

# ***Rotrex C-range Superchargers***

*Setup and Maintenance*



**ROTREX™**

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# Introduction

Thank you for choosing Rotrex and congratulations on your new Rotrex supercharger!

Rotrex superchargers are based on a patented high-speed planetary traction drive. Through innovative technology, advanced materials, and quality control, we strive to make this product the best in the market. To get the most out of your Rotrex supercharger and to avoid issues, carefully follow the instructions in your supercharger kit documentation and this leaflet.

The guidelines in this leaflet are only for general issues, please contact your Rotrex dealer or go to [www.rotrex.com](http://www.rotrex.com) for all specifications and requirements of the Rotrex supercharger.



## WARNING!

Before beginning any installation of the Rotrex supercharger, read and familiarize yourself with all the accompanying literature.

Do not attempt to install this product before discussing the details with your Rotrex dealer. Make sure you have the necessary technical knowledge and experience with forced induction systems.

In case there are any questions prior to or during the installation of the unit or kit, please contact your Rotrex dealer.

Disconnect the battery of the vehicle before starting any installation or maintenance work.

## DANGER – ROTATING PARTS!



Do not put hands or fingers near the running Rotrex supercharger. Suction is extremely powerful and can cause loose clothes, hair, and fingers to be sucked into the unit with risk of serious injury.



The surfaces of the supercharger, the connected air hoses and oil lines are hot during and after the supercharger has been in operation.

Allow the supercharger and hoses to cool or wear gloves while working on the supercharger.



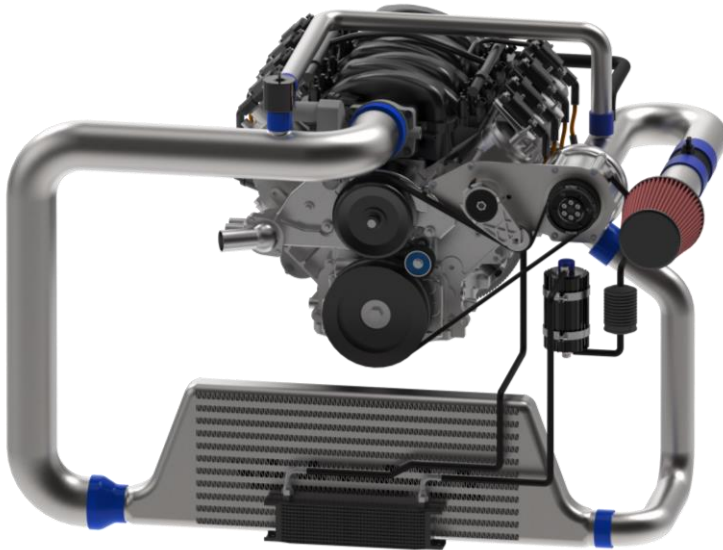
Use protective eyewear when working near the running Rotrex supercharger. Keep tools, body parts, hair etc. clear of the pulley and drive belt while the engine is running.

# Key Points

For best performance and durability please follow the key points stated below:

- Prior to initial start-up make sure to prime the supercharger oil system (see page 9). Failure to do so may result in severe damage.
- The oil used must be the specially developed Rotrex SX150 traction fluid.
- The Rotrex supercharger should only be operated in one rotational direction. Never turn the pulley in the incorrect direction by hand or otherwise. For your unit, please find the correct rotational direction in the technical datasheet found on **[www.rotrex.com](http://www.rotrex.com)**
- To avoid engine damage: make sure to run the appropriate fuel grade (octane). If any sign of knocking is detected immediately discontinue running the engine under boost conditions until the problem has been solved.
- It is important to place the Rotrex supercharger as the highest component in the system (s/c and oil system, see page 5) and with the flat surface of the supercharger facing downwards within +/- 15° to horizontal.
- Check the supercharger oil level after initial start-up. Always follow the correct procedure for oil level check (see page 10)
- To secure optimal oil conditions: Do not modify or change the oil circuit supplied with your kit.
- Always respect the oil and filter change interval and procedure (see page 11)
- Always follow the correct pulley ring changing procedure (see page 12).
- Always take care not to over tighten the supercharger bracket and banjo bolts as this will strip the threads. Follow the torque specified in your kit installation instructions or download the datasheet available at **[www.rotrex.com](http://www.rotrex.com)**

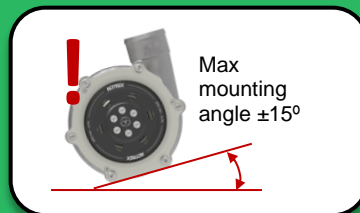




## NOTE!

Always place, store, transport and operate the Rotrex supercharger within  $\pm 15^\circ$  to horizontal flat surface facing down.

