Triumph Rocket 3 Supercharger Installation Guide

READ ALL OF THIS BEFORE STARTING WORK ON THIS INSTALLATION

IF YOU DON'T UNDERSTAND SOMETHING THEN PLEASE CONTACT TTS

1. Jack up the front of the bike using 2 axle stands and a piece of wood under the engine
2. Remove the front wheel, chrome radiator surrounds, radiator and pipe work, water pump and the chrome cover. Remove the fuel tank, air box and injectors.
3. Remove the radiator; front engine cover and cam cover as per Triumph workshop manual.
4. Turn engine over until number 1 cylinder is at top dead centre and the crank timing mark aligns with the mark on the case (as manual). NOTE TIMING MARKS ON CAMS AND CRANK RELATIVE TO THE CASES. IT IS ESSENTIAL THAT CAM TIMING IS PUT RIGHT IF THE CHAIN JUMPS.
5. Remove the cam chain tensioner,
6. Remove the tensioner arm by unbolting at the bottom.
7. Remove the M8 bolt from the end of the crank
8. Remove the cam sprocket and fit the new crank sprocket.
9. Mask off around the crank to stop swarf entering the engine.
10. Drill and tap the crank to accept an M12x1.25 bolt. **USE PROTECTIVE GLASSES AND GLOVES. Drill to 32mm deep with a 8mm pilot drill first, and then drill out with the 10.8mm drill supplied. Tap out with the tap supplied. Make sure the thread is at least 28mm deep.** Use the TTS cam sprocket to help keep the drilling parallel to the crank, and also to aid tapping the crank thread parallel. Wrapping some tape around the drill and tap to increase the diameter will also help keep your actions true. **Blow out all the swarf and make perfectly clean.**
11. **Do a dummy build. Fit the spigot shaft and pulley and 12mm bolt but not the washer. Check that the bolt goes all the way home and tightens up the pulley without running out of thread. IF it doesn't go all the way home tap the tread deeper into the crankshaft. It is essential that this be checked. Remove the bolt and the pulley for fitting after the main cover is fitted.**
12. Check cam timing and refit the tensioner blade and tensioner. **DOUBLE CHECK CAM TIMING. ONE TOOTH OUT IS NOT GOOD ENOUGH.**
13. Fit new up rated clutch springs and torque bolts down to 8lbs.
14. Remove the clutch activating shaft and spring from the original clutch cover. **NOTE HOW IT GOES TOGETHER, HOW THE SPRING IS LOCATED ETC.** Remove the seal small out of original front case. Then warm up the front cover and tap out the two needle roller bearings from the cover.
15. Fit all the parts in ''12'' into the new cover. There is no need to heat up the cover.

16. Clean off any old gasket material from engine cover faces. Apply a thin layer of RVT silicone sealer to each mating face. Refit a new gasket to the engine face, the sealer will hold it in place and then refit the NEW front cover **MAKE SURE YOU GREASE THE OUTRIGGER BEARING AND SEAL TO MAKE A NICE SLIDING FIT**. The case bolts should be torqued to 8lbs.
17. Fit the crank pulley onto the shaft and again make sure it is seated correctly. Apply loctite to the m12 bolt (with washer) and fit into shaft. Torque bolt to 80lbs. You will need to put the engine in gear and get someone to press the rear brake hard to enable this to be done. Turn engine over to make sure pulley is running true. **DOUBLE CHECK THAT THE BOLT IS FULLY HOME AND NOT BOTTOMED OUT ON THE CRANK BOLT HOLE PREMATURELY.**
18. Fit the banjo's with the banjo bolts to the supercharger, offer the supercharger up to the main mounting plate and set the banjo's to a point so that the oil pipes can be pushed on. Tighten the banjo bolts; make sure you have the copper washers in place either side of the banjo.
19. Fit the supercharger with the 'THIS SIDE DOWN' marking at the bottom, the outlet of the supercharger will be pointing up. Tighten the 3 chrome bolts up leaving the top left bolt out, as this will be used to mount the belt cover later.
20. Now you have the supercharger mounted, the belt and belt tensioner can be fitted. Slide the belt on the crank pulley and so it fits on the 6 vee's closest to the bracket on the supercharger pulley. Using a 8mm Allen key in the end of the bolt provided fit into the eccentric tensioner wheel. Offer the pulley up to the plate in its slackest position, locate the bolt into the end of the bolthole in the plate at an angle and then with a fair pressure push up against the belt and square up the bolt into the threaded hole and tighten up. (I suggest this method as the new belt is going to be pretty tight on getting the tensioner pulley into place).
    Fit the cover using the bolts and spacer provided.
21. Refit the water pipe, water pump, cover etc and fit the radiator, The **bottom two brackets on the front of the engine will need bending out slightly so the radiator does not foul the belt and pulleys**.
22. **Follow the supercharger handbook on routing the oil lines, oil filter and oil cooler and tank**. Best place for the tank is to be fitted in the compartment where the original air filter was under the seat. Remove the filter and fit the container using the clip provided to one of the air filter cover boltholes.
23. **Make sure to connect the radiator fan plug**.
24. Replace the old injectors with the new bigger injectors. The injectors are a little shorter than the originals so don't fit into the fuel rail quite as far, but as long as you fit the retaining clips they are perfectly fine. The injector plugs need to be cut off the loom and new ones (supplied) soldered on. Orientate the injectors so you can fit the plugs as you fit them all back onto the injector bodies. All this is much simpler than it sounds.
25. The air temp sensor needs relocating into the air inlet pipe. Remove the sensor from the air box. Remove the plastic 'nut' and screw the sensor into the boss on the inlet pipe. There is an extension cable supplied. Fit the inlet pipe onto

