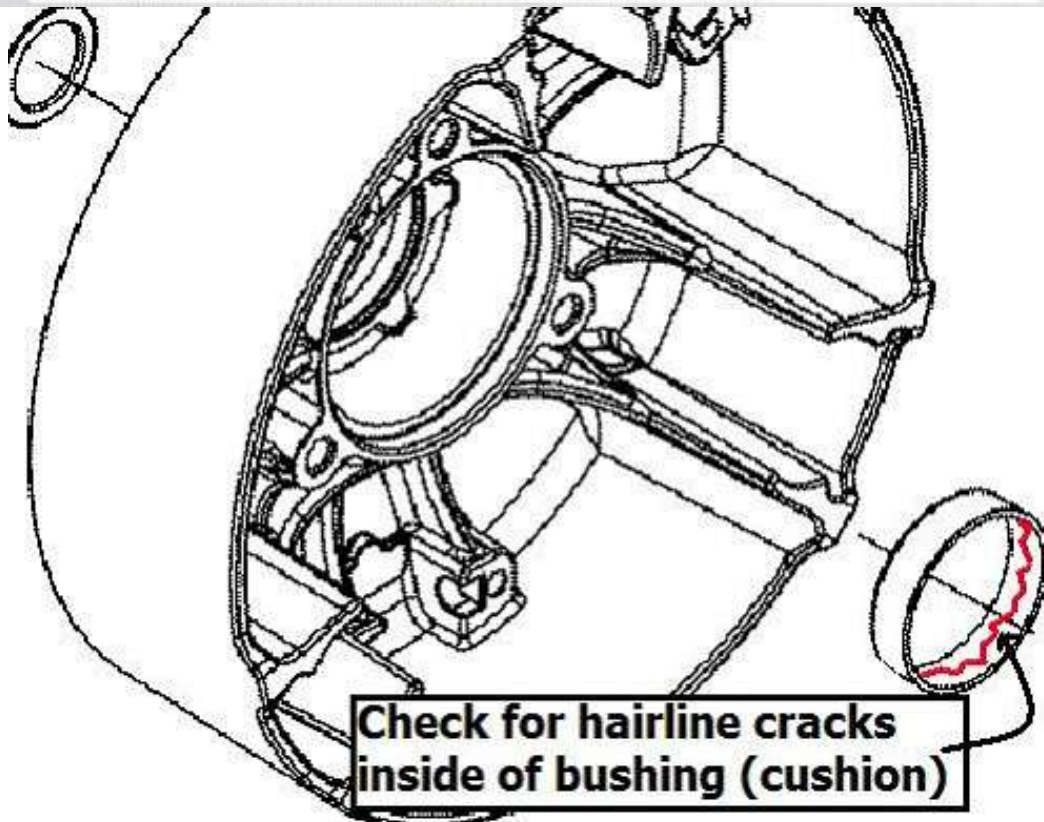


A. Inner diameter of sliding sheave bushing

BUSHING	SERVICE LIMIT
Sliding sheave bushing	40.30 mm (1.587 in)

Visually inspect coating of bushings.

Using a bore gauge, measure the inner diameter of the sliding sheave bushing. Measuring point must be at least 5mm (1/4") from the bushing edge.



Primary Clutch Maintenance parts - Measure your parts to see if within wear specs and change parts if needed.

Maintenance kit for drive pulley (buy from local skidoo dealer)

1 spring cover assy, 3 rollers, 1 bushing, 6 slider shoes and o-rings, 1 circlip, 3 cotter pins & lever axles

2011~16, 800PT & Etec

BRP#415129626

@ \$139.00

Maintenance kit for drive pulley (buy from local skidoo dealer)

1 spring cover assy, 3 rollers, 1 bushing, 6 slider shoes and o-rings, 1 circlip, 3 cotter pins & lever axles

2008~10, 800PT & Etec

BRP#415129627

@ \$139.00

Maintenance kit for drive pulley (buy from local skidoo dealer)

1 spring cover assy, 3 rollers, 1 bushing, 6 slider shoes and o-rings, 1 circlip, 3 cotter pins & lever axles

2011~older, 600E-Tec High altitude and all 1200's

BRP#415129708

@ \$139.00

Maintenance kit for drive pulley (buy from local skidoo dealer)

1 spring cover assy, 3 rollers, 1 bushing, 6 slider shoes and o-rings, 1 circlip, 3 cotter pins & lever axles