Failure to do so may lead to oil spills and oil pump starvation, resulting in catastrophic failure.



# Lubrication system

The Rotrex superchargers incorporate an independent dry sump lubrication system. Please follow these instructions closely during installation. If your supercharger was bought as part of a kit, please refer to the kit documentation.

## IMPORTANT!

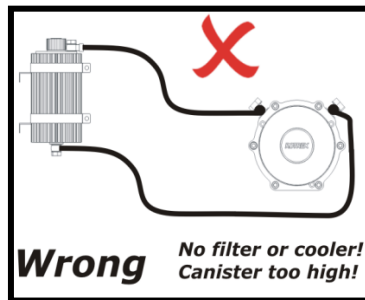
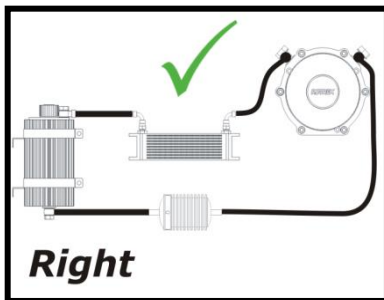
The Rotrex supercharger has been developed and extensively tested with Rotrex SX150 traction fluid. Using other oils will lead to internal slip in the supercharger traction drive, which will cause damage to the supercharger.

To maintain the ultimate level of performance and durability it is very important that the unit is exclusively run with Rotrex SX150 traction fluid.

The lubrication circuit provided with the kit is an integrated and essential part of the supercharger system.

To ensure performance and durability: Carefully follow the instructions provided with your kit on how to install the lubrication circuit in the vehicle.

- Make sure there is no debris in the oil system before beginning the installation.
- Engine vibration and movement must be considered when placing the components and while routing the oil lines.
- The oil lines and the oil system components (filter, canister and cooler) must be placed below or level with the Rotrex supercharger shaft.

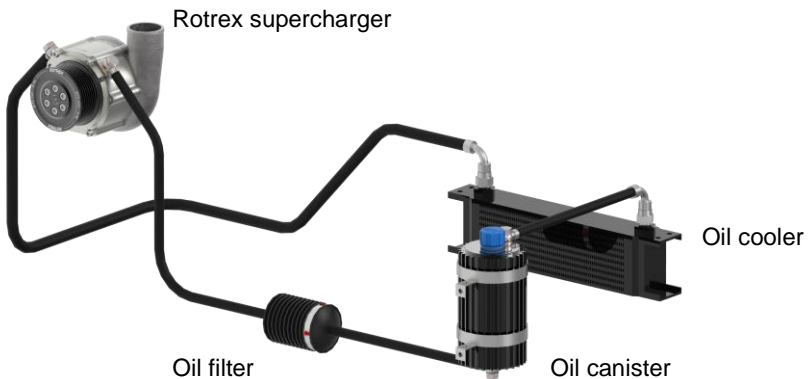
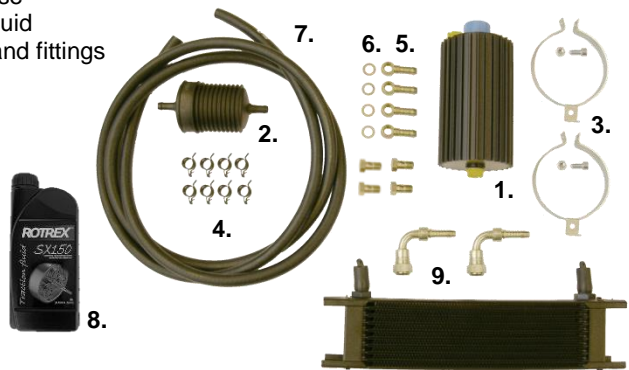


