

**Part #888-116/888-120: K-Series Race Supercharger Kit**

The KraftWerks K-Series Race Supercharger kit is designed for the hardcore K-Engine Builder. You must be a competent mechanic with a good set of tools and capable of welding and tuning. This is a general installation guide for the KraftWerks K-Series Race kit however each installation may vary slightly. Please keep these key factors in mind before installing:

- Please review the entire installation guide before attempting install. If you have any questions about your ability to perform this installation, we recommend you take your vehicle to a performance shop for installation.
- You will be doing work under the car during this installation. If you do not have a workshop with lifts, you will need a good floor jack and secure jack stands. These jack stands will need to raise the car up enough so that you can get yourself under the chassis. Never work under a car without secure jack stands to support the vehicle.
- For tools you will need:
  - A full set of metric wrenches from 8mm to 19mm
  - A full set of metric sockets from 8mm to 19mm
  - A screwdriver set
  - A set of metric allen wrenches
- All of the tools required for this installation can be purchased at a local hardware or auto parts store.
- If you have not changed your oil and filter recently, this will be a good time to do so. High quality synthetic oil would be a good choice considering how much additional horsepower your engine will now be producing.
- Make sure that your vehicle has premium gasoline in the tank (91 Octane or more). Run several tanks of Premium fuel through your car prior to installing the supercharger to ensure that there is good Premium grade fuel throughout the system. If you are using a discount brand of fuel, we suggest you switch to a “top tier” gasoline. It is a good practice to get into.
- If your fuel filter has more than 20,000 miles on it, it is crucial that you change it.
- Always wear safety glasses when working on your vehicle.
- Part numbers for individual parts are shown in parentheses. Part numbers start as “016”-000. Example: (016-456)

- Part numbers for “sub kits” start as a “006” number as opposed to the individual part numbers being a “016” number. In many cases there are “sub kits” that have been pre-assembled at KraftWerks to simplify your installation. You will find them on your Bill of Materials and in the instructions listed as (006-001) etc.
- The KraftWerks Supercharger does not require any break-in time or warm up. But we do recommend a proper warm up period before operating the engine at full boost.

**K-Series Race Kit Notes:**

- The K-Series Race Kit DOES NOT include intercooler piping. Piping must be made by the installer
- The K-Series Race Kit DOES NOT include any type of engine electronics. You must properly tune the engine with the supercharger system. KraftWerks recommends Hondata engine management systems

## Additional Recommendations:

- High Flow Fuel Pump
- If you use a “Return-Style” fuel system, install an adjustable fuel pressure regulator set at 50-60psi with boost reference.
- Use at least one heat range colder resistor spark plugs. If you run non-resistor spark plugs, they can produce signal noise that will cause the ECU to function poorly.
- Bolt the ground wire of the injector harness to the valve cover, NOT the intake manifold. The intake manifold is separated from the cylinder head by a gasket and can affect the ability to properly ground the injection system.
- Install the bypass valve between the supercharger intake pipe and the supercharger outlet pipes.
- Make sure the TPS (Throttle Position Sensor) starts at 0-2% and ends at 98+%. We have seen a lot of cars with drivability problems that were traced to the TPS being out of specification.

**IMPORTANT: NEVER OPERATE THE ROTREX SUPERCHARGER WITHOUT THE OILING SYSTEM FULL AND PRIMED FOR OPERATION. THE DRIVE SYSTEM OPERATES AT HIGH RPM AND SHOULD NEVER BE RUN FOR ANY REASON WITHOUT THE OIL SYSTEM OPERATIONAL!**

## SECTION 1: PRE-INSTALLATION PRECAUTIONS:

**Step 1:** Remove the negative battery cable. Before removing the battery cable, verify that you have the “anti theft” radio code. It is usually located in your owner’s manual. If you cannot find the radio code, take your car to your local Honda dealer so that they can retrieve the code through the Honda computer network.

**Step 2:** Jack your car up, or put the car up in the air if you are working in a shop. Support your car with Jack Stands or Ramps if you are working on the ground. Never work under a car without some type of reliable support.

