

# ***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, quality control and in-house manufacturing, 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 for general purposes only, 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

This leaflet contains information on the lubrication system, initial start-up and maintenance only! Refer to supercharger kit installation documentation provided by the dealer and/or the technical handbook for further information.

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

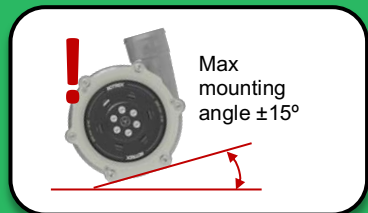
- ✓ Prior to initial start-up make sure to prime the supercharger lubrication system correctly (see page 10) and avoid dry running of the planetary traction drive.  
**Failure to prime your Rotrex supercharger lubrication system correctly will result in severe damage.**
- ✓ Always use Rotrex SX150 traction fluid.
- ✓ The Rotrex supercharger should only be operated in one rotational direction. Never turn the pulley in the incorrect direction.
- ✓ It is important to place the Rotrex supercharger as the highest component in the system (s/c and lubrication system, see page 6) and installed with the flat surface of the supercharger facing downwards within +/- 15° to horizontal.
- ✓ Always follow the correct procedure for oil level check (see page 11)
- ✓ To ensure optimal oil conditions: Do not modify or change the lubrication circuit supplied with your kit.
- ✓ Always respect the oil and filter change interval and procedure (see pages 11-12)
- ✓ Always follow the correct pulley changing procedure (see page 13).
- ✓ Take care not to overtighten 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 +/- 15° 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.

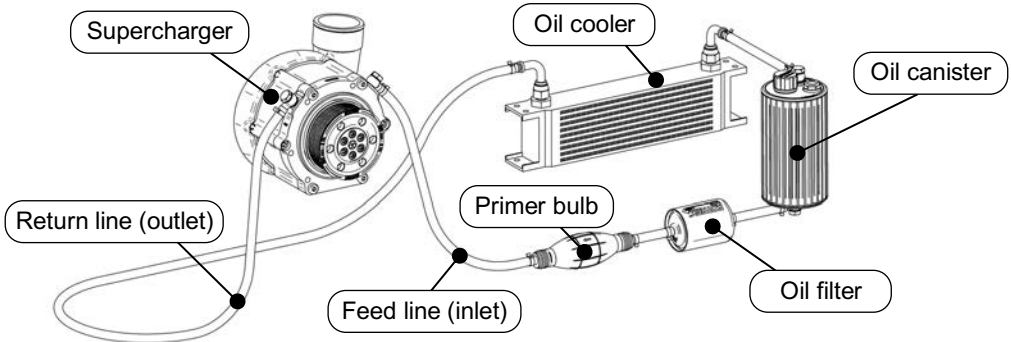
## IMPORTANT!

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

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

## The lubrication system components

The following components are typically supplied with the Rotrex supercharger. Some kits may differ from original Rotrex components. Only use original Rotrex oil hoses for the lubrication system as the traction fluid can dissolve some materials.



1x Rotrex Supercharger

1x Oil canister

2x Oil canister brackets with bolts/nuts

1x In-line oil filter

1x In-line primer bulb

10x Hose clamps

4x Banjo fittings

4x Banjo bolts M10x1.0

8x Copper washers

2,5m Oil hose

1L SX150 traction fluid

1x Oil cooler and fittings (optional)

## Placement of the components

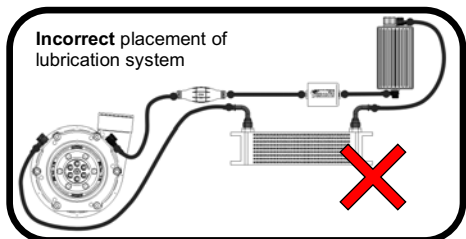
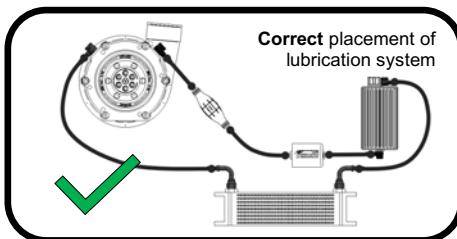
The lubrication circuit provided with the kit is an integrated and essential part of the supercharger system. Carefully follow the instructions for correct placement