- Place the oil cooler where the risk of external clogging (debris, stones, sand etc.) is minimal.
- Place the oil canister where sufficient space allows for easy and safe oil level checking (see page 10)

## The oil system components

The following components are supplied with the Rotrex supercharger. Only use original Rotrex oil hoses for the oil system as the traction fluid is corrosive to some materials

1. Oil canister fitted with dipstick in the blue cap
2. Inline oil filter
3. 2 x oil canister brackets
4. 8 x hose clamps
5. 4 x banjo and banjo bolts
6. 8 x copper washers
7. Approx. 2,5m oil hose
8. 1L SX150 traction fluid
9. Optional oil cooler and fittings



## Routing of the oil lines

### IMPORTANT!

When routing the oil supply and return lines: Care must be taken to prevent cracks and cuts.

An undiscovered oil leak will cause catastrophic failure to the supercharger and can damage the engine.

Please note the below tips to correctly install the oil system:

- Make sure there is sufficient clearance from moving parts such as the ventilator fan, belts, and pulleys etc.
- Oil lines must be routed at a safe distance from the exhaust system and other hot parts.
- To prevent restricted oil flow only use large radius bends when routing the oil hoses and avoid any sharp bends and kinks.
- Prime the oil system correctly prior to initial start-up (see page 9)

## Connect the components

### IMPORTANT!

Tightening torque of the banjo bolts: 21Nm (15lbft)

Tightening torque of the oil cooler fittings: 21Nm (15lbft)

1.



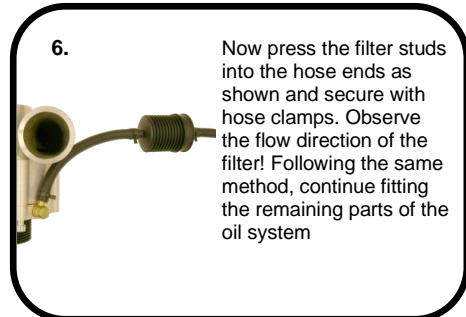
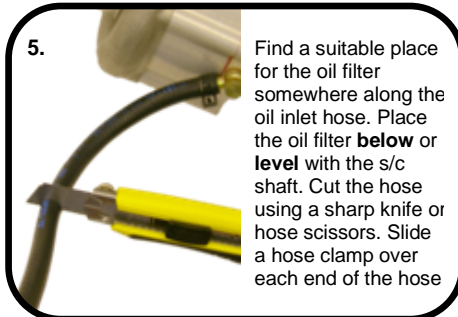
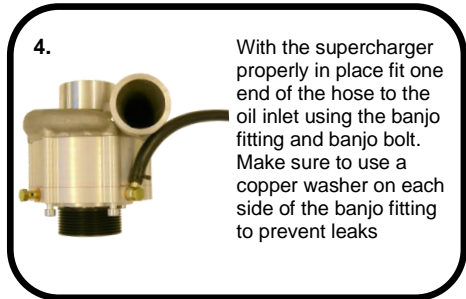
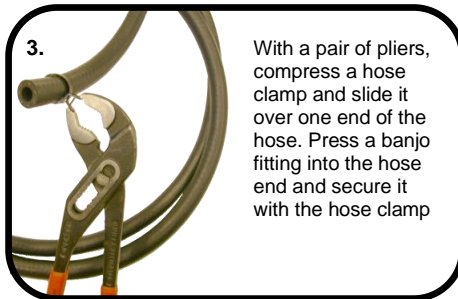
Place the oil canister with the cap **below** or **level** with the supercharger shaft. Use the bracket supplied in the oil set. Make sure the canister is placed upright. Leave the plastic plugs in place to prevent debris from entering the system

2.

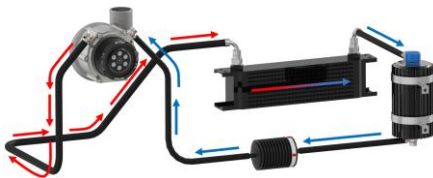


Mount the oil cooler in front of other coolers in a location with good air flow. Place the oil cooler **below** or **level** with the supercharger shaft. The threads for the fittings must be facing upwards to prevent air pockets

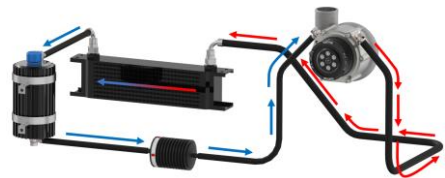




Clockwise direction



counterclockwise direction



The finished oil system is shown above with oil flow direction as indicated by the arrows. Oil flows from the oil canister through the filter into the compressor oil inlet. The compressor oil outlet routes through the cooler before entering the oil canister at the top.

