

DIRECT-REPLACEMENT INSTALLATION GUIDE

**DODGE CHARGER/CHALLENGER (2011-2023)** 

# FACTORY RACE 2.0 X2 DUAL SPEED COMPRESSION DUAL SPEED REBOUND

883-30-000 Kit: MY11-23 Dodge Charger/Challenger, 2.0 On-Road FRS, X2, DSC, DSR

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## INTRODUCTION

Thank you for choosing FOX direct-replacement shocks for your vehicle. FOX products are designed, tested, and manufactured by the finest professionals in the industry.

FOX recommends that you become completely familiar with the handling characteristics of your modified vehicle before operating it under rigorous conditions, helping to avoid potential rollover situations and other loss of control events. FOX further recommends that you use appropriate protective equipment at all times when operating your vehicle.

To achieve the best performance and product longevity, periodic service and maintenance is required. Please refer to the Service and Upgrades section for more information.

#### IN THE BOX

- Front Shocks and Rear Shocks
- Supplied Hardware
- · Installation Guide

**WARNING:** If vehicle is equipped with an adaptive damping suspension system from the factory, a suitable delete kit will be required.

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## FRONT AND REAR SHOCK SUPPLIED PARTS

FRONT/REAR SHOCK ASSEMBLY			
FOX PN	DESCRIPTION	QTY	NOTES
883-30-000	LEFT/RIGHT SHOCK	4	Front and Rear Shocks

MOUNTING HARDWARE				
FOX PN	DESCRIPTION	QTY	NOTES	
019-00-026	NUT: M14 x 2.0, FLANGE	2	Each front shock uses one bolt, two	
019-01-231	WASHER: M14	4	washers, and one nut. These replace stock fasteners.	
019-04-003	BOLT: M14 x 2.0 x 120mm TLG	2		

#### **A** WARNING

## SAFETY INSTRUCTIONS

- Installation requires two people for safety purposes.
- FOX direct-replacement shocks are designed to fit and allow proper clearance with the stock suspension. If aftermarket suspension components are installed it is the customer's responsibility to ensure that interference between the FOX shocks and other vehicle components does not occur at any point in the shock stroke.
- FOX direct-replacement shocks should always be installed as a set for maximum performance.
- Proper installation and service procedures are essential for the safe and reliable operation of the suspension components, requiring the experience and tools specially designed for this purpose.
   Installation and maintenance procedures for this product must be performed by a qualified service technician to avoid potentially unsafe vehicle handling characteristics, which may result in SERIOUS INJURY or DEATH.
- Modifying your vehicle's suspension will change the handling characteristics of your vehicle. Under
  certain conditions, your modified vehicle may be more susceptible to loss of control or rollover, which
  can result in SERIOUS INJURY or DEATH. Thoroughly familiarize yourself with the modified vehicle
  handling characteristics before any rigorous vehicle operation. Wear protective body gear and a helmet
  when appropriate. Installation of vehicle roll bars or cage is highly recommended.
- FOX direct-replacement shocks are gas-charged and are highly pressurized. Placing shocks in a vise or clamp, applying heat, or attempting to open or service the shock without the proper tools and training can result in SERIOUS INJURY or DEATH. Do not attempt to modify, puncture or incinerate a FOX direct-replacement shock absorber.
- Any attempt to misuse, misapply, modify, or tamper with any FOX product voids any warranty and may result in SERIOUS INJURY or DEATH.

