

Rotrex Superchargers

Rev. 1

LS Truck Installation Guide



ROTREX™

LS Truck installation guide

LS Truck ('99-'13)

Supercharger Bracket Kit Overview

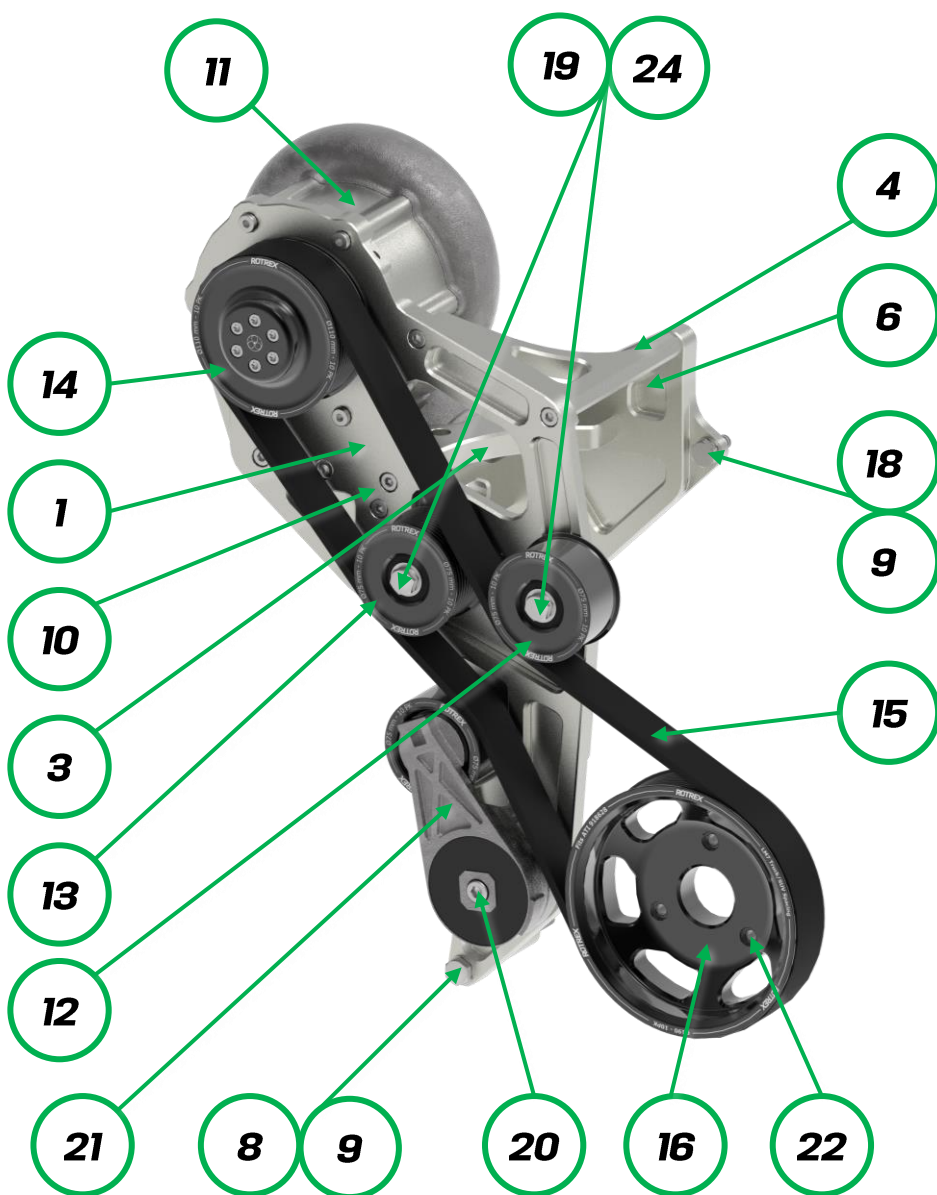
Compatible with:

GM Vortec 5300 Gen III (1999-2007) engines: LM7, L59, and LM4.

GM Vortec 5300 Gen IV (2007-2013) engines: LMG, LC9, LY5, L96

#	Part Name	Qty
1	Front Bracket	1
2*	Cross Brace Part 1	1
3	Cross Brace Part 2	1
4	Cross Brace Part 3	1
5*	Tensioner Spacer	1
6	Cylinder Head Mount	1
7*	Spacer AC Damper	1
8	Hex head bolt M10x120	1
9	Flat Washer Small	2
10	Hex socket head cap screw M8x25	14
11	C38R-122 Supercharger	1
12	Idler Assembly Smooth	1
13	Idler Assembly Ribbed	1
14	Pulley Ring	1
15	Drive belt, 10 rib (PK profile)	1
16	ATI Crank Pulley Ring	1
17*	Hex socket head cap screw M10x25	3
18	Hex head screw M10x25	1
19	Flat Washer Large	2
20	Hex socket head cap screw M10x60	1
21	Belt Tensioner	1
22	Hex socket head cap screw 5/16"x2 1/2"	3
23*	Slotted spring pins 5x12	3
24	Bolt M10x55	2

* Parts are not visible in the current view



LS Truck installation guide

LS Truck ('99-'13)