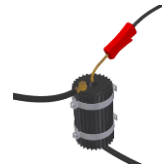
To prevent oil leaks it is of utmost importance that the oil cooler, oil filter and the oil canister with its cap are placed **below** or **level** with the supercharger shaft.

# Initial Start-up

To ensure proper traction fluid circulation and adequate lubrication, it is important to prime the oil system before the engine is started for the first time after the supercharger installation.

The priming procedure is most easily done with all oil components in place and installed.

1. Fill the oil canister with traction fluid. You can calculate the total amount of oil required using the calculator on our website [www.rotrex.com](http://www.rotrex.com)
2. The banjo bolt at the oil line attached to the supercharger inlet marked **IN** should be loosened a couple of turns allowing air to escape the system.
3. **Carefully** apply pressurized air to the oil filler hole at the top of the canister. **Do not** pressurize the system to more than one bar or 15psi. Use a rag or a sponge as a seal between the air gun and the canister.
4. When oil appears at the oil inlet, tighten the banjo bolt and the system is primed. The two following steps should be completed within 1 minute – if not, re-prime the system.
5. Top up the oil canister.
6. Turn on the engine and rev it to 2-3000 rpm and make sure the oil starts flowing; the oil level will drop and then settle once when the oil starts returning. Be ready to add some oil to the canister if the oil level gets too low!
7. Let the engine idle for 5 minutes while checking the oil system for leaks.
8. Check the oil level using the correct procedure (see page 10).
9. A run-in period of 100 km (65 miles) is highly recommended. During this run-in period, drive the vehicle carefully and avoid unnecessary revving and heavy acceleration.



## IMPORTANT!

Under no circumstances can the canister run dry; this can cause damage to the supercharger!

# Oil level checking and maintenance

## MAINTAIN YOUR SYSTEM!

The oil and filter change interval of the Rotrex supercharger is 80.000 km / 50.000 miles or two years, whichever comes first.

Always keep the oil level between minimum and maximum.

Overfilling the Rotrex supercharger may cause oil leaks from the top of the canister, and too little oil may cause severe damage to the unit.

## Oil level checking procedure

Check the oil level using the correct oil level checking procedure as described below.

- Set the engine speed between 2 and 3000 rpm.
- Remove the dipstick and wipe it clean.
- Check the oil level while the engine is kept running at 2 – 3000 rpm.
- The correct oil level is between the min and max marking of the dipstick measured with the thread of the cap fully engaged.

## IMPORTANT!


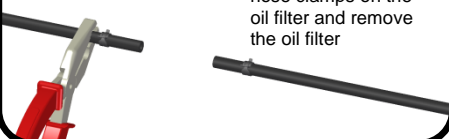
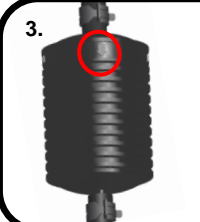

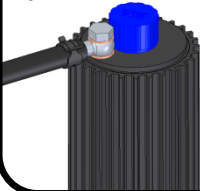
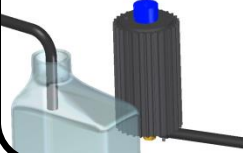

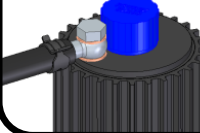
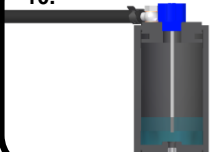
The procedure above is the correct and only way to check the oil level. Checking the oil level with the engine turned off does not give a correct reading.

## Testing

Upon completion of the installation, the vehicle must be tested thoroughly. Testing should identify any leaks, noise, vibration, improper alignment of belt, overheating or other faults in the installation. It should also ensure the engine is running properly with the correct air/fuel ratio and ignition timing. Incorrect installation or use of the supercharger can cause severe damage to the supercharger and/or the engine.

