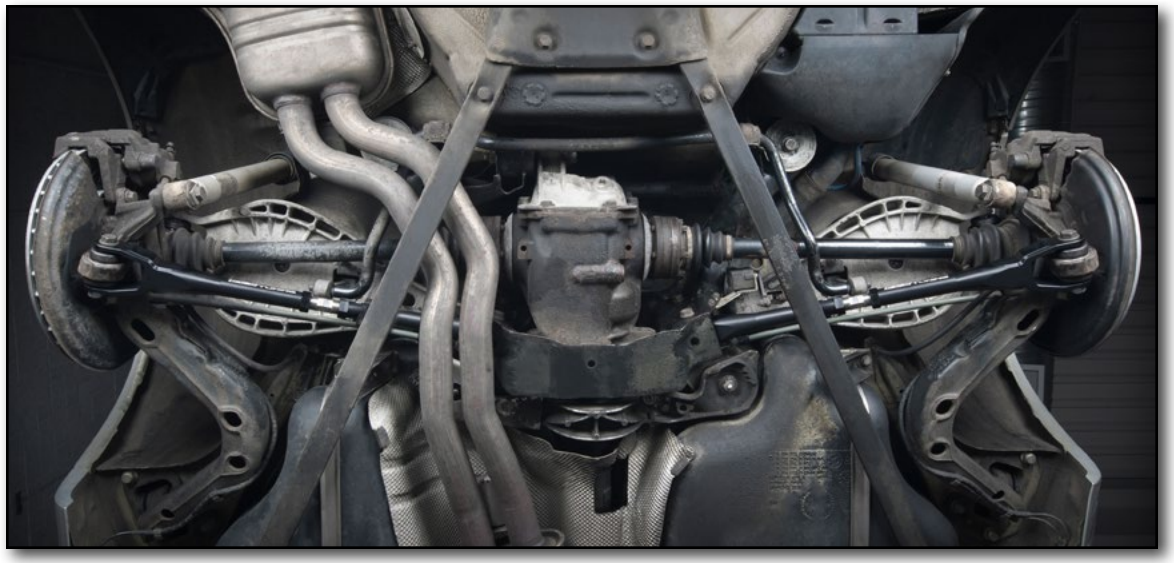
BMW E36/E46 Adjustable Rear Lower Control Arm Set
Installation Instructions - ES2682175

Skill Level
2 - Moderate

Some Experience Recommended



INTRODUCTION

The Project:

Installing the ECS Tuning adjustable rear control arms onto your E36 or E46 BMW is a very rewarding project that will provide substantial gains in suspension technology and dependability. This control arm set has been designed by the experts at ECS Tuning in order to provide you with OEM style fitment, while still providing a wide range of adjustments.

Before you begin, make sure you have all the required tools and information on hand, and don't forget to schedule a four wheel alignment with a qualified repair facility. Thank you for purchasing our ECS Tuning Adjustable Rear Control Arms, we appreciate your business!

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KIT CONTENTS

- Adjustable Rear Lower Control Arms **(QTY 2)**
- Outer Control Arm to Trailing Arm Bolts **(QTY 2)**
- Outer Control Arm to Trailing Arm Nuts **(QTY 2)**

INSTALLATION NOTES

- **RH** refers to the ***passenger side*** of the vehicle.
- **LH** refers to the ***driver side*** of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process **BEFORE** you begin.

GENERAL PREPARATION AND SAFETY INFORMATION

ECS Tuning cares about your health and safety, please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

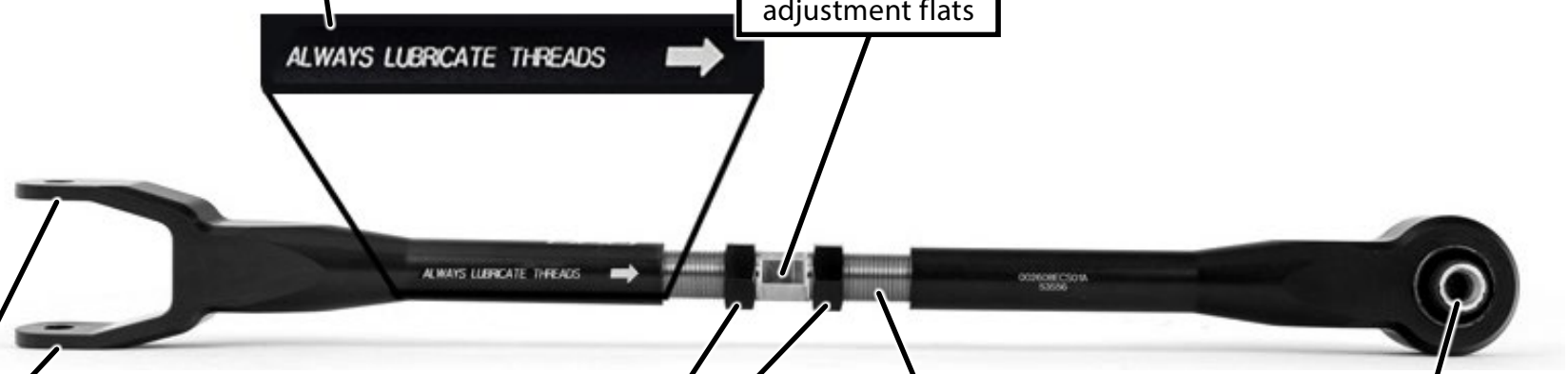
- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- Whether lifting a vehicle using an automotive lift or a hydraulic jack, be sure and utilize the factory specified lift points.
- Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- **ALWAYS** support the vehicle with jack stands.
- **ALWAYS** read and follow all safety information and warnings for the equipment you are using.