Introduction

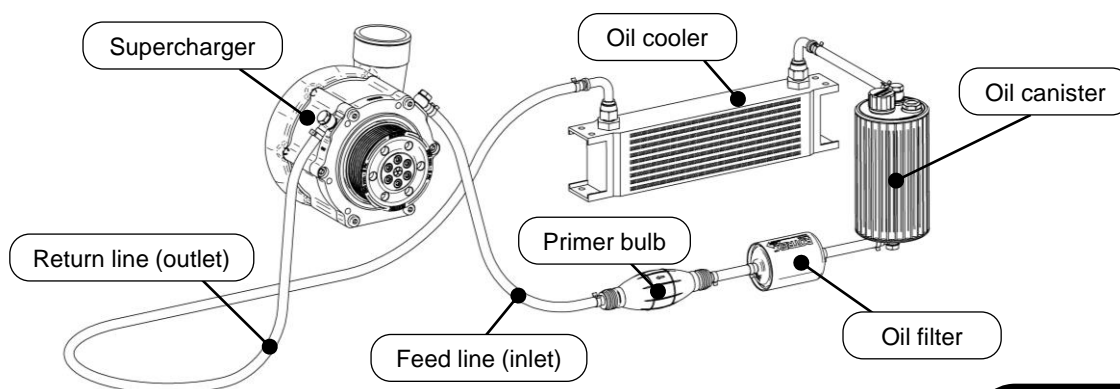
Rotrex Superchargers

Congratulations on your new Rotrex supercharger kit, please follow this manual carefully to successfully install your supercharger kit.

Besides this manual, please visit our website and follow QR codes for additional material, video guides etc.

Supercharger Oil System Overview

The Rotrex supercharger operates with a unique traction drive system, requiring a separate oil system. See the Setup & Maintenance guide for installation.



For installation of the lubrication system, please refer to the setup and maintenance guide

LS Truck installation guide

LS Truck ('99-'13)

Introduction

Belt drive & Positioning

This kit is made to fit every supercharger pulley in the Rotrex lineup. By choosing a smaller pulley, you access more horsepower. Be aware that the supercharger is never to be over speeded. To ensure a correct supercharger speed and pulley size, you can use the calculator on our website.

If you want to change the pulley size, you can find our guide for this on our YouTube channel

By using the idler positions, A, B, C and D together with the tensioner angles, E, F & G, this kit is only using one belt for all pulley sizes.

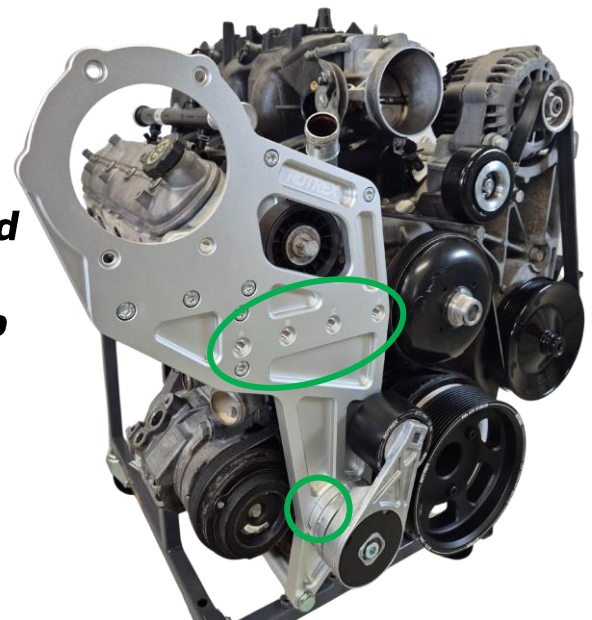


Rotrex how-to video's, including sizing your supercharger pulley.

These settings can be seen in the table on page 19.

If changing the pulley, the belt is de-attached the easiest by using a wrench to turn the belt tensioner just enough for the belt to slip off.

To change the belt tensioner position, it is only necessary to loosen the bolt enough to be able to re-position the tensioner spacer.



LS Truck installation guide

LS Truck ('99-'13)

Introduction

Required Tools and Supplies

- ✓ 5mm Allen Key (3/16")
- ✓ 6mm Allen Key (7/32")
- ✓ 8mm Allen Key (5/16")
- ✓ 17mm Open-end wrench (11/16)
- ✓ Pliers
- ✓ Rubber hammer
- ✓ Torque wrench (range 10-15Nm / 7.4-11 lb-ft) with 5mm (3/16") hex, 6mm (7/32") hex & TX30 Torx bit.
- ✓ ATI Vortec Truck Serpentine Damper Manufacturer Part Number: 918628



QR code for
ATI damper
installation
guide



Setup &
Maintenance
Guide

Disclaimers

- Please be aware that the Rotrex LS Truck Kit is strictly a bracket kit.
- It does not include components such as pipes, intercoolers, tuning, or any other accessories that is not listed in the introduction.
- Ensure you have all necessary additional parts before proceeding with installation.
- In some extreme cases, it may be necessary to fixate the ATI damper to the crank shaft, with additional pinning or other type of fastening, to prevent crank pulley slipping.



Technical
Handbook



Rotrex how-to
section

LS Truck installation guide

LS Truck ('99-'13)

Bolts, Pins & Washers

Please refer to these pages, if in doubt of which bolt, nut or washer to use



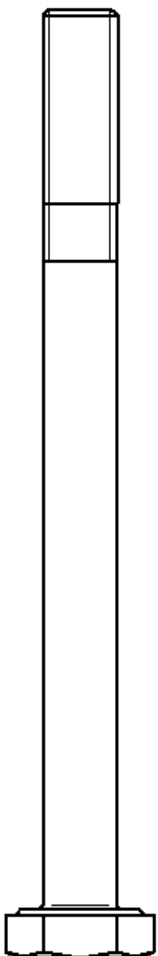
These illustrations are scaled 1:1, so you can place the part to localize the model.

The bolts and washers are packed in 3 numbered bags.