# Oil and filter change procedure

Please see below procedure for correct oil and filter replacement:

<p>1.</p>  <p>To avoid traction oil spilling into the engine compartment, use brake hose pliers to clamp the oil hose as close to the oil filter as possible on the oil canister side (filter inlet)</p>	<p>2.</p>  <p>Slide away the two hose clamps on the oil filter and remove the oil filter</p>
<p>3.</p>  <p>Mount the new oil filter. Make sure to mount the filter in the correct direction according to the arrows on the filter indicating the correct oil flow direction. Slide the two oil hose clamps back to the correct position</p>	<p>4.</p>  <p>Remove the brake hose pliers</p>
<p>5.</p>  <p>Clean all the oil hose connections on the oil canister to prevent any debris or dirt from entering the oil circuit</p>	<p>6.</p>  <p>Remove the top banjo bolt and sealing washers on the canister. Remove the hose and let the old oil flow into a temporary open oil reservoir (min. capacity 1 liter)</p>
<p>7.</p>  <p>Remove the canister cap</p>	<p>8.</p> <p>Start up the engine and let it idle while continually adding new Rotrex traction oil to the canister and letting the old traction fluid drain into the temporary oil reservoir. Always observe the canister to make sure it never empties. Continue to pour in Rotrex traction oil until approximately 800ml has been flushed through the system and then stop the engine</p>
<p>9.</p>  <p>Remount the canister's oil inlet hose and remember to replace the copper washers with new ones</p>	<p>10.</p>  <p>Top up the canister and check the oil level as per the procedure on page 10</p>

# Pulley change procedure

## IMPORTANT!

Always use the original pulley bolts, supplied with your Rotrex supercharger

If the supercharger is removed to perform the procedure, make sure to prime the oil system after reinstallation (see page 9)

Do not remove the pulley adapter (hub with centre bolt behind the pulley ring) from the supercharger – since 2022 the pulley adapter is a fixed part of the supercharger.

To change the pulley, carefully follow the below procedure:

- Disconnect the battery.
- Remove the belt from the pulley.
- **Without rotating the pulley**, carefully loosen the 6x M6 Torx30 bolts from the pulley.



- Remove the pulley from the Rotrex supercharger.
- Install the new pulley on the pulley adapter using the original bolts supplied with the Rotrex supercharger.
- Without rotating the supercharger shaft, tighten the 6 bolts in a cross pattern to a torque of 10Nm.
- Install the pulley belt, make sure the dynamic tensioner is adjusted to the new size. Consult with your Rotrex dealer to make sure your belt is the correct length.

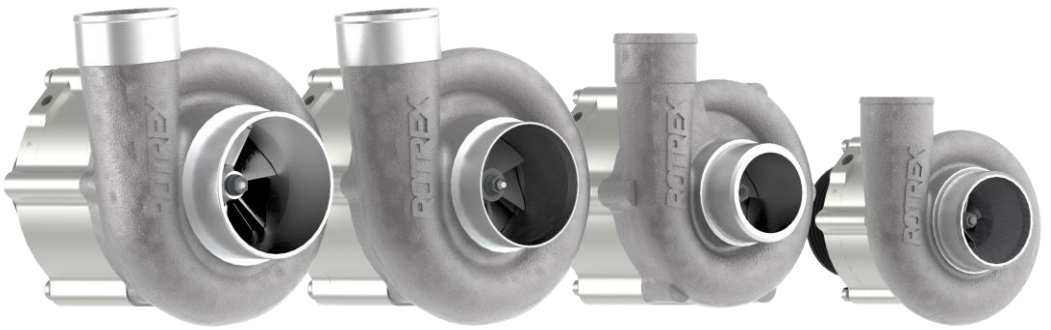
# Warranty

For warranty issues and other questions please contact your Rotrex dealer.

Parts found to be defective due to misuse will not be honoured for warranty or other associated liabilities. The guidelines in this leaflet are only for general issues, please contact your Rotrex dealer or see [www.rotrex.com](http://www.rotrex.com) for all specifications and requirements of the Rotrex supercharger system.

If the Rotrex supercharger has been disassembled, has had the pulley adapter removed, the pulley incorrectly replaced or has been altered in any other way the warranty will be void.

Rotrex is not responsible for any special, incidental, or consequential damages or costs incurred due to the failure of this product



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