If you purchased the supercharger as part of a kit, carefully follow the instructions provided with your kit on how to install the lubrication circuit in your vehicle. Also refer to the technical handbook for further details (available for download at [www.rotrex.com](http://www.rotrex.com))

### IMPORTANT!

All lubrication components must be placed **level** or **below** the centreline of supercharger. If placed above the centreline, there is a risk of leaks and discharge air contamination.

- ✓ Place the oil canister in an accessible location for easy oil level checking and visual flow indication (see pages 10-11)
- ✓ Place the oil cooler where the risk of external clogging (debris, stones, sand etc.) is minimal.
- ✓ Place the oil cooler in front of other coolers in a location with good air flow.
- ✓ The in-line traction fluid filter and primer bulb must be placed in the feed line.
- ✓ Place the primer bulb at an accessible location for easy priming and maintenance.



## Install the lubrication system

Before installing the traction fluid lubrication system, take care to check each component for debris, dirt or other type of contamination.

The original banjo fittings and bolts must be used with the oil canister and supercharger.



### Banjo bolt and fitting

For banjo bolts and fittings, always install a copper washer on each side of the banjo.

**NOTE** Do not re-use copper washers, if the banjo bolt has been tightened.



### Hose barb and clamp

Banjo fittings, oil filter, primer bulb and oil cooler all use Ø8mm hose barbs. The oil hose simply slides on and is secured with the provided hose clamps.

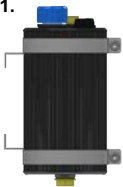
## IMPORTANT!

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

Tightening torque of the oil cooler AN6 fittings: **19Nm (14lbft)**

Carefully follow the installation instructions below for a standard Rotrex traction fluid lubrication system. If you purchased your Rotrex supercharger as part of a kit, please follow the steps described in your kit manual provided by your Rotrex dealer.

1.



Install the oil canister in an upright position, with the blue canister cap facing upwards. Use the brackets supplied in the oil set.

Take note of the **“feed line”** (bottom) and **“return line”** (top) markings.

2.



Install the oil cooler in a well-ventilated area in front of other coolers. To prevent air pockets, the fittings on the oil cooler must be facing upwards.

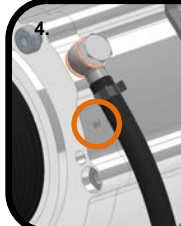
There is no preferred flow direction on the oil cooler.

3.



With a pair of pliers, install a hose clamp on one end of the oil hose. Press a banjo fitting into the hose and secure it with the hose clamp.

4.



With the supercharger properly fitted to the bracket, fit one end of the hose to the oil inlet marked **“IN”**, using the banjo fitting and banjo bolt.



5.

Find a suitable place to install the oil filter along the inlet hose (feed line).  
**The flow direction arrow must point towards the S/C IN!** Cut the hose, press in the filter and secure it with hose clamps.



6.

Find a suitable place to install the primer bulb along the inlet hose (feed line).  
**The flow direction arrow must point towards the S/C IN!** Cut the hose, press in the bulb and secure it with hose clamps. Take care to prevent kinks.



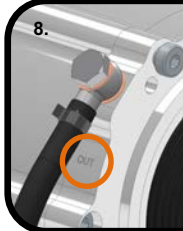
7.

Now, install the oil hose between the filter, bulb and canister "FEED" (bottom) using a banjo fitting, bolt, 2 copper washers and clamp.



8.

Follow the same procedure for the return line. Connect a hose with a banjo fitting fitted and connect it to the oil outlet on the supercharger marked "OUT" using the banjo fitting and banjo bolt.



9.

Cut the hose to appropriate length and install the hose on one end of the oil cooler hose barbs and secure it with a hose clamp.