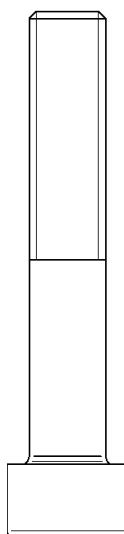
Bag 1: For mounting on the engine

Bag 2: For connecting the brackets

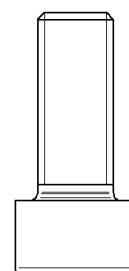
Bag 3: For the remaining



M10x120 Hex Head Bolt



M10x60 Hex Socket Head Cap Screw



M10x25 Hex Socket Head Cap Screw

LS Truck installation guide

LS Truck ('99-'13)

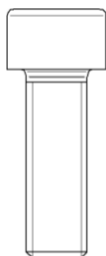
Bolts, Pins & Washers

Please refer to these pages if in doubt of which bolt, nut or washer to use

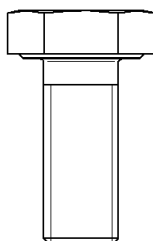


These illustrations are scaled 1:1, so you can place the part to localize the model.

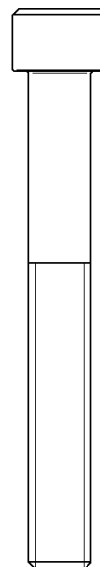
M8x25 Hex Socket Head Cap Screw



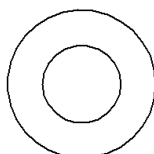
M10x25 Hex Head Screw



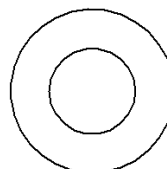
5/16x2 ½ Hex Socket Head Cap Screw



Flat Washer Small



Flat Washer Large



LS Truck installation guide

LS Truck ('99-'13)

Preparing for Bracket Kit

STEP 1:



Remove accessory belt drive and original crank pulley

Take notice of the accessory belt drive routing so that you can replicate it after mounting the ATI damper.

STEP 2:



Install ATI damper (part nr: 918628) and follow instructions according to the ATI installation guide. Re-Install accessory belt drive.

QR code for ATI damper installation guide

LS Truck installation guide

LS Truck ('99-'13)

Preparing for Bracket Kit

STEP 3.1:

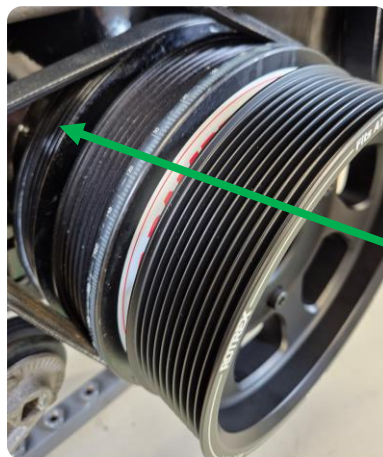


Install 3x pins (no. 23, bag 3) in the Rotrex crank pulley ring using a plier to compress the pins. It may be necessary to gently tap in the pins with a soft type of hammer. Make sure the pins are fully seated.



When removing the original bolts, keep the alignment of the bolt holes in the damper system

STEP 3.2:



Attach the crank pulley ring to the ATI crank pulley by hand aligning the pins with pinholes.

Install 3x bolts (no. 22, bag 3). Make sure they bolt into the rear crank AC drive pulley clamping the damper assembly together. Tighten to 15 Nm (11 lb-ft).

LS Truck installation guide

LS Truck ('99-'13)

Assembling Bracket Kit

STEP 4:

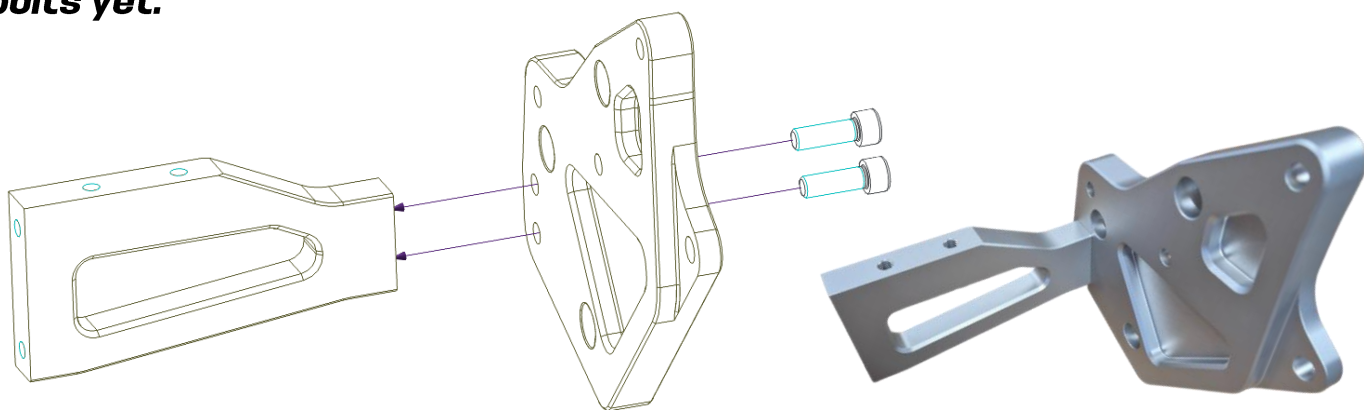


Remove original bolt at the AC tensioner (passenger side).

The bolt can be discarded as this will no longer be needed.

STEP 5:

Mount Cross Brace Part 1 (no. 2) onto the cylinder head mount bracket (no. 6) using 2x bolts (no. 10, bag 2). Apply thread locker, but do not tighten the bolts yet.