NEVER get underneath a vehicle that is supported only by a jack, and ALWAYS make sure that the vehicle is securely supported on jack stands.

ADJUSTABLE REAR LOWER CONTROL ARM SPEC SHEET

The turnbuckle threads will come pre-lubricated with anti-seize. If the arms are adjusted or disassembled after initial installation, be sure to re-lubricate the turnbuckle to prevent thread galling.

The suggested starting length for the adjustable control arms is 559mm, **measured from the center of the bushing to the center of the bolt**.



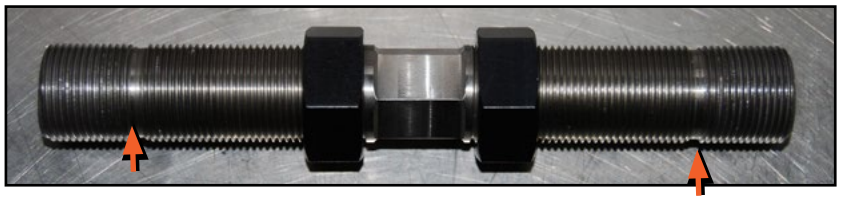
Turnbuckle adjustment flats

303 Stainless Steel Turnbuckle

Use the supplied bolts **HERE**.

Lightweight aluminum turnbuckle lock nuts. Thread them by hand until they are seated against the inner and outer ends, then tighten only a few extra degrees with a wrench. **Do not over-tighten these or you can strip the aluminum**.

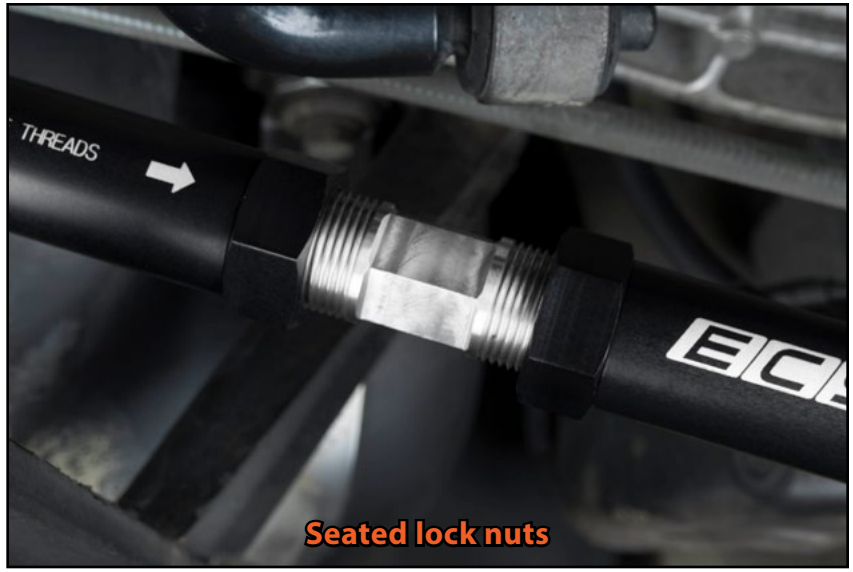
Pre-installed OE style inner bushing. Torque w/the vehicle at ride height.