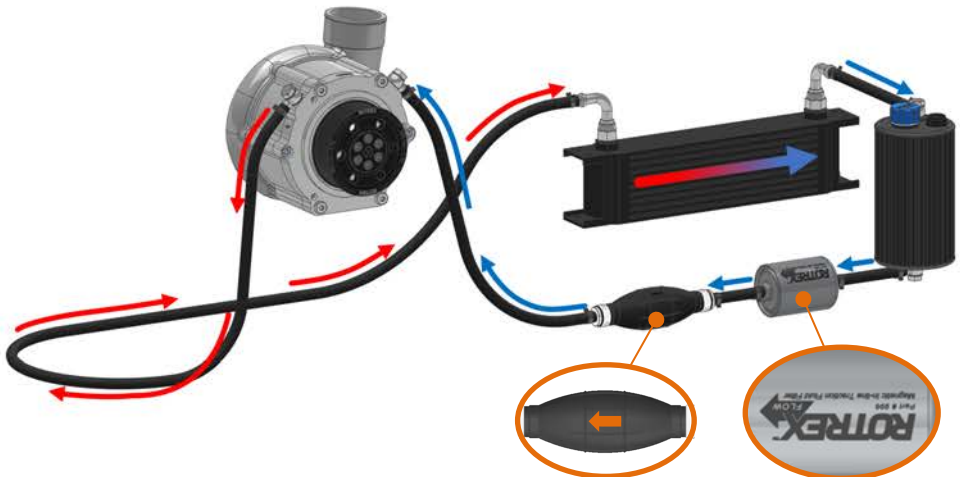
Make sure to tighten the AN6 hose barbs correctly on the oil cooler.

10.

Lastly, install the oil hose between the other end of the oil cooler and canister "RETURN" (top) using a banjo fitting, bolt, 2 copper washers and clamp.



Below illustration is a **clockwise** supercharger installation with the complete lubrication system installed. Please note the oil flow direction marked with blue and red arrows.



## Routing of the oil lines

### IMPORTANT!

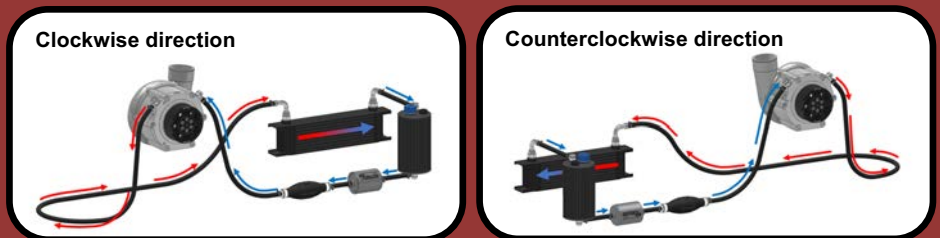
When routing the oil feed and return lines; Care must be taken to prevent cracks and cuts. An undiscovered oil leak will cause irreversible damage to the supercharger and can damage the engine.

Please follow below recommendations for correct installation of the lubrication 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.
- ✓ Engine vibration and movement must be considered when placing the components and while routing the oil lines.
- ✓ To prevent restricted oil flow only use large radius bends when routing the oil hoses and bulb to avoid any sharp bends and kinks. (min. bend radius 75mm)

### IMPORTANT!

Take care not to swap the feed- and return-line, as this will cause dry running of the traction drive and lead to irreversible damage shortly after startup. Pay special attention to the rotation direction of your Rotrex supercharger model.



The finished lubrication system is shown above with oil flow direction as indicated by the arrows. Oil flows from the oil canister through the filter and bulb into the compressor oil inlet (**feed line**). The compressor oil outlet routes through the cooler before entering the oil canister at the top (**return line**).


## Initial Start-up and priming

### IMPORTANT!


Priming of your new Rotrex supercharger is the **single most important part** of a successful Rotrex supercharger installation. Incorrect priming will lead to dry running of the high-speed planetary traction drive and will cause irreversible damage.