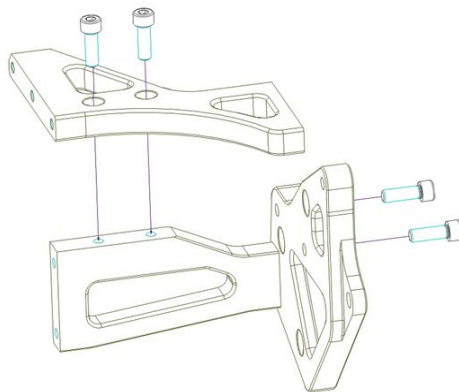
LS Truck installation guide

LS Truck ('99-'13)

Assembling the Bracket Kit

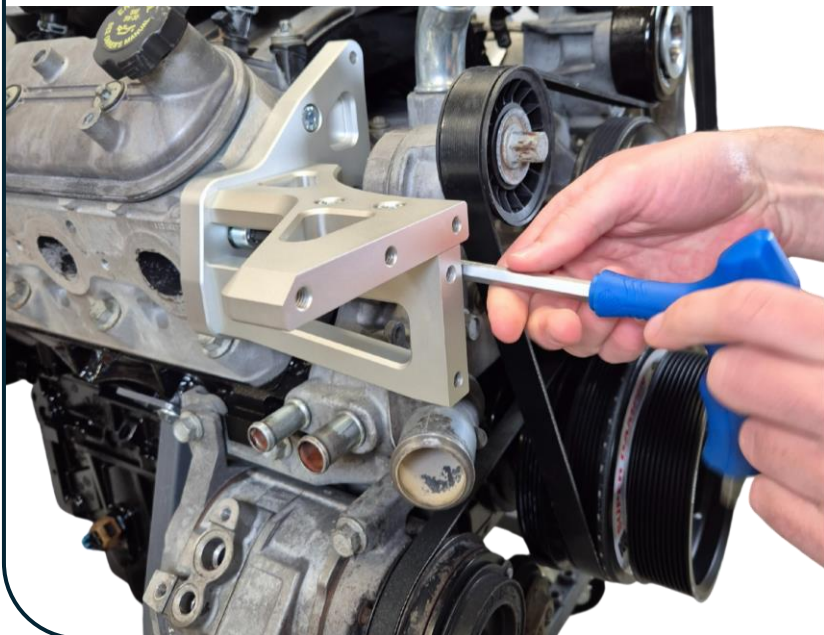
STEP 6:

Mount Cross Brace Part 2 (no. 3) onto the sub assembly using 4x bolts (no. 10, bag 2). Apply thread locker & tighten all six bolts to 15 Nm (11 lbf-ft).

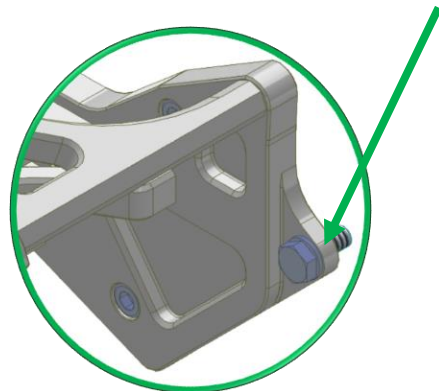


STEP 7:

Mount the sub-assembly to the engine using 3x bolts (no. 17) & 1x bolt with washer (no. 18 & 9, bag 1). Apply thread locker & tighten all the bolts to 15 Nm (11 lb-ft).



Notice:
placement of bolt no. 18



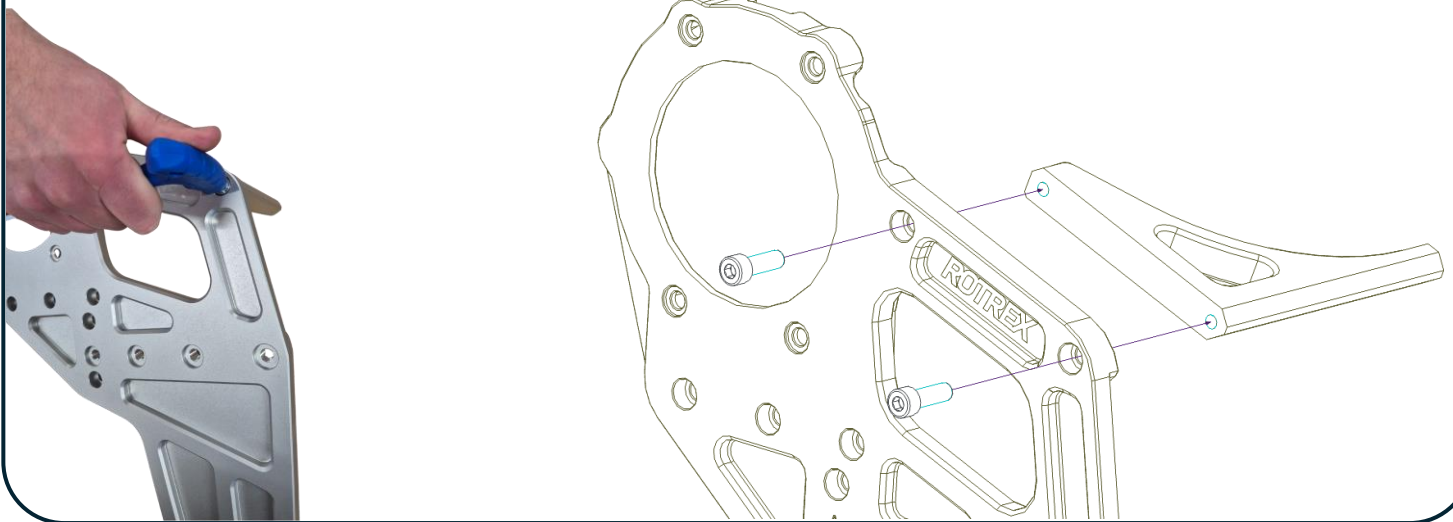
LS Truck installation guide

LS Truck ('99-'13)

Assembling the Bracket Kit

STEP 8:

Mount Cross Brace Part 3 (no. 4) onto the Front Bracket (no. 1) using 2x bolts (no. 10, bag 2).



