Technical Bulletin TB 05-2019 SRF3 Alternator Belt

At the start of the GEN3/SRF3 engine conversion there was a lot of misunderstanding about the alternator/water pump belt. These included but may not be limited to the following.

-How tight should the belt be...

-What groove does the belt belong in...

-The bracket and the attaching hardware...

Let's start by understanding the alternator mounting bracket. This assembly is a custom fabricated part built for the SRF GEN3 application.

The Alternator Bracket serves 3-functions:

1. Locate the alternator
2. Provide the mounting point for the engine lift eye
3. Seal the timing belt cover over the length of the bracket.

The Lift Eye has 2 functions:

1. Lift the engine.
2. Serves as the mounting point for the alternator slotted adjuster bracket.

Alternator Bracket:

The bracket is attached to the engine in 3 locations:

1. At the bottom with a 10MM bolt and nut
2. At the cylinder head with two 10mm button head Allen bolts. (these two locations are slotted for differences in cylinder head bolt locations)

One of the most common misunderstandings is that the block is threaded at the bottom location. You must first tighten the bolt and then the nut as well. I have seen multiple

brackets with a tight nut at the bottom and a loose bolt. This allows the alternator bracket to flex with load.

One update has been made to the alternator bracket, which was to use a thicker sheet material

Lift eye:

I've seen the lift eye crack, while not much, it does help support the alternator

Two updates have been made to the lift eye, which have included a thicker material and a section of solid square material was added.

Slotted Adjustor Bracket:

Issues with the slotted adjustor have not been as common, but I have seen them with loose hardware.

One update has been made to the slotted adjustor bracket, which was to use a thicker material.

Pivot Bolt:

A loose pivot bolt is a common occurrence on many cars. While it is a difficult fastener to tighten, it does need to be tight. Over time every contact area of the bolt, alternator and bracket will wear. This allows the alternator to run out of alignment with the crank pulley.

A fix that I have seen several people do, is to weld a small tab with a 90-degree bend on the pivot bolt hex head. When this tab is positioned in the open area of the alternator body, you will not need to use a wrench on the bolt head when tightening.

Belt Placement:

We used a 4v belt instead of a 6v belt like the crank pulley so the alternator could be located as far from the #1 intake port as possible. When installing the belt, it is meant to be placed in the **outer most** 4v's of the crank pulley (away from the center of the engine)

Belt Adjustment:

The GEN3 engine, alternator and pulley are aluminum, therefore they grow with temperature. As the engine block/cylinder head, alternator body and pulley warm up, the belt tightens.

The belt doesn't need to be banjo string tight. When cold you should be able to twist the belt at least 180 degrees without stretching it and at operating temp about 90 degrees is good.

I have seen the belt so tight, that it pulls the alternator out of alignment and bends the bracket.

The Belt Itself:

The belt itself can be worn or stretched in an uneven manor. I've seen this happen when the crank pulley and or the alternator pulley are full of pick up rubber, more so on one edge of the belt or the other. This makes the belt always want to climb or ride in one direction or the other. You can clean the pickup rubber out of the pulleys and turn the belt around and run it the other direction to get by without problems (sometimes). This should only be done if you are unable to replace the belt at that moment.

While I've touched on some area's or problems that I've seen in the field, I'm sure I have not seen every possible way the alternator belt can be an issue. With basic care and feeding your GEN3 engine will provide years of reliable, competitive service.