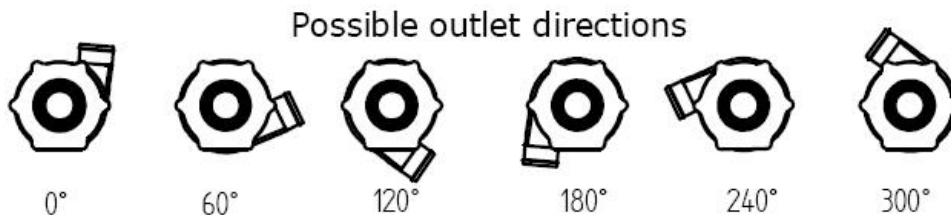
## SECTION 2: FACTORY PART REMOVAL PRIOR TO SUPERCHARGER INSTALL

**Step 3:** Remove the air conditioning compressor if it has not been done already.

## SECTION 3: ROTREX SUPERCHARGER CLOCKING

**Step 4:** Lower the Rotrex supercharger down into the area where the air conditioning compressor once occupied. Lay it in place with the banjo bolts facing up. The banjo bolts must be mounted in a horizontal plane +/- 15 degrees.

**Step 5:** At this point you will be deciding which direction the Rotrex compressor outlet needs to face for your particular application. The Rotrex compressor housing can easily be rotated into 6 different positions. Each position is 60 degrees greater than the last. Most K series cars will be using the Zero, 60 degree, or 120 degree rotation.



**Step 6:** To rotate the Rotrex compressor housing, simply remove the four main mounting bolts from the drive unit. Then remove the two smaller locating bolts from the compressor that hold the compressor housing to the drive unit. These two bolts will be located at the 3 o’clock and 9 o’clock position when viewing the banjo fittings in a horizontal plane from the front of the Rotrex where the pulley mounts. With these last two bolts removed, carefully rotate the compressor housing until the next batch of mounting holes lines up with drive unit, 60 degrees more than where you were. Be extremely careful not to damage the compressor wheel or compressor wheel fins during the rotation. Reinstall the two mounting bolts and test fit the supercharger again. Repeat this rotation until the compressor outlet is pointed in the direction that works for your vehicle.

**Step 7:** Now remove the Rotrex supercharger from the car, so that you can install the mounting brackets.

#### SECTION 4: SUPERCHARGER INSTALLATION

**Step 8:** Bolt the upper Rotrex mounting bracket (Triangle shape) to the original location of the upper A/C mounting brackets. Install this bracket using two 8x1.25x20mm AHCS (allen head cap screws). Apply Loctite locking adhesive to these bolts before installing. Torque to 16ft lbs.

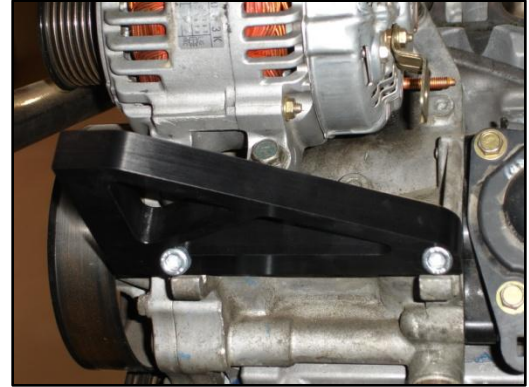


Figure 1: Upper K-Race Bracket

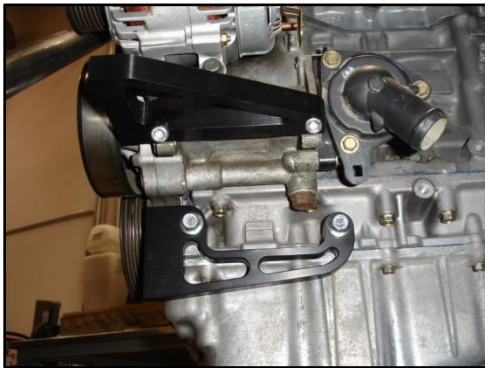


Figure 2: Upper and Lower K-Race Brackets Installed

**Step 9:** Install the lower Rotrex mounting bracket (U shaped) to the lower A/C mounting point. Install this bracket using two 10x1.25x25mm flanged bolts. Apply Loctite locking adhesive to these bolts before installing. Torque to 20ft lbs.

**Step 10:** At this point it is time to prepare the Rotrex supercharger for final installation. You will need to determine where you plan on locating the oil cooler and Rotrex oil reservoir so that you can cut your 5/16" oil hose to the proper lengths. If you need more oil hose, you can purchase additional hose in any length from KraftWerks. If you prefer to buy from a local supplier, always purchase 5/16" transmission oil hose. Normal hose will not be suitable for this application.