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#### **A** WARNING

## INSTALLATION GUIDELINES

- Always use a chassis lift for the installation of shocks, and make certain that the raised vehicle
  is securely attached to the lift to prevent the vehicle from slipping, falling, or moving during the
  installation process.
- DO NOT install any FOX product without the necessary special tools, expertise and chassis lift or you will subject yourself to the risk of SERIOUS INJURY or DEATH. If you elect to not use a chassis lift (which may result in SERIOUS INJURY or DEATH), ensure that the vehicle is: (1) on level ground, (2) that all tires on the ground during installation are blocked to prevent vehicle movement, (3) that at least two tires are on the ground at all times, and (4) that adequately secured jack stands are used to support the vehicle. NEVER get under the vehicle until you have checked to ensure that the vehicle will be stable during installation.
- FOX direct-replacement shocks are designed to fit your vehicle's shock mounts without modification except the reservoir placement on specific models and applications.
- If a preload adjustment is necessary for your application DO NOT adjust preload with the coil-over on the vehicle. Remove the coil-over from the vehicle and use a spring compressor to remove the lower spring hardware and spring. Once the spring is removed, you can adjust the preload ring.
- Any ride height adjustment should be made using spring preload ONLY. The lower mounting hardware is set from the factory to achieve optimal ride height.

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## FRONT SHOCK INSTALLATION

#### **PREPARATION**

- 1. Please read the installation guidelines on page 4 for instructions on how to properly drop and secure the vehicle.
- 2. Record the front vehicle ride height to ensure the proper drop is attained after kit is installed. READ INSTALLATION GUIDELINES ON HOW TO PROPERLY ADJUST PRELOAD.

**NOTICE:** Medium-strength thread-lock is recommended on all bolts.

**NOTICE:** The spring preload is set by FOX to last the life of the product. Any additional spring preload may negatively effect the life of the spring. The 883-30-000 kit is designed for a stock weight vehicle.

**NOTICE:** The images in this manual are for reference only, and may not depict your exact parts or components. For the latest instructions, visit www.ridefox.com/manuals or talk to your dealer.

**AWARNING:** For safety, two people are recommended for this procedure to prevent any injury.

#### STOCK SHOCK REMOVAL

- Remove both front wheels from the vehicle.
   NOTE: If the vehicle is equipped with adaptive damping system, unplug the connector. Remove the clips from the ABS line (Fig. 1; bottom arrow) and ensure the connector attached to the damper (Fig. 1; top arrow) is unplugged.
- 2. Use a 21 mm socket to remove the sway bar nuts from both sides (Fig. 2). Swing the link out of the way.

**NOTE:** If the nut will not come off with the socket, use a 21 mm **wrench** with a 10 mm wrench (to prevent the sway bar link from spinning) as you remove the nut.

**NOTICE:** Do not discard the sway bar nuts, they are reused with the new FOX shock assemblies.



Fig. 1: Remove the clips from the ABS line (bottom arrow); connector wired to stock damper (top arrow).



Fig. 2: Remove the sway bar nuts.

**WARNING:** Be very careful not to pull or damage brake lines during removal and installation. Doing so can decrease braking performance, cause an accident, and may result in SERIOUS INJURY or DEATH!

- 3. Use an 18 mm socket to remove the lower shock bolt (Fig. 3).
- 4. From the engine bay, remove the black protective cap from the frame (Fig. 4). Use a 13 mm socket to remove the three top mounting nuts (Fig. 5).

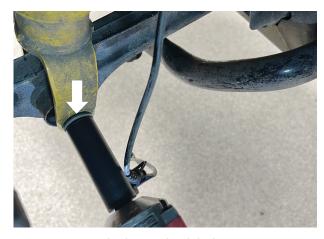


Fig. 3: Remove the lower shock bolt.



Fig. 4: Remove the black cap.

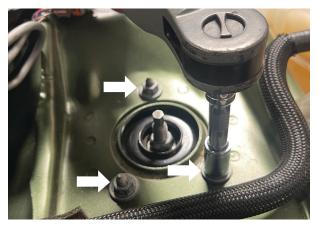


Fig. 5: Remove the top mounting nuts.

- 5. Support the suspension from below to prevent putting tension on brake lines (Fig. 6).
- 6. Use an 18 mm socket to remove the upper ball joint (Fig. 7).
  - **NOTE:** You may need a ball joint separator.
- 7. Carefully remove the support from the suspension, and be very careful to not pull on or place tension on the brake lines.
- 8. While holding the spindle (knuckle), press down to remove the shock from the frame and lower control arm (Fig. 8). Continue to be careful not to pull or place tension on the brake lines.
- 9. Repeat steps 3-8 for the opposite side of the vehicle.