1.  With the blue canister cap removed, fill up the oil canister with SX150 traction fluid, to just below the threaded hole. Use the one-time-use funnel to fill up the canister without spilling.

Canister volume ~400ml

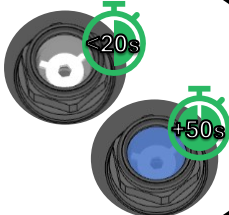
2.  Carefully squeeze the primer bulb by hand to prime the feed line. The bulb slowly expands after each squeeze. When the bulb becomes firm, give it one more squeeze. **Typically, 7-10 squeezes in total are required.**

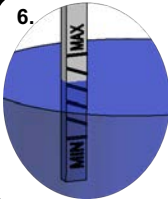
3.  Refill the oil canister with SX150 traction fluid. Take care not to overfill the lubrication system. **Typically, 400-650ml is enough.** The correct amount of traction fluid can be calculated on our website (QR code or) [www.rotrex.com/calculators](http://www.rotrex.com/calculators)

4.  Turn on the engine and let it idle, while paying attention to the oil level in the canister by looking into the fill hole. **Be prepared to add SX150 traction fluid to avoid air pockets in the oil feed line.** The oil level should be below half full.


5.  After 20-50 seconds the oil will return from the supercharger and the flow indicator on the oil canister will turn blue, confirming oil flow. If the above time is exceeded, check the installation and restart the priming procedure from step 2.

Depending on engine idle speed and pulley ratio, the indicator may pulsate or be partially blue. This is ok. Above 3.000rpm it must be solid blue.



6.  Check the correct oil level by following the procedure on page 11.

Overfilling of the system is not harmful to the Rotrex supercharger but will cause oil spilling.

7.  Use the QR-code to be redirected to our website where you can calculate the total lubrication system volume depending on the supercharger model, cooler size and total hose length.

[www.rotrex.com/calculators](http://www.rotrex.com/calculators)

# 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 every **two years**, whichever comes first.

Always keep the oil level between minimum and maximum.

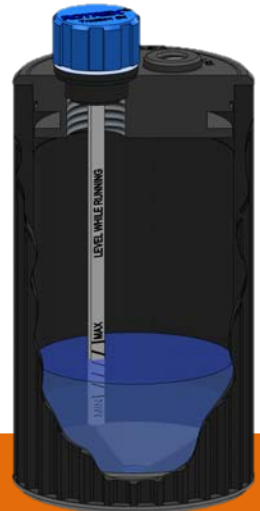
Overfilling the Rotrex supercharger may cause oil leaks from the top of the canister, and too little oil may cause severe damage to the unit.

## Oil level checking procedure

Check the oil level using the procedure described below.

1. Start the engine and let it idle
2. Remove the dipstick and wipe it clean
3. Check the oil level using the dipstick with its thread fully engaged

**The correct oil level is between the “MIN” and “MAX” marking of the dipstick**



## 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 11.</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 10)

Do not remove the pulley adapter (hub with centre bolt behind the pulley ring) from the supercharger

To change the pulley, carefully follow the below procedure:

1. Disconnect the battery.
2. Crack loose the 6x M6 Torx30 bolts from the pulley ring – do not remove the bolts completely at this point.
3. Loosen the belt tensioner and remove the drive belt from the pulley.
4. Remove the 6x M6 Torx30 bolts and pulley from the Rotrex supercharger.
5. Install the new pulley on the pulley adapter using the original bolts supplied with the Rotrex supercharger, tightened by hand.
6. 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.
7. Without rotating the supercharger shaft, tighten the 6 bolts in a cross pattern to a torque of 10Nm. (7.5lbf).



# 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 for general purposes only, please contact your Rotrex dealer or see [www.rotrex.com](http://www.rotrex.com) for all specifications and requirements of the Rotrex supercharger system.

Warranty is void 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.

Rotrex is not liable for any special, incidental, or consequential damages or costs incurred due to the use of this product.



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