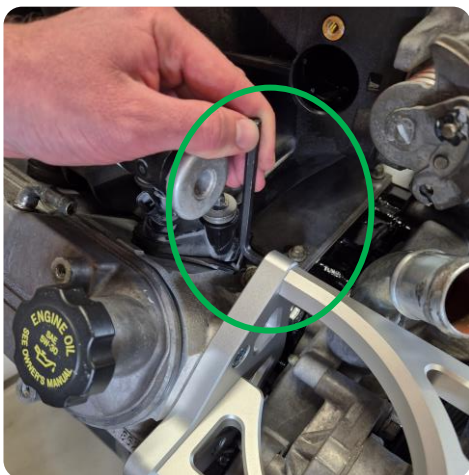
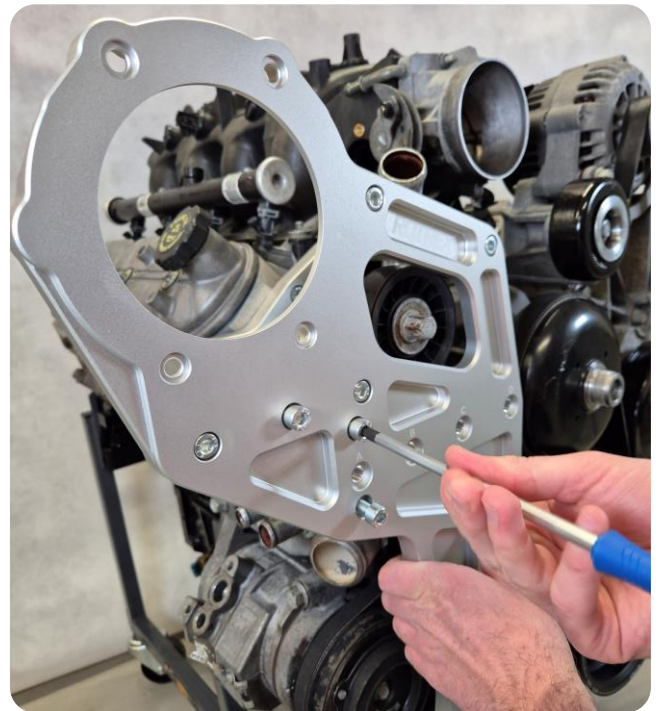
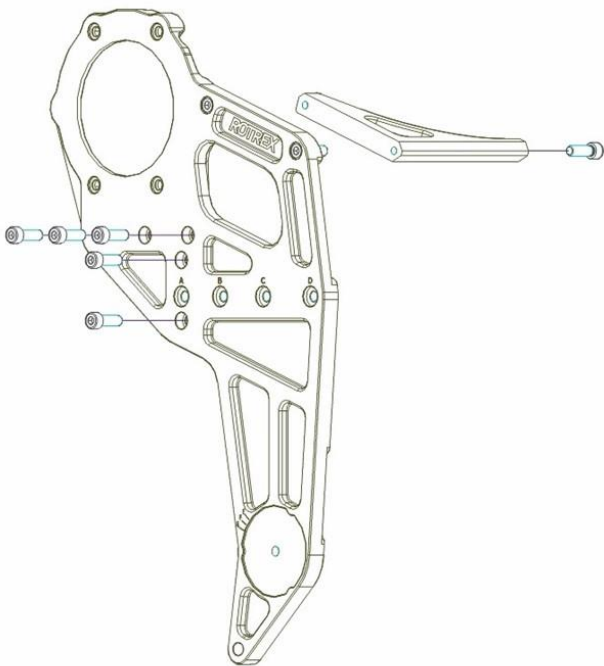
LS Truck installation guide

LS Truck ('99-'13)

Assembling the Bracket Kit

STEP 9:

Mount the Front Bracket (no. 1) assembly to the assembly on the engine using 6x bolts (no. 10, bag 2) in the following bolt holes & 1 behind the Cross Brace Part 3 (no. 4). Use thread lock, but do not tighten yet.



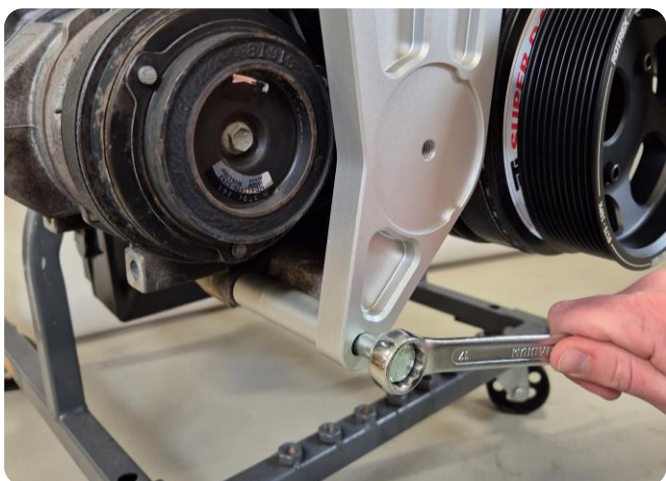
The rear bolt can be tricky to install because of limited space, using a short Allen key eases the installation

LS Truck installation guide

LS Truck ('99-'13)

Assembling the Bracket Kit

STEP 10:



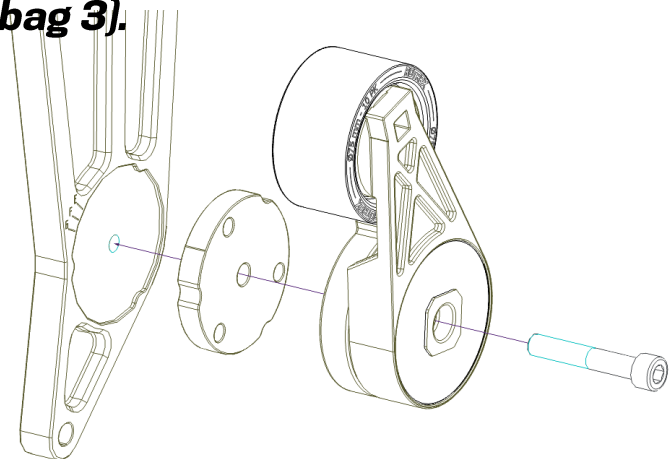
Mount the Spacer AC Damper (no. 7) between the Front Bracket (no. 1) and the AC tensioner, using a bolt and washer (no. 8 & 9, bag 1). Apply thread locker.