Fig. 6: Support the suspension.



Fig. 7: Remove the upper ball joint.



Fig. 8: Hold the spindle, remove the shock.

#### **FOX SHOCK INSTALL**

**WARNING:** For safety, two people are recommended for this installation procedure to prevent any injury.

- 1. Install the new shock assembly with the adjusters facing the front of the vehicle. Loosely install the ball joint nut to the spindle/knuckle (Fig. 9).
- 2. Once the shock is oriented with the top hat, aligned with the holes in the frame, loosely thread the nuts on from the engine bay.
- 3. Install the supplied lower shock bolt and washer from the rear of the shock. Then, install the supplied washer to the front of the shock, and loosely thread the supplied nut to the bolt.
- 4. Torque the upper ball joint to OEM specifications.
- 5. Torque the lower shock bolt and nut to OEM specifications.
- 6. Use a 17 mm socket to torque the top hat nuts to OEM specifications.
- 7. Repeat steps 1-6 on the opposite side of the vehicle.
- 8. Reinstall the sway bar link using the stock nut and torque to OEM specifiction. Make sure to install the sway bar link on both sides.

**NOTE:** If the vehicle is equipped with an adaptive damping system, install the purchased (sold separately) delete kits (Fig. 10) and secure them to the vehicle per the manufacturer's instructions. Ensure they are secure, will not come loose, and will not interfere with any suspension or braking components.



Fig. 9: Install shock with adjusters facing forward; loosely install ball joint nut.

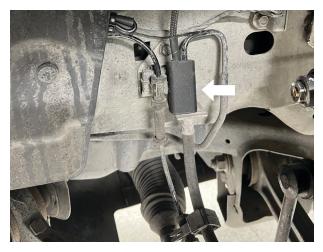


Fig. 10: If applicable, connect and secure the delete kit (sold separately).

#### **CHECK AND FINAL DETAILS**

- 1. Reinstall the wheels and torque to OEM specifications.
- 2. Set the vehicle back on the ground and drive back and forth several feet to allow the suspension to settle.
- 3. Check that the suspension has proper clearance by steering completely in both directions.
- 4. It is highly recommended your wheel alignment is checked.

**AWARNING:** Failure to maintain proper wheel alignment will result in premature tire wear and changes in vehicle handling.

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## REAR SHOCK INSTALLATION

#### **PREPARATION**

- 1. Please read the installation guidelines on page 4 for instructions on how to properly drop and secure the vehicle.
- Record the front vehicle ride height to ensure the proper drop is attained after kit is installed. READ INSTALLATION GUIDELINES ON HOW TO PROPERLY ADJUST PRELOAD.

**NOTICE:** Medium-strength thread-lock is recommended on all bolts.

**NOTICE:** The spring preload is set by FOX to last the life of the product. Any additional spring preload may negatively effect the life of the spring. The 883-30-000 kit is designed for a stock weight vehicle.

**NOTICE:** The images in this manual are for reference only, and may not depict your exact parts or components. For the latest instructions, visit www. ridefox.com/manuals or talk to your dealer.

**AWARNING:** For safety, two people are recommended for this procedure to prevent any injury.

#### STOCK SHOCK REMOVAL

- Remove the rear wheels from the vehicle.
   NOTE: If the vehicle is equipped with adaptive damping system, unplug the connector. Remove the clips to free the line (Fig. 11).
- 2. Use a 15 mm and a 16 mm wrench to remove the sway bar links **from both sides**. Swing the sway bar out of the way and remove the stock bolt from the link (Fig. 12 and Fig. 13).

**NOTICE:** Do not discard the sway bar fasteners, they are reused with the new FOX shock assemblies.



Fig. 11: Remove the clips for vehicles with adaptive damping system.



Fig. 12: Remove the sway bar links from both sides.