2011~2015 600 & 600E-Tec Sea level

BRP#415129624

@ \$139.00

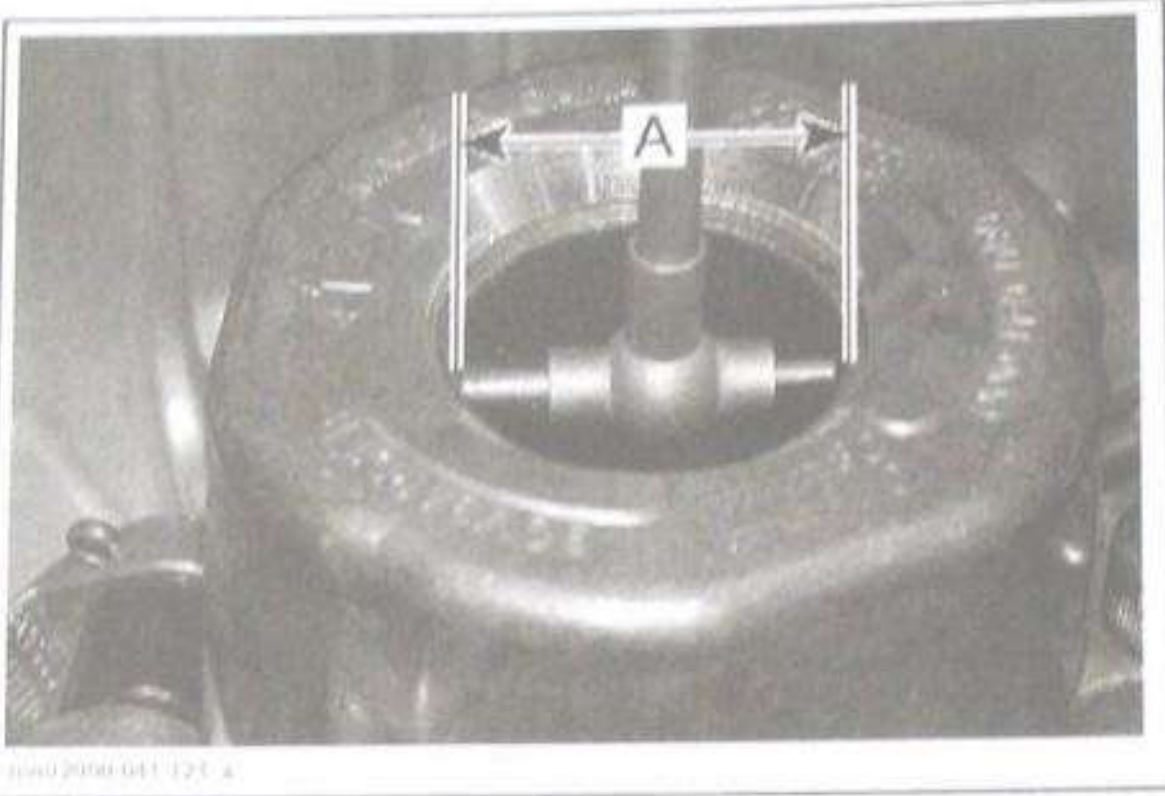
I only recommend the original BRP primary clutch rollers because they are 1) the original diameter and 2) they weigh 9 grams(TRA7) & 10.1 grams (TRA3). The fact of the original smallest diameter is a benefit with a great degree towards the promotion of quick backshift and strong bottom end acceleration using the most of the meat of the engine's torque curve.

If your primary clutch wear parts are not that good of shape, then update to the latest BRP primary clutch spring cover and the sliding sheave bushing.

In the past, some of these covers have been too tight and almost bind on the fixed sheave. Clean the burrs with emery cloth to facilitate an easier sliding fit of the cover over the fixed shaft.

Section 07 DRIVE SYSTEM/BRAKE

Subsection 02 (DRIVE PULLEY)



A: Inner diameter of spring cover bushing.

BUSHING	SERVICE LIMIT
Spring cover bushing	30.40 mm (1.197 in)

Replace the spring cover if the inner diameter of bushing is out of specification.

Visually inspect the coating of the spring cover bushing for wear.
Using a bore gauge, measure the inner diameter of spring cover bushing.
Measuring point must be 5mm (1/4") from bushing edge.

TRA-7 Sliding sheave bushing clearance

The latest bushing material update SCP-500 is durable and wear resistant, best bushing to date. There are a few instances of "sticking" to where tight tolerances of the bushing to the fixed sheave when new. The sled may reveal high or erratic rpms upon full throttle application then rpms drift back to normal. The bushing clearance may be too tight. Hone bushing to clearance of .0025~.003" for smoothest clutch stroke action.

