-=Air-Condition Unit=-

Use Printing settings that gives you good results for a medium/Small size object.
Reduce infill as much as possible for the "Main Compressor Unit" or it's just a waste of Filament, do not forget to increase solid layers to around 5 to get a good finish at each end,

If metal bearings are not available there are "Mock" Bearing included with the STL Files you can print these out to use, they work quite well,
All the bearings used are the same size bearings that are used for the rest of Eric's engine/Gear Box...etc.

Tip*- Heating the self-tapping screw tip up with a lighter will make a nice thread grove in the plastic- without cracking the plastic this is very important for many parts, Hold screw in the screwdriver with one hand and use the lighter on the tip of screw, there a fine line between heating the screw up and burning your finger, you will find it pretty fast, as soon as you feel the heat in the screw head its ready to use… *See Picture for holding Method

The "Maim Compressor" already has "Snap Off Support" built in for the Overhangs and the Main Shaft, so no Software Support is needed,, it will need x3 bearing, one in the front and 2 in the back, also add 2 or 3- M3 Washers, this is so the 45mm M3 Bolt will sits flush with the pulley face after screwing the nut on-- this is pretty versatile design for attaching the pulley to the compressor- a smaller bolt can be used, 35mm I think is the smallest you can use.
I assume you have some mechanical experience if your Building This Engine.

The fake bolt heads will add a bit more detail to the Main Compressor.

The "Main Pulley "is the same as Eric's original except it has a Bearing Hole in the backside and the Nut Holder has been removed because it was no longer needed and it improved surface finish It has a "Support Cylinder" for the main shaft, so no Software Support is needed. the Back of the Main Pulley is designed to have x2 Bearings Inserted-

If the "Support" does get stuck to the part, simply drill/Ream in to it from the other side and the support cylinder will break free, same applies for Main Compressor, I have printed this part 4 times and every time the support pops off nicely, I use a small Flathead screw driver between the Support Cylinder and the wall,

Attaching the Main Compressor to the Mounting Bracket and Engine Block is very simple, there is a "Offset" between the Main Compressor and Mounting Bracket so it only goes on one way,

There is also a second bracket Version that mounts to the bottom of the main compressor only. this is for Modelers who wish to make the Compressors Inlet and Outlet Manifold, place the larger flat side of main compressor mounting on the topside, this will give you enough room to make and install the intake/out-take Manifold.

The Idler/Tension pulley is very straight forward design, and easy to attach to the engine the hole is already there for it, the screw goes through the Idler Mount/ Spacer and Timing Cover and tightens into the engine block,

-=Hardware=-

x6- Self Tapping Screws- 4gauge(3mm)-10mm+ long for mounting brackets to engine block
x1- Self Tapping Screw -6gauge- around 40mm for Idler Pulley Bracket into Engine Block
x1- 45mm - M3 Nut & Bolt & Washers- for attaching the Main Pulley to Compressor Unit
x1- 20mm - M3 Nut & Bolt & Washers for Idler Pulley
x6- 3mmID X 10mmOD X 4mm Deep Bearings "or" use "Mock" ones

I had eyeball the scale of the Air Condition Unit using photos of the real engine,, it looks about right but is not perfect- it is actual quite a large piece of Hardware on the real engine, the Main body of the Compressor is just about the same diameter as the Main Pulley so i used Eric's pulley to judge the diameter, you can scale the "Main Compressor" down a bit if you like and it will fit the Half Bracket,, I am not completely happy about the mounting system and would of preferred something closer to the real system,,

The SketchUp Files have been included so you can Modify it to suit your needs.

-=Mindless=-