supercharger, plug the new extension cable into the sensor and run to the existing plug.

26. Remove the coils and cut the bracket in half. On the left hand coil, drill a 6.5mm hole in the tab and bolt back up into the original hole while the tab should be completely removed from the right hand coil. It is then bolted back up using a different hole on the bracket. This opens up a gap to allow the 2" pipe through and under the tank.
27. There are 4 small rubber vacuum hoses which meet under the fuel tank on to a plastic 4 way cross piece. These need to be lock wired in place to stop them from coming off.
28. Fit the silicone hose joiners on each end of the 2" pipe and slide on the hose clips. The short hose to the charger and the long hose to the plenum. Feed the pipe through the gap made by moving the coils. One end fits onto the supercharger while the other end is positioned under the fuel rail. It is a very tight fit so attention needs to be paid to the position of the hose clips. Fit the silicone hose joiners onto the plenum, remembering the hose clips again and fit onto the throttle bodies and 2"pipe. This part can be a bit tricky as there is not a lot to clamp on to. When all the hose clips are good and tight fit the blow off valve onto the 1" pipe on the side of the 2" pipe using the 1" silicone hose joiner and clips. Unplug the MAP sensor from the electrical connection; the rubber hose from the MAP sensor is then fitted to the blow off valve. The idle control unit must also be unplugged and removed. It is located to the left of the plenum. Take off the header tank to aid access to the unit. Undo the 2 screws to remove the solenoid then remove the mounting bracket. The idle will then have to be manually adjusted buy the small M3 grub screw; it should have a small dab of yellow paint on it.
29. Fit the air filter onto the air intake pipe and do up the clips. Refit the fuel tank. Check to make sure that all connections, bolts etc are tight. Fill the fluid cooler with traction fluid. Refill the radiator. Make sure engine oil level is ok, fill as required. Before starting the bike upload the new map using the TUNEBOY software. **When the bike is started you need to keep an eye on the charger fluid level. The level needs to be checked when the bike is running only and should be a 1/3 way up the dipstick with the stick not screwed in with the engine running**. If it is over filled then the fluid will be blown out of the cap and makes a mess. When all the levels are correct and with the bike warmed up the idle can be set to about 850 rpm. The bike really needs to be run on at least 97 ron octane fuel. (93 average method**). If this is a problem then the Tuneboy map must be adjusted to have less ignition advance than standard.**

3. RUN THE BIKE FOR 200 MILES USING NO MORE THAN HALF THROTTLE AND 3500RPM, THIS IS TO BED IN THE SUPERCHARGER. AFTER THIS TIME THE FULL POWER MAY BE USED. THE TUNEBOY MAP SHOULD BE QUITE CLOSE BUT I SUGGEST THAT A FINAL TUNE IS DONE ON A ROLLING ROAD.

FINALLY PLEASE MAKE SURE YOU SPEND TIME GETTING ACCUSTOMED TO THE EXTRA POWER

THE BIKE NOW HAS. IT IS DECEIVINGLY FAST AND CAN CATCH OUT THE UNWARY!!!!