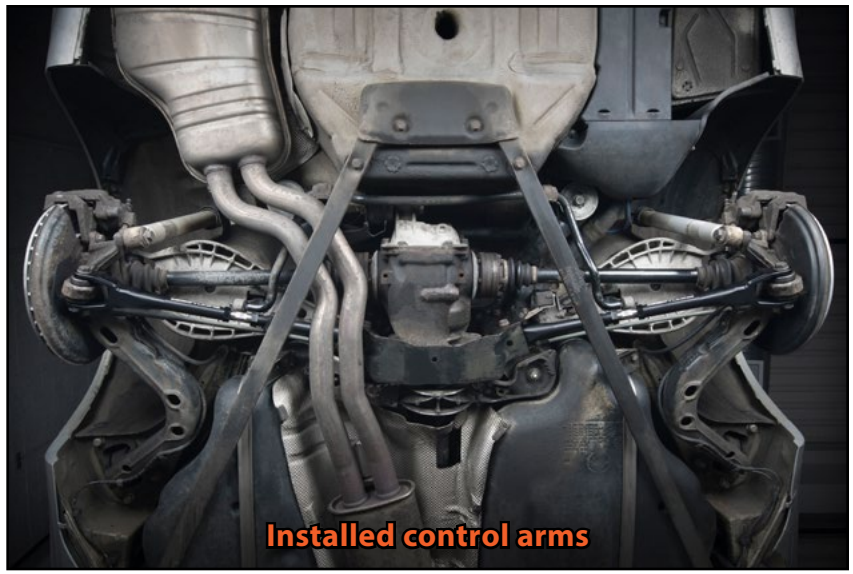
The turnbuckle should be evenly spaced between each half of the control arm. When adjusting, do not extend the control arm halves beyond the grooves (arrows) cut in the turnbuckle threads.

Use the following checklist as a guide for control arm replacement. On Page 9 we have listed all of the necessary torque specifications for the E36 rear suspension to cover the control arms as well as any other replacements/repairs you may be performing at the same time.

- [ ] Raise and securely support the vehicle.
- [ ] Remove both rear wheels.
- [ ] Remove both lower control arm bolts on each side.
- [ ] Remove both lower control arms.
- [ ] Install the new adjustable control arms into place.
- [ ] Install and hand tighten the bolts.
- [ ] Reinstall and torque the rear wheels.
- [ ] Lower the vehicle onto the wheels so it is at ride height.
- [ ] Torque the bolts to the proper specification with the wheels at ride height.
- [ ] Perform a four wheel alignment/tighten the turnbuckle lock nuts.



Seated lock nuts


Installed control arms

Use the following checklist as a guide for control arm replacement. On Page 10 we have listed all of the necessary torque specifications for the E46 rear suspension to cover the control arms as well as any other replacements/repairs you may be performing at the same time.

- [ ] Raise and securely support the vehicle.
- [ ] Remove both rear wheels.
- [ ] **M3 models only:** Remove the rear reinforcing brace.
- [ ] Remove rear underbody shields and insulation as necessary.
- [ ] Unbolt the rear differential from the subframe (this will be required for clearance to remove the inner control arm bolts).
- [ ] Support the rear trailing arms using a jack or adjustable jack stand.
- [ ] Remove both lower control arm mounting bolts, pushing the rear differential towards the rear as necessary to remove the bolts.
- [ ] Remove the original control arms.
- [ ] Install the new adjustable control arms into place.
- [ ] Install and hand tighten the bolts.
- [ ] Reinstall and torque the wheels, then lower the vehicle onto the wheels so it is at ride height.
- [ ] Torque the control arm bolts with the vehicle at ride height, then reinstall braces and shields as necessary.
- [ ] Perform a four wheel alignment/tighten the turnbuckle lock nuts.

TORQUING TIPS

Torque to Yield or "Stretch" Bolts

Many bolts will have a torque specification listed in the format - xx Nm (xx Ft-lbs) + xx degrees. These bolts are torque to yield bolts, commonly referred to as "stretch" bolts. The correct procedure for torquing these bolts is:

Stage One - Torque the bolt(s) to the initial Nm or Ft-lb specification. If there is more than one, be sure to torque them in the correct sequence.
Stage Two - Tighten or "stretch" the bolt(s) the additional specified number of degrees. If there is more than one, be sure to follow the correct sequence.

Note - Some bolts may have two or more stages of torquing before the final stage of "stretching" the bolts.

When tightening more than one bolt in a specified sequence, be sure to mark each fastener with paint ***immediately*** after performing the final stage or "stretching" of the bolts. This will ensure that you keep track of which bolts have already been "stretched".

All Torque to Yield bolts should only be used once and should be replaced each time they are removed. If they are reused, they will not be able to achieve the proper clamping force with the specified torque.

Lubrication

Torque specifications are always listed for a dry fastener (***no*** lubrication) unless specified otherwise.