Now tighten all bolts to 15 Nm (11 lb-ft), including those installed in step 9.

STEP 11:

Mount the Tensioner spacer (no. 5) and tensioner onto the front bracket in the correct position (according to Supercharger Pulley size, see page 19). Use Bolt (no. 20, bag 3).

Be aware that the tensioner in position E is very close to the crank pulley. Make sure these do not make contact.

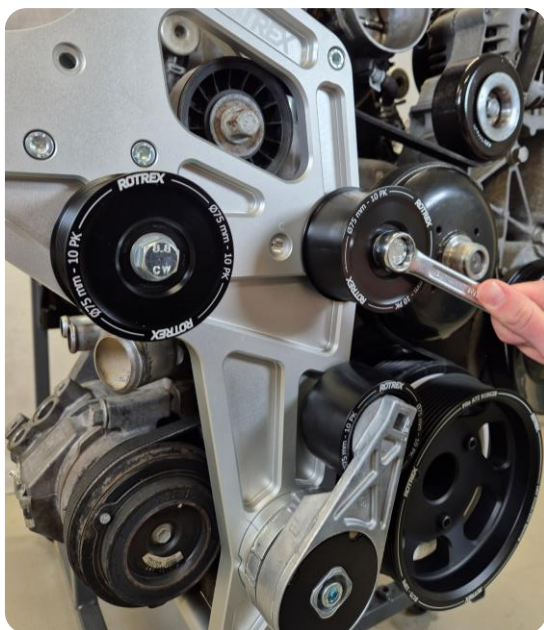


LS Truck installation guide

LS Truck ('99-'13)

Assembling the Bracket Kit

STEP 11:



Mount the idlers on the Front Bracket, in the correct positions according to your Supercharger Pulley (see page 19). Use 2x bolts and washers (no. 19 & 24, bag 3). Tighten to 15 Nm (11 lb-ft).



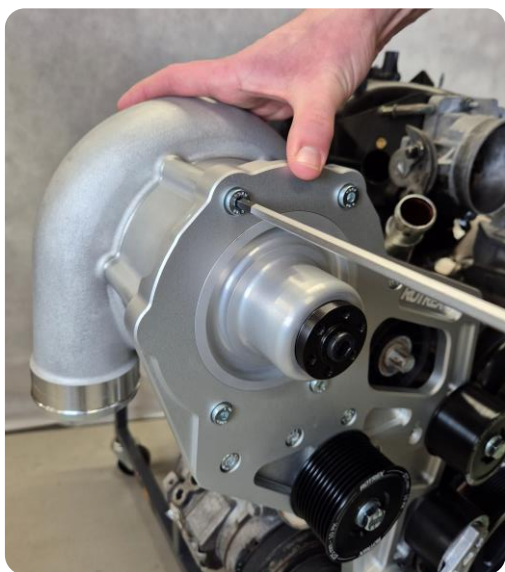
Be aware that the center shaft of the idlers is loose until fitted to the bracket.

LS Truck installation guide

LS Truck ('99-'13)

Assembling the Bracket Kit

STEP 12:



Carefully install the Supercharger on the bracket, using the supercharger bolts loosely fitted to the supercharger out of the box.

Take care to have the compressor housing set in the desired position before mounting.

It is important to follow the correct changing orientation procedure to prevent damaging the compressor wheel!



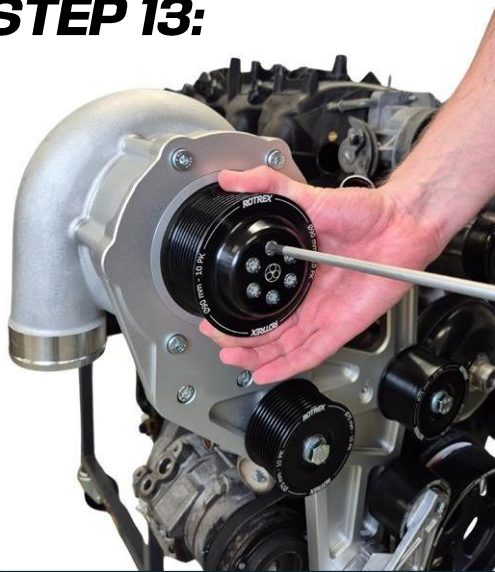
***Guide on
rotating the
compressor
housing***

LS Truck installation guide

LS Truck ('99-'13)

Assembling the Bracket Kit

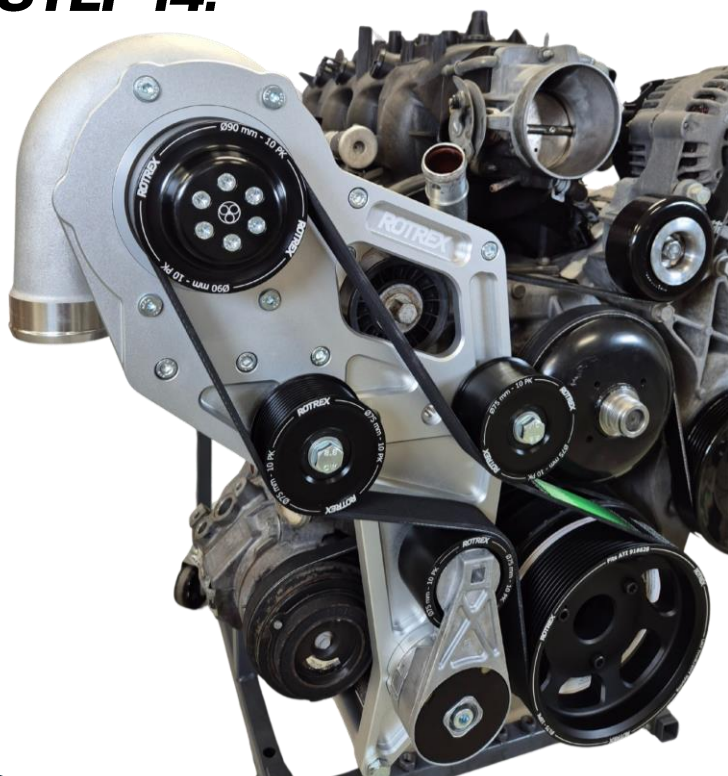
STEP 13:



Install the supercharger pulley ring and tighten the six bolts by hand. Pulley ring bolts are found in the supercharger box.

Make sure the pulley ring is seated correctly, and bolts are fastened in a cross-pattern to prevent tilting.

STEP 14:



Mount the drive belt in the displayed routing (or see Belt Routing Guide on page 19).

With the belt sitting correctly, the 6x pulley ring bolts (located in the supercharger box) on the supercharger is tightened to 10Nm (7.4 lb-ft)



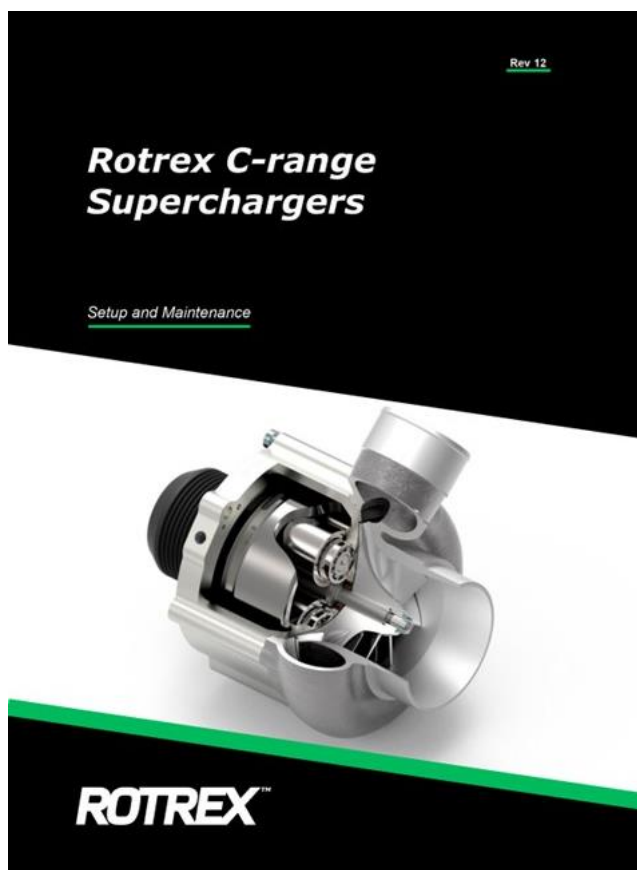
Mount the belt on all fixed components and slide onto the tensioner lastly

LS Truck installation guide

LS Truck ('99-'13)

Assembling the Bracket Kit

STEP 15:



Final step is installation of the lubrication system.

Carefully follow the setup and maintenance guide.

When all other accessories are installed, prime your supercharger prior to startup, following the priming procedure in the setup and maintenance leaflet.



**Setup &
Maintenance
Guide**

You are now set!