TRA-VII SLIDING HALF BUSHING CLEARANCE

All 2009 TRA-VII primary clutch sliding sheaves used 'SCP- 500' for the sliding sheave bushing. This material has proven to be very durable and wear resistant. There were a few instances of 'sticking' due to tight tolerances of the bushing to the fixed sheave when new. If the unit has issues with high or erratic rpms on upshift, or poor backshifting is experienced, it is possible the bushing clearance is too tight. In most cases the bushing can be honed to a clearance specification of .0025-.003" for smooth sliding sheave operation. It is best to measure the inner diameter bore of the installed bushing and outer diameter of the fixed sheave shaft so the proper clearance specification can be obtained. If the inner diameter of the bushing can't be honed to this clearance specification, or if the inner diameter of the bushing is oblong in shape, then the bushing should be replaced.



Primary clutch Roller

NOTE - Weigh the rollers. There have been differences in as much as 0.9g from one roller model to another. Example, going from the 2008 TRA-7 roller to a stock replacement roller in the aftermarket, the aftermarket has been known to be 1.1g heavier.

Example - if you had 16 gram pinweight with the original BRP roller and bought these aftermarket rollers, then reduce the pinweight by 1 gram to have the equivalent overall roller and pin - weight. Previously you got 8200 with 16g and oem roller. Now you will need 15g to get 8200

Binding of TRA lever pins

During break in period on TRA clutches it is possible for the mating surfaces of the clutch lever pins and bushings to collect build up debris from wearing system parts. Debris has a sticky gum feel to it and prevent the lever from moving freely on the axle.

Excessive debris can reveal fluctuating rpms from erratic shift character.

Also possible for build-up to occur later on as parts wear with more use.

Clean foreign debris build-up and always verify TRA lever retainer bolts are torqued to proper specs.

BINDING OF TRA LEVER PINS

During the break-in period on TRA clutches, it is possible for the mating surfaces of the clutch lever pins and the lever bushings to collect a build-up of debris from the various parts on the clutch that are wearing in during the first few hours of use. Often the debris will have a grey gummy feel and look to it and it may prevent the lever from being able to move freely on the pin.



If the levers can't move freely on the pins, the snowmobile may have erratic clutch shifting characteristics.

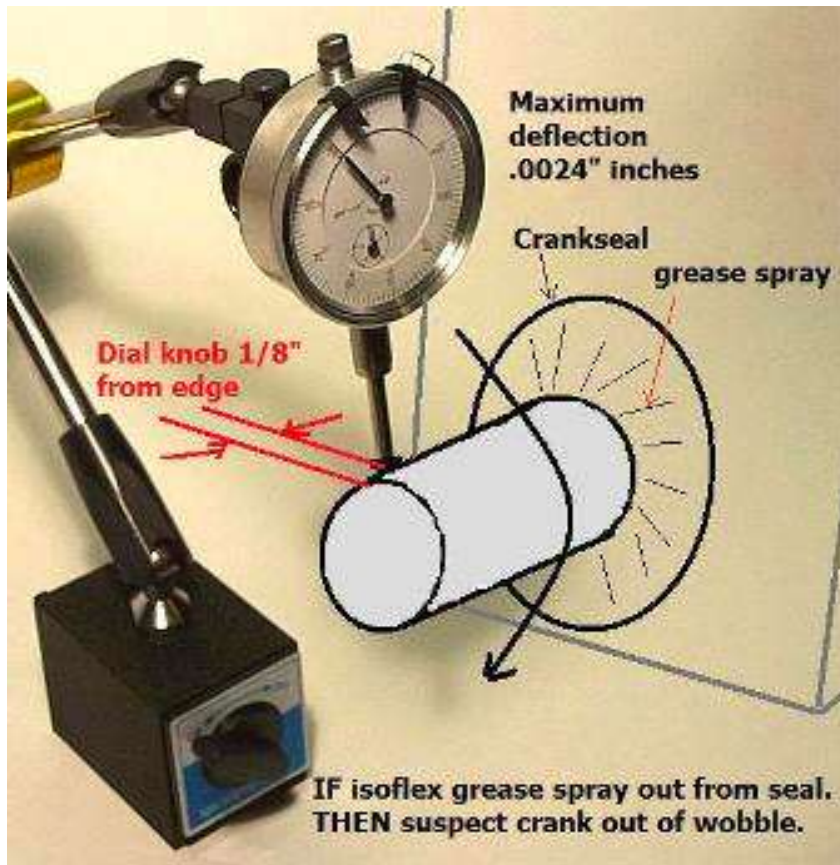


It is also possible for the build-up to occur later on as parts wear with more use. If erratic clutch shifting characteristics are experienced or regular clutch maintenance intervals are being performed, the lever pins and bushings should be cleaned of any foreign debris build-up so the levers can move freely on the pins. On assembly, always verify that all of the TRA clutch retainer bolts are torqued to the proper torque specification.