Fig. 13: Swing the sway bar out of the way, remove the stock bolt.

- 3. Support the suspension toward the outside of the lower control arm (Fig. 14).
- 4. Use a 16 mm socket to remove the upper shock bolts (Fig. 15).
  - NOTE: A swivel extension can help to remove the bolts.
- 5. Use an 18 mm socket and a 15 mm wrench to remove the lower shock bolt (Fig. 16).

**NOTICE:** Do not discard the shock fasteners, they are reused with the new FOX shock assemblies.

6. Remove the rear stock shocks.



Fig. 14: Support the suspension toward the outside of lower control arm.



Fig. 15: Remove the upper shock bolts.



Fig. 16: Remove the lower shock bolt.

- 7. Move the suspension support to the inside of the lower control arm (Fig. 17).
- 8. Use an 18 mm and 15 mm wrench to remove the inner lower control arm bolt. You may need to pry the lower control arm to free the bolt (Fig. 18).
- 9. Carefully and slowly lower the support to remove the force created by the spring.
  - **WARNING:** The force created by the spring can cause bodily harm. Be extremely careful when lowering the support.
- 10. Remove the rear spring and discard it.
- 11. Align the lower control arm to the chassis and reinstall the stock inner lower control arm hardware (Fig. 19). Torque to OEM specifications.
- 12. Repeat steps 3-11 for the opposite side of the vehicle.

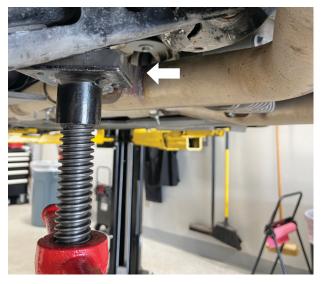


Fig. 17: Move the suspension support to the inside of the lower control arm.



Fig. 18: Remove the inner lower control arm bolt.



Fig. 19: Align lower control arm to chassis, reinstall hardware.

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#### **FOX SHOCK INSTALL**

**WARNING:** For safety, two people are recommended for this installation procedure to prevent any injury.

- Install the new shock assembly with the adjusters facing toward the outside and rear of the vehicle. Reinstall the stock hardware and torque to OEM specification (Fig. 20). Repeat on the other side.
- 2. With the sway bar still out of the way, reinstall the stock sway bar hardware. Orient the bolt to face the outside of the vehicle for shock clearance (Fig. 21).
- 3. Swing the sway bar down and reconnect the link using the stock hardware on both sides of the vehicle (Fig. 22). Torque to OEM specification.
  NOTE: If the vehicle is equipped with an adaptive damping system, install the purchased (sold separately) delete kits (Fig. 23) and secure them to the vehicle per the manufacturer's instructions. Ensure they are secure, will not come loose, and will not interfere with any suspension or braking components.

#### **CHECK AND FINAL DETAILS**

- Reinstall the wheels and torque to OEM specifications.
- 2. Set the vehicle back on the ground and drive back and forth several feet to allow the suspension to settle.
- 3. Check that the suspension has proper clearance by steering completely in both directions.
- 4. It is highly recommended your wheel alignment is checked.

**WARNING:** Failure to maintain proper wheel alignment will result in premature tire wear and changes in vehicle handling.



Fig. 20: Install the new shock assembly, adjusters facing outward.



Fig. 21: Reinstall stock sway bar hardware.



Fig. 22: Reconnect the link using stock hardware on both sides of the vehicle.



Fig. 23: If applicable, connect the adaptive damping system connector.

### **FOX FACTORY X2 DSC/DSR**

#### RECOMMENDED START SETTINGS

The recommended settings in this tuning guide are suggested starting points. The is no singular ideal vehicle setup for all conditions. As you drive and begin to familiarize yourself with the handling of your new Fox Factory suspension, adjust your damper settings as needed.