**Step 11:** The Rotrex oil hose routing will be as follows: The oil leaves the "OUT" fitting of the Rotrex and is routed to the oil cooler. From the oil cooler it travels to the TOP fitting of the Rotrex oil reservoir. From the bottom of the Rotrex oil reservoir it travels to the magnetic oil filter. The magnetic oil filter will have an arrow on it pointing in the direction of the Rotrex supercharger. From the magnetic filter the oil travels to the Rotrex supercharger "IN" fitting.

**Step 12:** Once you've determined where the oil cooler and oil reservoir are going to be located, you can start the oil hose/banjo fitting installation.

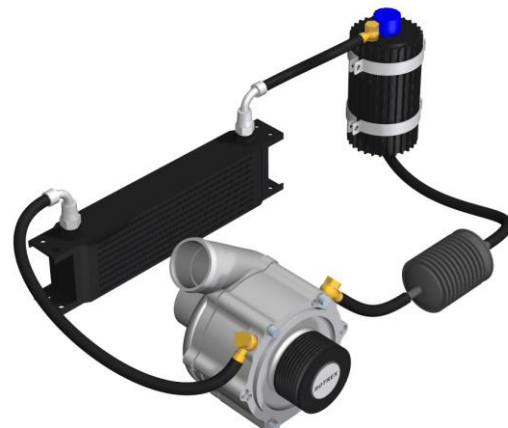


Figure 3: Rotrex Oil Line Routing

**Step 13:** Install two banjo fittings onto the Rotrex supercharger (you will find the banjo bolts/washers in the Rotrex supercharger box and the banjo fittings in the Rotrex oil kit) so that they face back towards the compressor inlet housing. Loosely thread the banjo bolts to the Rotrex supercharger using one copper crush washer on top of the fitting and one on the bottom of the fitting. Attach a 5/16" oil hose onto the "OUT" fitting of the Rotrex compressor (marked on the top of the Rotrex, closest to the engine block) and secure with the spring clamp provided.

**Step 14:** Attach a 5/16" oil hose to the "IN" fitting (marked on the top of the Rotrex) and secure with a spring clamp provided. Torque both banjo bolts at this time to 15 ft lbs.

**Step 15:** Lower the supercharger assembly down into the area where it is to be mounted. The oil hoses should be hanging from the bottom of the engine compartment between the oil pan and the sub frame at this point.

**Step 16:** Take your time routing these and all oil hoses so that they don't get crushed between the engine block and the supercharger or kinked so that the oil flow is restricted.

**Step 17:** Lower the supercharger mounting bracket into the engine compartment. Install the four Rotrex mounting bolts (these bolts are in the Rotrex supercharger or the supercharger box) through the mounting bracket and into the Rotrex supercharger. The two banjo bolts should be at the top, in horizontal alignment at this point. They should not be on the side of the supercharger in a vertical alignment or facing down. Carefully tighten the four 6mm Rotrex mounting bolts evenly applying 6ft lbs torque to the mounting bolts. We recommend applying a small amount of thread locking compound, supplied with the kit, to these bolts.

**Step 18:** Lift the supercharger/bracket assembly into place so that the assembly can be bolted to the front of the two mounting brackets installed earlier. Install the four 8x1.25x25mm mounting bolts through the supercharger mounting plate and into the two mounting brackets. Torque these bolts to 16 ft lbs.

**Step 19:** Your supercharger is now successfully mounted. You will need to do some testing to determine what belt length your particular system is going to need. On most 2.0 liter K series engines with stock engine block deck height and a Type S crank pulley your belt length is going to be approximately 67" long with the 100mm supercharger drive. If you are using an under-drive water pump or alternator pulleys, this will affect your belt length. Route your drive belt as you normally would and install it using the stock belt tensioner.

**Step 20:** From this point you will need to determine how you will mount your intercooler and your oil cooler. Remember to always mount the oil cooler so that it gets as much air as possible.

**Step 21:** You will need to fabricate your inlet to the Rotrex. We recommend using smooth radius silicone hoses or aluminum "U" bends to connect to a high flow air filter. This inlet needs to have a 1" tube connected to it so that the bypass valve can be routed to it. If you are planning on using a simple "blow off" valve vented to atmosphere this tube will not be required.

**Step 22:** Fabricate your supercharger exit to the intercooler using smooth radius aluminum “U” bends and silicone hoses. The Rotrex compressor outlet is 2” or 2.5” in outside diameter. We recommend using 2.5” tubing whenever possible.

**Step 23:** From the intercooler route the air to the throttle body using 2.5” tubing whenever possible. Install a 1” bypass fitting to the exit tubing so that the bypass valve can be connected to the inlet tubing to avoid compressor surge. If you are using a “blow off” valve vented to atmosphere this tube will not be required.