Crank Taper Runout

800R known for bad crankshaft wobble that contributes to excessive clutch wear and short belt life. Get the clutch off the engine.

Get a dial indicator on the end of the crankshaft stub to check for crank end excessive runout. Crank taper may be out of spec and this will certainly cause excessive premature wear of new clutch components.

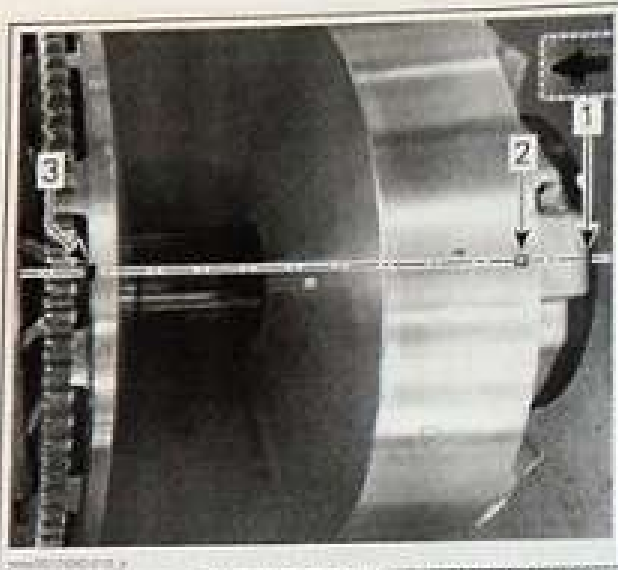


Put dial indicator 1/8 inch in from end of crank stub.
 Maximum deflection PTO side is 0.06mm (.0024) engine type = ALL

I have had a customer who warantee a crank on an 08 and it took 4 crankshafts from BRP before a spec crank showed up - crank came in, checked runout, (.003+) sent it back Nuther crank come in, again (.003+) sent it back, nuther crank come in (.0025) sent it back. 4th crank come in and (.002) The 4th crank came with less than out of spec runout.



The best way to mount the dial indicator is to take the magnetic base or standard base and put it against the PTO cylinder. With a ratchet strap, wrap the strap around the cylinders of the engine and crank down on the dial indicator base - this is so you have a solid mount to the engine itself. With the stylus pointed down on the stub, dial as shown in the illustration. With spark plugs out, can rotate the engine using the starter pull chord. Zero in the scale and measure runout on crank.



800R MODELS - SLIDING-SHEAVE-FIXED-SHEAVE ALIGNMENT
 1 Governor cup index (ARROW)
 2 Sliding sheave index (4 mm Ø/Ø2 in) CIRCLE
 3 Fixed sheave index (NOTCH)

Drive Pulley Installation

Clean mounting surfaces as described in *DRIVE PULLEY CLEANING* above.

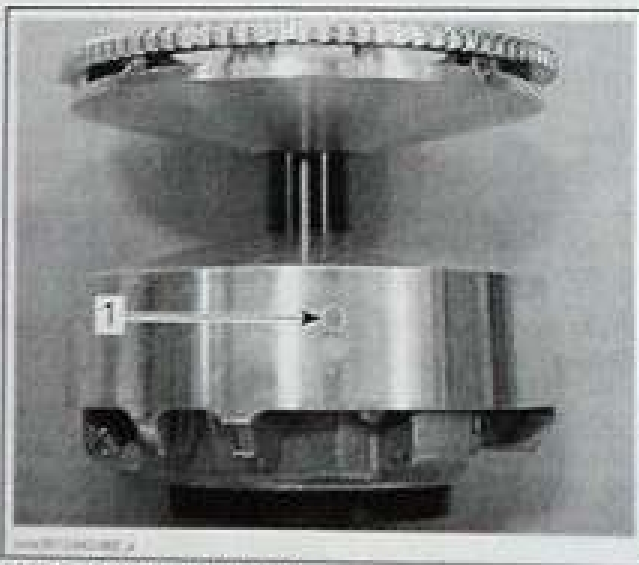
NOTICE Do not apply antiseize or any lubricant on crankshaft and drive pulley tapers.