Your Fox Factory Race Series dampers perform multiple important functions on your vehicle. At a high level, these functions can be grouped into the categories of grip, driver control, and ride comfort. These functions can often conflict with one another, and the right compromise can vary with track/road conditions, driver preference, and other accompanying vehicle modifications. Your ideal damper setting may vary from street to track, or even track to track. **Take notes!** Don't be afraid to experiment, as this product was tested on your vehicle platform through its entire adjustment range.

#### Low-Speed Compression (LSC) for

general platform control from driver inputs and gradual road inputs. Too little LSC can cause a loose/soft feeling car. Too much LSC can increase harshness and reduce grip (especially in slick conditions). Adjust with a flat head screwdriver.

Low-Speed Rebound (LSR) is typically the change drivers will notice the most. LSR increases responsiveness and the "pinned down" feeling many drivers desire. Like LSC, too little LSR can result in a car that feels floaty or bouncy. Too much LSR can result in the car becoming skittish and reduce grip over uneven surfaces. Adjust with a flat head screwdriver.



High-Speed Compression (HSC) is most associated with large or abrupt inputs from the road surface. Too little HSC could cause the dampers to bottom over bumps and square edge inputs. Too much HSC can lead to harshness or being pushed off line by large inputs such as track curbing. Adjust with a 17 mm socket/wrench.

High-Speed Rebound (HSR) is often noticed immediately following a high-speed compression event. Rebound speeds increase with large amount of stored spring energy (caused by large compression strokes), or when the ground abruptly drops away while the suspension is loaded. Too little HSR can cause the vehicle to "hop up" or over-extend the dampers after a large suspension input. Too much HSR can cause the vehicle to not recover to ride height quick enough and lead to "jacking down" in bumpy conditions. Adjust with a 17 mm socket/wrench.

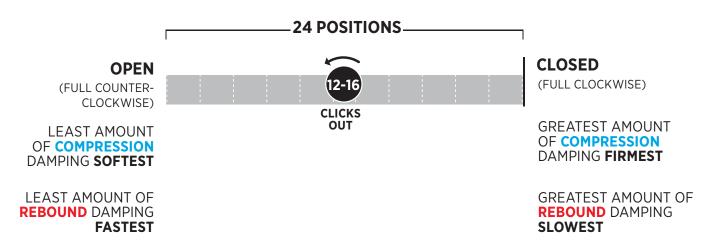
**Remember!** "High speed" in the context of damper settings is referring to the damper shaft velocity, not the vehicle's velocity. Large displacement inputs at relatively low vehicle speeds can produce high speed damper velocities. Small inputs at high vehicle speeds are typically still low speed damper velocities.

#### **RECOMMENDED START SETTINGS, CONTINUED**

The ranges in the table below can be considered starting points for damper settings. All adjusters have 24 "clicks" or positions. Adjustments are "clicks out" from zero, with zero position being the adjuster turned full clockwise (closed). All adjusters do not have to be at the same click position. They may need to be in differing positions to reach the optimal setup for your usage and preferences.

Suggested Start Settings				
Driving Style	Adjuster Stating Range			
Comfort	16-20 clicks out			
Sport	12-16 clicks out			
Track	6-12 clicks out			

#### **EXAMPLE DAMPER ADJUSTMENTS**



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## **MAINTENANCE**

PROPER INSPECTION AND MAINTENANCE IS ESSENTIAL TO MAINTAIN THE PERFORMANCE AND RELIABILITY OF YOUR SHOCK ABSORBERS.

To avoid corrosion, you should keep the shocks and springs clean, free of dirt and moisture. The wiper seal will clean deposits from the shaft, but the shock won't necessarily fully compress every time. This means you could accumulate dirt at the bottom of the shaft and underneath the jounce bumper. Make sure you clean these areas completely to prevent shaft corrosion. Avoid using a high-pressure washer near the shaft seals or adjusters, as this could drive dirt inside the shock.

Make sure the ends of the spring and shock threads are clean and free of dirt before adjusting the preload ring. This will make the adjustment easier and reduce wear.