**Step 24:** If your vehicle originally had the air temperature fitting mounted in the rubber inlet hose, you will need to weld the billet air temperature sensor mounting boss to the intercooler exit tube just prior to the throttle body. This will allow the ECU to adjust timing and fuel based on inlet air temperature. Install the supplied “O” ring on the air temperature sensor and lube the oil ring with oil or spray lubricant. Push it into the fitting and secure it with the 4mm screws provided with your kit. Apply Loctite locking adhesive to these screws.

**Step 25:** Connect the bypass valve to the inlet/outlet tubes using 1” heater hose. This hose is readily available at most auto parts stores. You can purchase 1” hose by the foot from KraftWerks as well.

BE VERY CAREFUL TO KEEP PIPES AND HOSES SEALED AND CLEAN UNTIL YOU ARE READY TO INSTALL THEM. THE ROTREX SUPERCHARGER RUNS AT SPEEDS AS HIGH AS 100,000 RPM ON K-SERIES KITS. ANY DEBRIS THAT INADVERTENTLY GETS INTO THE INLET PIPES OR STUCK TO THE SILICONE HOSES WILL GET SUCKED INTO THE ROTREX SUPERCHARGER AND WILL DAMAGE THE COMPRESSOR BLADES. COMPRESSOR BLADE DAMAGE IS NOT COVERED BY THE ROTREX 2 YEAR WARRANTY.

Once you have finished your install, it is time to prime the Rotrex system and start the car.

## **SECTION 5: PRIMING YOUR ROTREX SUPERCHARGER**

**Step 26:** Fill the Rotrex reservoir to within 1” from the top with genuine Rotrex “traction” oil. Never use any oil other than genuine Rotrex oil or the “traction drive” system will fail. Loosen the “IN” banjo fitting on the supercharger (furthest from the engine block). Using a small amount of compressed air, blow into the Rotrex oil reservoir while covering the opening with a shop towel to prevent any oil from spraying out and to force a small amount of air pressure inside. Watch the “IN” oil fitting until you see oil coming from the fitting. This will verify that oil has traveled through the filter and is ready to be drawn into the Rotrex. Once oil has leaked from the banjo fitting, re-torque the fitting and check the oil level in the Rotrex oil reservoir.

**Step 27:** Watch the Rotrex reservoir carefully during initial start up, as it will be filling the oil cooler and lines during this initial start up. Make sure it does not run dry. Double-check all the connections at your coolant hoses, intercooler piping, and vacuum hoses. Check your engine oil level and fill if necessary.

**Step 28: IMPORTANT:** Always check the Rotrex oil level once the engine has warmed up completely. Raise the rpm to 2000-3000 rpm and hold it there for 5-10 seconds. Allow the car to come to an idle and check the oil level after the car has come back to an idle and completely warmed up. **ALWAYS CHECK THE ROTREX OIL LEVEL WHEN THE ENGINE IS COMPLETELY WARMED UP. RAISE THE RPM TO 2000 RPM AND HOLD IT THERE FOR 15 SECONDS. ALLOW THE CAR TO COME TO AN IDLE AND CHECK THE ROTREX OIL LEVEL AFTER THE CAR HAS COME BACK TO AN IDLE.**

**THE ROTREX OIL LEVEL SHOULD BE ABOUT HALFWAY BETWEEN THE MIN AND MAX ON THE ROTREX DIP STICK ONCE THE OIL SYSTEM IS LEVEL.\***

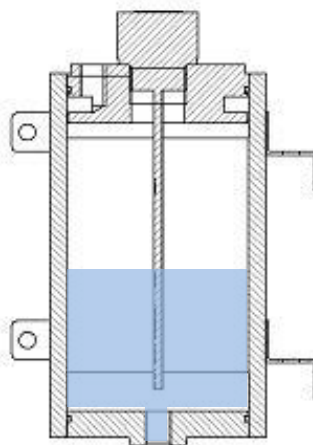


Figure 4: Proper Rotrex Oil Level

\*Do not overfill the Rotrex oil reservoir. If you overfill the Rotrex oil reservoir, it will leak from the vented cap when you are in the upper RPM ranges. The Rotrex system draws oil through the supercharger and sends it, at low pressure and volume, to the oil cooler. It takes some time for the system to find its “normal” operating level. Follow the instructions for bringing the engine to 2000RPM and then check the oil immediately after bringing it to an idle with the engine completely warmed up.

***Enjoy your KraftWerks Supercharger System!***