Install drive pulley on crankshaft.

800R E-TEC Engine

Install drive pulley on crankshaft by aligning index marks.

NOTE: Disregard any paint markings.



800R E-TEC MODELS ONLY
 1 Drive pulley index mark (Ø11mm (11/32 in) CIRCLE)



800R E-TEC MODELS ONLY
 1 Crankshaft index mark.

All Models

Install a NEW conical spring washer with its concave side towards drive pulley then install drive pulley bolt.

Install the drive pulley bolt. Refer to the following table to use the proper bolt length.

ENGINE	DRIVE PULLEY BOLT LENGTH
600 and 600HO E-TEC	152.5 mm (6.004 in)
800R Power-TEK 800R E-TEC	153.5 mm (6.043 in)

NOTICE Always use BRP genuine parts for conical spring washer and bolt.

Use the DRIVE PULLEY HOLDER (P/N 529 035 674) to retain drive pulley. See removal procedure.

Torque drive pulley bolt.

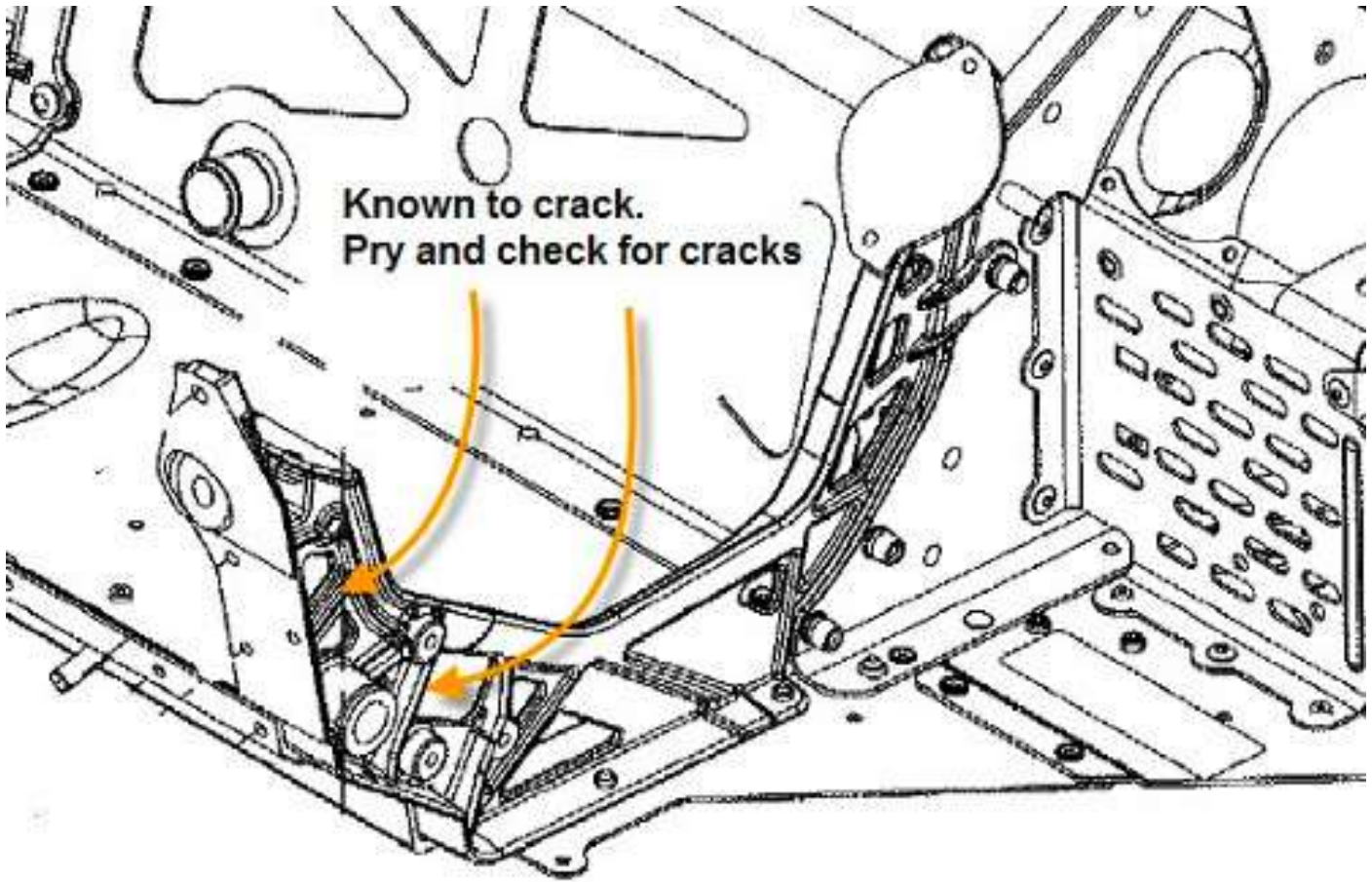
DRIVE PULLEY FIRST TORQUE	
All engines	120 N•m (88 lbf•ft)