Ideally, the shocks should be clean around the adjusters. Use a small amount of contact cleaner before making adjustments will keep these parts clean and operating smoothly for years

**NOTICE:** Keep the shock and spring clean and free of dirt or water to avoid corrosion. Keep the shock shaft clean and free of mud. Avoid using a high-pressure washer near the shaft seals and adjusters. Before adjusting preload or the crossover ring, clean the threads of the shock body for easier adjustment and mitigating wear.

#### **FOX SERVICE AND UPGRADES**

HAVE YOUR FOX SHOCKS SERVICED BY FOX TECHNICIANS. CALL OUR SERVICE CENTER AT 619.768.1800 TO GO OVER THE SERVICE AND UPGRADE OPTIONS AVAILABLE FOR YOUR PRODUCT. ONCE YOU'VE SETUP YOUR SERVICE AND/OR UPGRADES YOU WILL RECEIVE A RETURN AUTHORIZATION NUMBER AND SHIPPING INSTRUCTIONS.

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## WARRANTY INFORMATION

#### **FOX LIMITED WARRANTY**

FOX Factory, Inc., a Georgia corporation having an office at 6634 Highway 53 Braselton, GA 30517 ("FOX"), makes the following LIMITED WARRANTY with respect to its suspension products: LIMITED ONE (1) YEAR WARRANTY ON SUSPENSION PRODUCTS.

Subject to the limitations, terms and conditions hereof, FOX warrants, to the original retail owner of each new FOX suspension product, that the FOX suspension product, when new, is free from defects in materials and workmanship. Unless otherwise required by law, this warranty expires one (1) year from the date of the original FOX suspension product retail purchase from an authorized FOX dealer or from a FOX authorized Original Equipment Manufacturer where FOX suspension is included as original equipment on a purchased vehicle. If law requires a warranty duration of greater than one (1) year, then, subject to the other provisions hereof, this warranty will expire at the end of the minimum warranty period required by such law.

#### **TERMS OF WARRANTY**

This warranty is conditioned on the FOX suspension product being operated under normal conditions and properly maintained as specified by FOX. This warranty is only applicable to FOX suspensions purchased new from an authorized FOX source and is made only to the original retail owner of the new FOX suspension product and is not transferable to subsequent owners. This warranty is void if the FOX suspension product is subjected to abuse, neglect, improper or unauthorized repair, improper or unauthorized service or maintenance, alteration, modification, accident or other abnormal, excessive, or improper use.

Should it be determined by FOX in its sole and final discretion, that a FOX suspension product is covered by this warranty, it will be repaired or replaced, by a comparable model, at FOX's sole option, which will be conclusive and binding. THIS IS THE EXCLUSIVE REMEDY UNDER THIS WARRANTY. ANY AND ALL OTHER REMEDIES AND DAMAGES THAT MAY OTHERWISE BE APPLICABLE ARE EXCLUDED, INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR PUNITIVE DAMAGES.

This limited warranty does not apply to normal wear and tear, malfunctions or failures that result from abuse, improper assembly, neglect, alteration, improper maintenance, crash, misuse or collision. This limited warranty gives the consumer specific legal rights. The consumer may also have other legal rights which vary from state to state or country to country. Some states and countries do not allow the exclusion or limitation of incidental or consequential damages or warranties, and if dictated by law the above limitations or exclusions may not apply to you. If it is determined by a court of competent jurisdiction that a certain provision of this limited warranty does not apply, such determination shall not affect any other provision of this limited warranty and all other provisions shall remain in full effect.

THIS IS THE ONLY WARRANTY MADE BY FOX ON ITS SUSPENSION PRODUCTS AND COMPONENTS, AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION HEREIN. ANY WARRANTIES THAT MAY OTHERWISE BE IMPLIED BY LAW INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED.

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# **CONTACT**

#### **FOX RACING SHOX**

A DIVISION OF FOX FACTORY INC. 6634 HWY 53, Braselton, GA 30517 USA 1.800.FOX.SHOX (1.800.369.7469) ridefox.com

