



BMW E36/E46 Adjustable Rear Lower Control Arms Installation Guide



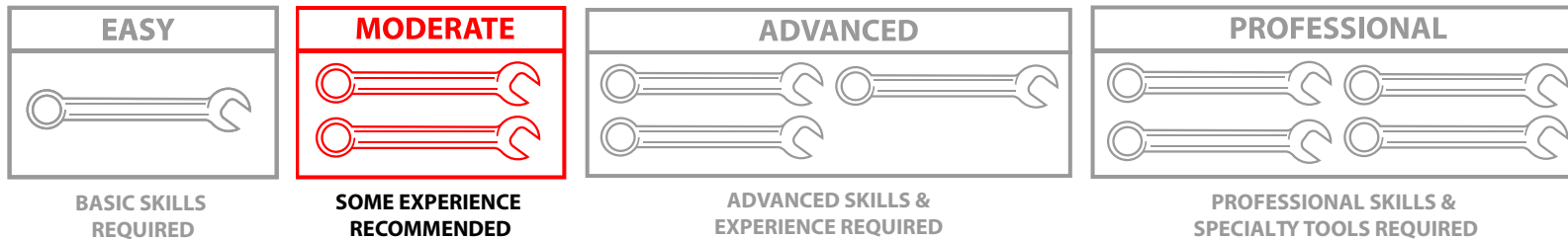
Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times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

INTRODUCTION

ECS Tuning Performance Adjustable Rear Control Arm Set ES#2682175

ECS Tuning Performance Adjustable Rear Control Arms offer the following features:

- Black anodized 6061-T6 aluminum construction with 303 stainless steel turnbuckles.
- Range of adjustment over eight degrees.
- Engineered in house and manufactured in the USA.
- Easily make precision adjustments with the center location of the turnbuckle.
- Pre installed high quality OEM style bushing.
- New mounting hardware included.



Installing the ECS Tuning adjustable rear control arms on your E36 or E46 BMW is a weekend project that will reward you with substantial gains in suspension technology and dependability. Plan accordingly based on your experience level. Before you begin, read and familiarize yourself with this guide and make sure you have all the required tools and information on hand. In addition, don't forget to plan and 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:

- (2) ECS Tuning Adjustable Rear Control Arms
- (2) Outer Control Arm to Trailing Arm Bolts
- (2) Outer Control Arm to Trailing Arm Nuts



The following pages are intended as a general installation guide for our rear control arms. They are not intended as a comprehensive step by step set of instructions. If you would like additional reference, please be sure to have the appropriate service information on hand before beginning.

REQUIRED TOOLS

NOTE

We recommend that you have a complete selection of tools and the necessary equipment for automotive repair. Metric wrenches and sockets will be required for basic installation. No specific specialty tools are required. Additional tools may be required for any issues that arise during installation such as rust, corrosion, or broken and stripped fasteners.

- Lower Control arm bolts inner and outer..... 18mm
- Turnbuckle adjustment flat..... 19mm
- Turnbuckle lock nuts..... 28mm

SHOP SUPPLIES AND MATERIALS

- Hand Cleaner/Degreaser..... Available at ecstuning.com..... [ES#2167336](#)
- Shop Rags Available at your local auto parts store
- Aerosol Spray Lubricant/Penetrating Oil..... Available at your local auto parts store

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.

PREPARATION AND SAFETY

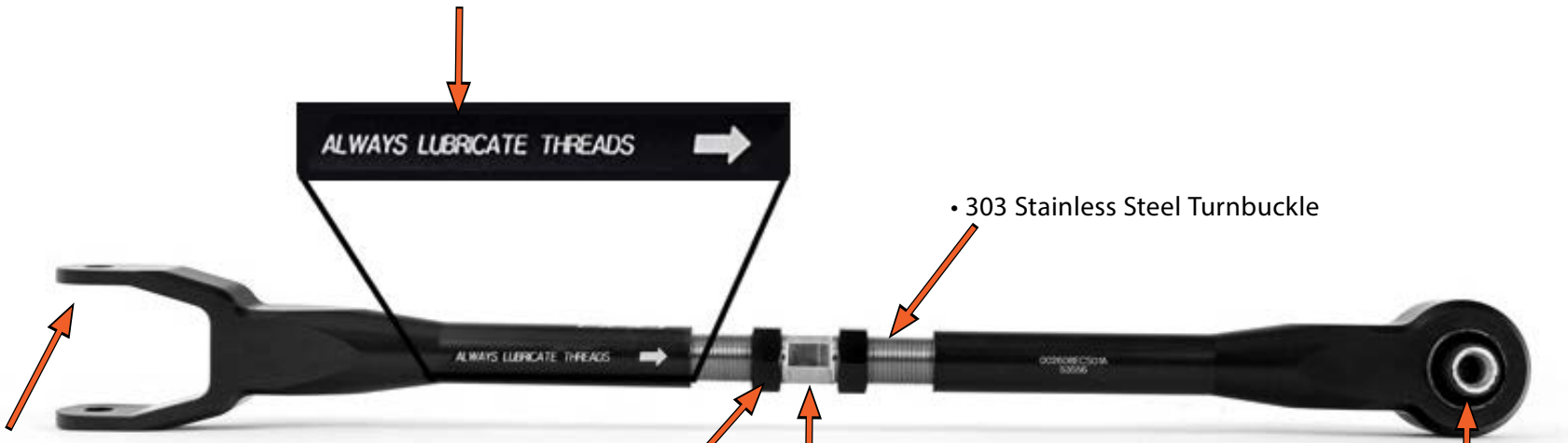
- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- Always wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- If using an automotive lift, be sure and utilize the factory specified lift points. Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- When lifting a vehicle using a jack, always 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. Always make sure that the vehicle is securely supported on jack stands.