Before starting engine, perform drive pulley adjustment, see further in this section.

Install drive belt and guard.

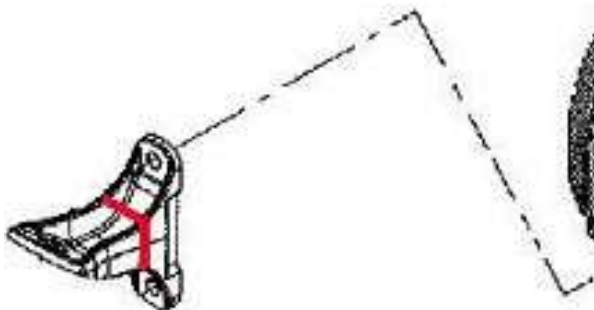
The engine back stop can move out over a 1/4 inch. The clutch alignment can be good at rest however under full load the torque would twist the engine out of parallel.

Check Engine Mounts and E-Module for Cracks (engine-module)

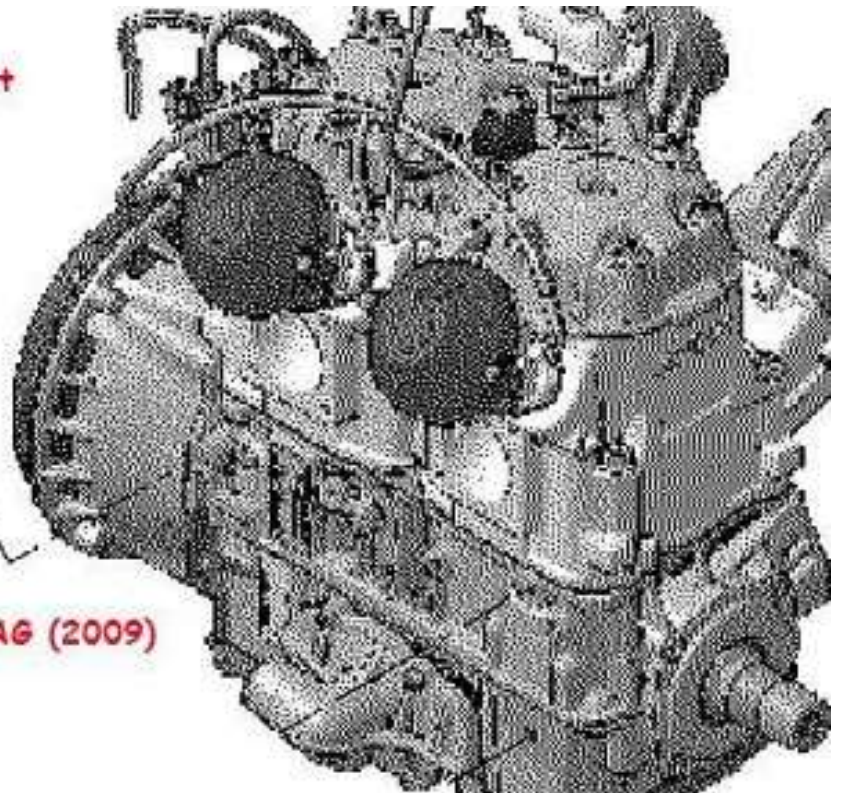


Check that support especially on 2008 and 2009

512060108 - Front MAG Support
Prone to cracking (2008)



512060469 - Front Support, MAG (2009)



[Dial indicator video \(CLICK\)](#)

and

[Dial indicator video #2](#)

and

[Dial indicator video #3](#)

THANKS DON MEGA

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30 miles New Excessive Crank runout Ski-doo 800R

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Measuring multiple locations of crank runout on freshly rebuilt motor.

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