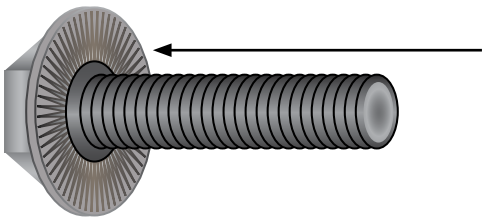
Some fasteners require lubrication on the threads -or- on the contact surface while torquing. These fasteners will be listed with the specific location and type of lubrication required. Always follow manufacturers recommendations exactly.

Lubricating a fastener that is intended to be installed dry and then torquing it to factory specifications will increase the clamping force and stress on the fastener and components, which can result in damage or failure.

Do not lubricate the threads of any fastener unless it is specifically recommended by the manufacturer.

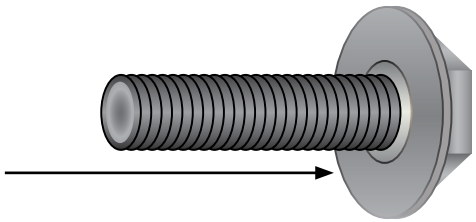
Ribbed vs. Non-Ribbed Bolts

Ribbed and Non-Ribbed bolts in the same location generally require a different torque specification.



A ribbed bolt is identified by the ribs on the contact surface

A non-ribbed bolt is identified by the smooth contact surface



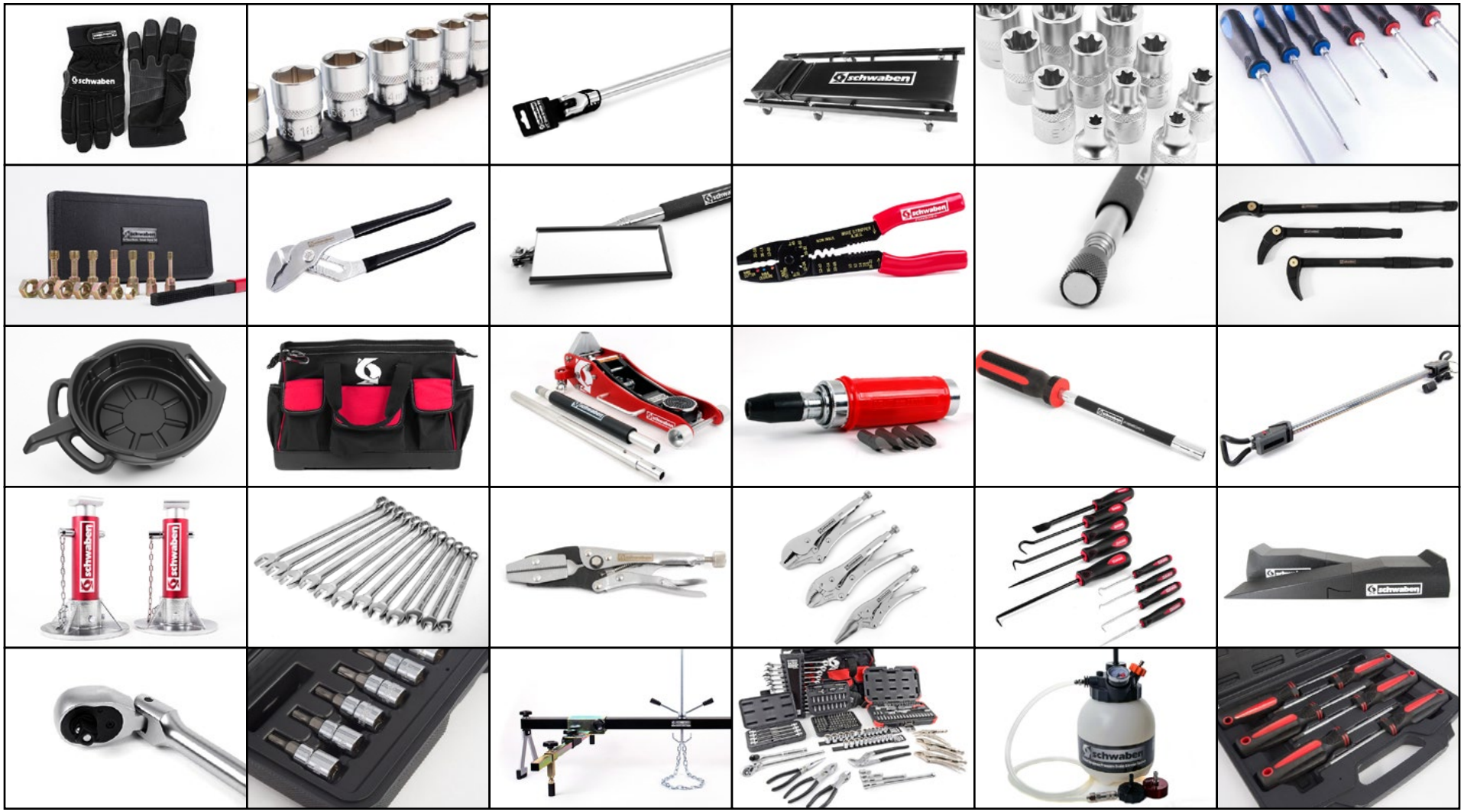
TORQUE SPECIFICATIONS - E36

Differential to subframe front M12 bolt	95 Nm (70 Ft-lbs)
Differential to subframe rear M14 bolt	77 Nm (57 Ft-lbs)
Drive axle collar nut to drive flange	250 Nm (184 Ft-lbs)
Drive axle collar nut to drive flange M3 Models	300 Nm (221 Ft-lbs)
Drive axle to differential flange M8 Torx Bolt	64 Nm (47 Ft-lbs)
Drive axle to differential flange M10 Torx Bolt	83 Nm (62 Ft-lbs)
Drive axle to differential flange M10 Ribbed Bolt	100 Nm (74 Ft-lbs)
Driveshaft to differential flange with CV joint M8 bolt	32 Nm (23 Ft-lbs)
Driveshaft to differential flange with U-joint M10 ribbed nut	80 Nm (59 Ft-lbs)
Driveshaft to differential flange with U-Joint M10 compressed nut	60 Nm (44 ft-lbs)
Lower control arm to subframe M12 bolt	77Nm (57 Ft-lbs)
Lower control arm to trailing arm M12 eccentric bolt	110 Nm (81 Ft-lbs)
Shock absorber to trailing arm	77 Nm (57 Ft-lbs)
Subframe to body	77 Nm (57 Ft-lbs)
Trailing arm bracket to body	77 Nm (57 Ft-lbs)
Trailing arm to front bracket	110 Nm (81 Ft-lbs)