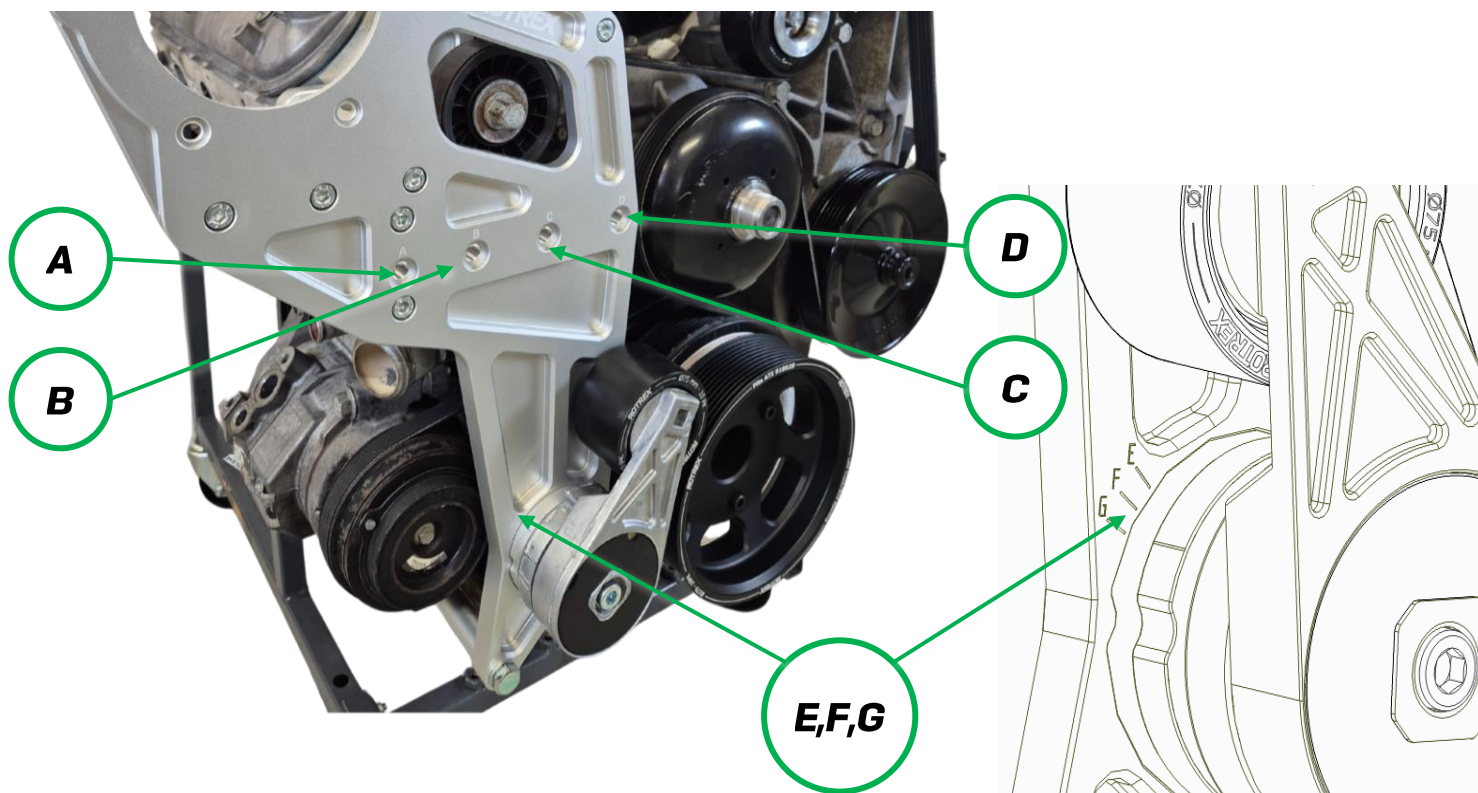
LS Truck installation guide

LS Truck ('99-'13)

Belt Routing Guide

To place the idlers and tensioner in the correct position, please refer to this table:

Supercharger Pulley Size	Tensioner Position	Ribbed Idler Position	Smooth Idler Position
75	E	A	C
80	F	A	C
85	G	A	C
90	E	A	D
95	F	A	D
100	E	B	D
105	F	B	D
110	G	B	D

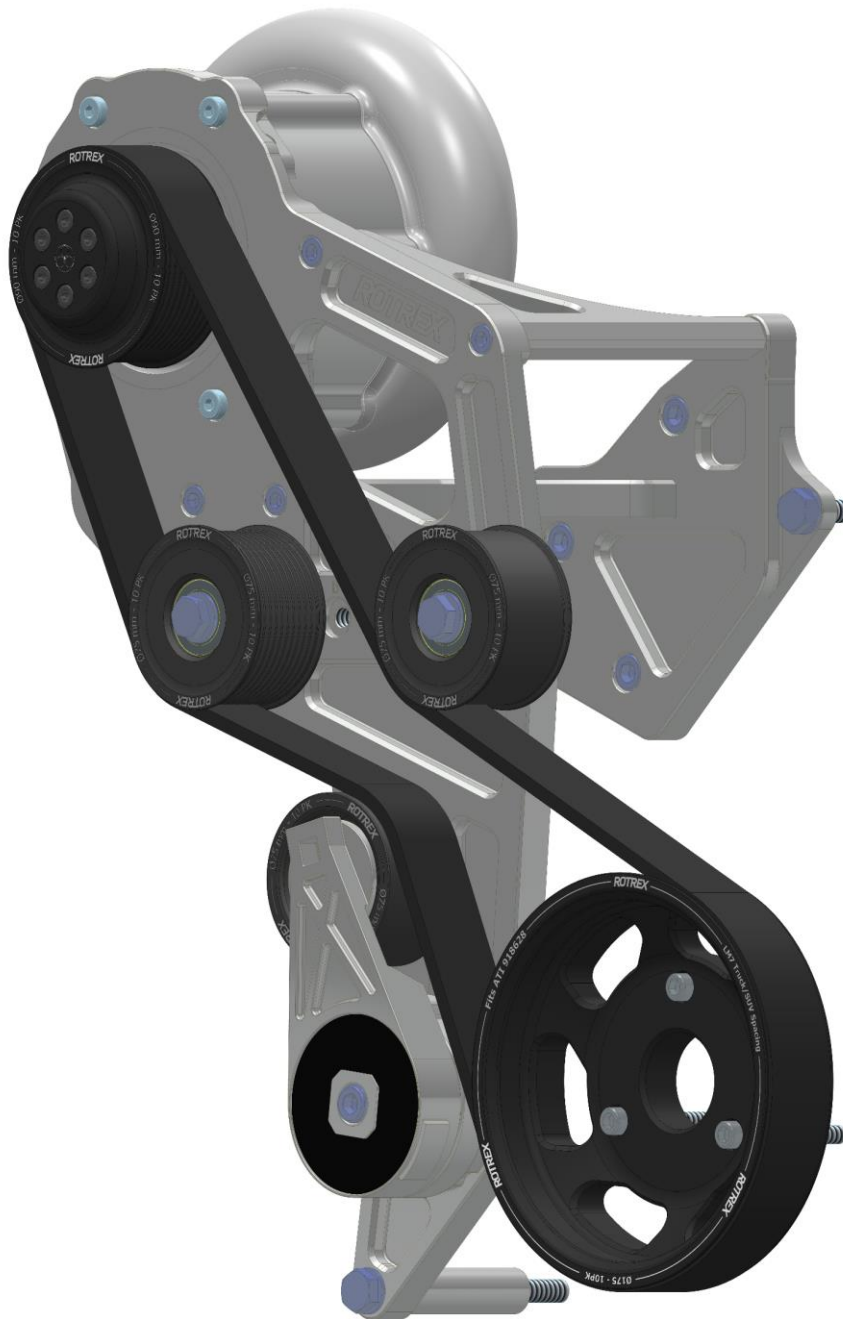


Rotrex Superchargers

LS Truck installation guide

LS Truck ('99-'13)

GM LS Vortec 5300 Supercharger Kit



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