ECS TUNING ADJUSTABLE REAR CONTROL ARM SPEC SHEET

• The turnbuckle threads will come prelubricated with antiseize. If the arms are adjusted or disassembled after initial installation, be sure to re-lubricate the turnbuckle to prevent galling of the threads.



• Longer bolts are required at the trailing arms. Use the new bolts supplied with the kit.

• 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 overtighten these or you can strip the aluminum.

• 303 Stainless Steel Turnbuckle

• Turnbuckle adjustment flats

• Pre-installed OE style inner bushing. Torque with 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.

E36 REAR CONTROL ARM INSTALLATION

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 ECS Tuning adjustable control arms in place.

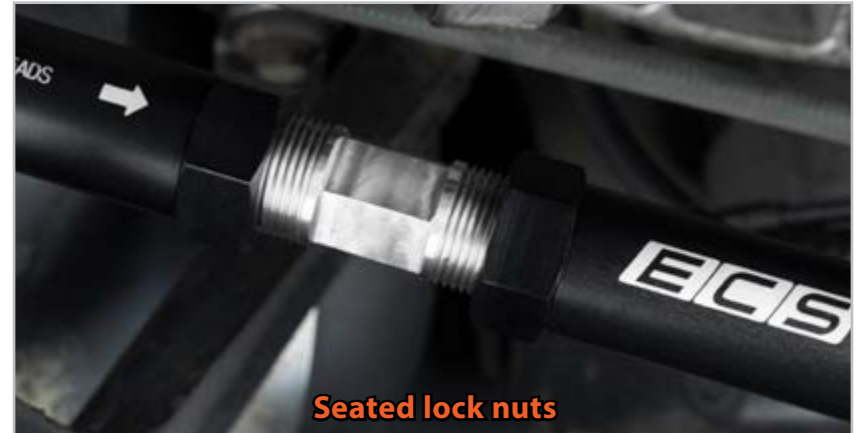
Install and hand tighten the bolts.

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.



E46 REAR CONTROL ARM INSTALLATION

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 ECS Tuning 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.

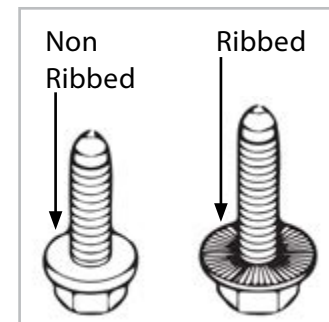
Perform a four wheel alignment/tighten the turnbuckle lock nuts.

E36 REAR SUSPENSION TORQUE SPECIFICATIONS

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)

• A note about torque to yield or “stretch” bolts: Many bolts will have a torque specification listed in the format - xx Nm+xx degrees (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 them to the Nm or Ft-lb specification. **Stage Two** - tighten each one the additional specified number of degrees. To prevent over torquing it is important to mark each fastener with paint **immediately** after performing the second stage or “stretching” of the bolts.

A “ribbed” or “non ribbed” bolt or nut is identified by the contact surface of the nut or bolt. See the illustration at right.

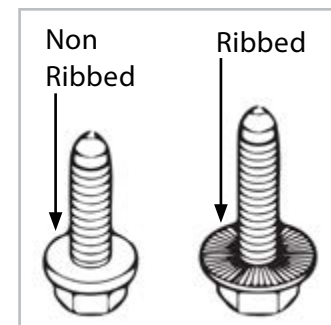


E46 REAR SUSPENSION TORQUE SPECIFICATIONS

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+90 deg (44 Ft-lbs+90 deg)
Wheels.....	120 Nm (90 Ft-lbs)

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A “ribbed” or “non ribbed” bolt or nut is identified by the contact surface of the nut or bolt. See the illustration at right.



Enjoy your new ECS Tuning Control Arms!



These instructions are provided as a courtesy by ECS Tuning.

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