Upper control arm to rear subframe M12 Bolt	77 Nm (57 Ft-lbs)
Upper control arm to trailing arm M12 Bolt	110 Nm (81 Ft-lbs)
Wheels	100 Nm (74 Ft-lbs)

TORQUE SPECIFICATIONS - E46

Differential to subframe front M12 bolt	110 Nm (81 Ft-lbs)
Differential to subframe rear M14 bolt	174 Nm (128 Ft-lbs)
Drive axle collar M24 nut to drive flange	250 Nm (184 Ft-lbs)
Drive axle collar M27 nut to drive flange	300 Nm (221 Ft-lbs)
Drive axle to differential flange M10 x 20mm torx bolt	83 Nm (61 Ft-lbs)
Drive axle to differential flange M10 x 46mm bolt (black)	100 Nm (74 Ft-lbs)
Drive axle to differential flange M10 x 46mm bolt (silver-always replace)	80 Nm (59 Ft-lbs)
Driveshaft to differential flange M10 compression nut	64 Nm (47 Ft-lbs)
Driveshaft to differential flange M10 torx bolt	85 Nm (63 Ft-lbs)
Lower control arm to subframe M12 bolt	110 Nm (81 Ft-lbs)
Lower control arm to trailing arm M12 eccentric bolt	110 Nm (81 Ft-lbs)
Shock absorber to trailing arm	100 Nm (74 Ft-lbs)
Subframe to body M12 bolt, M12 nut to mounting stud	77 Nm (57 Ft-lbs)
Subframe M12 mounting stud to body	90 Nm (66 Ft-lbs)
Trailing arm to front bracket	110 Nm (81 Ft-lbs)
Trailing arm bracket to body	77 Nm (57 Ft-lbs)
Upper control arm to rear subframe M12 bolt	77 Nm (57 Ft-lbs)
Upper control arm to trailing arm M12 bolt	110 Nm (81 Ft-lbs)
V-Brace to differential or body M10 bolt	59 Nm (44 Ft-lbs) + 90 degrees
Wheels	120 Nm (90 Ft-lbs)

At ECS Tuning, we carry a line of high quality Schwaben Tools and Equipment to help you build your ultimate tool collection. Never before has affordability and quality been so closely related. Our entire Schwaben line is subjected to strict in house testing for strength and durability. See what we have to offer and equip your garage without breaking the bank.



Your ECS Adjustable Rear Lower Control Arm Set installation is complete!

These instructions are provided as a courtesy by ECS Tuning

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.