



Core Components

FD3S Front LCA Ball Joint Roll Center Kit

P/N: CC-RX7-FD3S-FLCA-RCR-KIT
P/N: CC-RX7-FD3S-FLCA-BJR-KIT

[Click Here to view our Complete Installation Video!](#)

[CC-RX7-FD3S-FLCA-RCR-KIT \(CC RX7 FD3S FR LCA BALL JOINT ROLL CENTER KIT\)](#)
[CC-RX7-FD3S-FLCA-BJR-KIT \(CC RX7 FD3S FR LCA BALL JOINT REPLACEMENT KIT\)](#)

Thank you for purchasing this Core Components product for your car! Installation of this product should only be performed by persons experienced with installation of aftermarket performance parts and proper operation of high performance vehicles. **If vehicle needs to be raised off the ground for installation, the installer must use proper jacks, jack-stands and/or a professional vehicle hoist for safety of the installer and to protect property. If the vehicle is lifted improperly, serious injury or death may occur!** Please read through all instructions before performing any portion of this installation. **Always use appropriate personal protection equipment such as gloves, eye, and hearing protection for installation of this product.** If you have any questions, please contact our tech department prior to starting installation. email tech@ccfablab.com

Modifications to any vehicle can change the handling and performance. As with any vehicle extreme care must be used to prevent loss of control or roll-over during sharp turns or abrupt maneuvers. Always wear seat belts, and drive safely, recognizing that reduced speeds and specialized driving techniques may be required. Failure to drive a vehicle safely may result in serious injury or death. Do not drive a vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain control under all driving conditions.

OFF ROAD USE ONLY

Some modifications (and combinations of modifications) are not recommended and may not be permitted in your state or country. Consult the owner's manual, service manual, instructions accompanying these products, and local laws before purchasing and installing these modifications. You are responsible for the legality and safety of the vehicle you modify using these components.

This product is legal in California only for racing vehicles which may never be used upon a highway. Check your local and federal laws prior to installation.

Some Core Components upgrades may solely be used on vehicles in sanctioned competition which may never be used upon a public road or highway, unless permitted by specific regulatory exemptions (such as a CARB E.O.). For state specific details please visit the following website: <http://www.semasan.com/emissions>

It is the responsibility of the installer and/or end user of the product to ensure that it is used in compliance with all applicable laws and regulations.

All performance modifications and installations are at the customer's own risk. Core Components Fabrication Laboratory/RAD Motorsports LLC holds no responsibility either implied or otherwise for mechanical, electrical or other failure when using any aftermarket performance products.

WARNING: This product can expose you to chemicals including Lead which is known to the State of California to cause cancer birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

Core Components & Synaptic 3 Performance are divisions of RAD Motorsports LLC



Installation – When New:

- **Installation of this part should be performed by a qualified technician**
 - **Read through entire installation before starting this project.**
 - **Check out our [video](#) on how to install the provided parts**
 - **Consult your mechanic or qualified technician before installing this part on your car to best determine how it should be setup on your vehicle.**
- 1) Prep OEM arm as instructed in the instructional [video](#) to achieve flat surfaces.
 - 2) Insert ball joint housing into the arm and apply small amount of blue thread locker to the threads of the housing.
 - 3) The ball joint can be installed using a press or by heating arm with map gas or other means. The latter will enable the ball joint assembly to drop into the lower control arm with almost no force at all. (If you choose the latter method be sure to let the parts adequately cool before handling)
 - 4) Torque the top nut to 10 ft. lb. Clockwise.

WARNING: This product can expose you to chemicals including Lead which is known to the State of California to cause cancer birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

Core Components & Synaptic 3 Performance are divisions of RAD Motorsports LLC



Core Components

FD3S Front LCA Ball Joint Roll Center Kit

P/N: CC-RX7-FD3S-FLCA-RCR-KIT
P/N: CC-RX7-FD3S-FLCA-BJR-KIT

If you purchase a Roll Center Kit [CC-RX7-FD3S-FLCA-RCR-KIT](#):



Extend Length Roll Center Pins are included separately and must be installed if you wish to use them. Keep the stock length pins in safe place in case you wish to return the car back to stock for resale purposes.

****See Service/Maintenance on the last page for instructions on changing out installing the Extended Length Roll Center Pins.****



If you purchased a Ball Joint Replacement Kit [CC-RX7-FD3S-FLCA-BJR-KIT](#)

Assembled (standard length ball joints) are shipped from Core Components internally lubricated, adjusted and ready to install.

***Assembled Ball Joints should be torqued to 10 ft/lbs. when installed into the LCA.
DO NOT USE WITH IMPACT!**

WARNING: This product can expose you to chemicals including Lead which is known to the State of California to cause cancer birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

Core Components & Synaptic 3 Performance are divisions of RAD Motorsports LLC



Further Words of Caution:

It is nearly impossible to destroy a precision ball joint when installed and maintained properly. However, it is not possible to produce a ball joint that is indestructible when misused. Fortunately, ball joints don't just break on their own and you can greatly reduce or eliminate the possibility of failure if you use them properly.

#1 MISFIT TAPER

The most common cause of ball joint failure is the result of the tapered hole in the spindle not matching the taper of the ball joint stud. There are several possible causes for this mistake. If you have this condition the ball joint will eventually break at the base of the threads from the cyclical bending of the stud. If you only replace a ball joint after a failure the replacement ball joint will also break.

1. Wrong Parts – Make sure that you are using a spindle with the same taper as the ball joint. Many aftermarket spindles are made with tapers that are not the same as the o.e.m. parts.

2. Out of Tolerance – Most racing spindles are made in the aftermarket. Most are within acceptable tolerance but not all. Do not trust any spindle taper that is “as cast”. A true taper requires an accurate machining process.

3. Poor Reaming – Straight flute reams are made for hand use and will chatter if used in a machine or a hand drill. When the ream chatters the oscillation causes the hole to become non-concentric or “egg-shaped”. A non-concentric taper will lead to eventual failure of the ball joint stud. Tapered reams that are designed for machine use and are accurate to the matching stud are available for custom spindles.

4. Damaged Taper – When a ball joint is damaged from an impact it often causes the taper in the spindle to become non-concentric. When this happens the taper must be corrected with a ream or the spindle must be replaced. Failure to correct this will result in your next crash.

How to check proper fit:

You can check the fit of a new ball joint stud by looking at the copper plating or by using a felt marker to cover the surface of the stud. Hand fit the ball joint stud into the spindle spinning the stud with your fingers while holding light pressure against the taper. Remove the stud from the spindle and inspect the surface of the stud. The marker should be removed over the length of the taper. If it is removed on only one end this indicates a poor fit. The lesser the engagement the faster the ball joint will fail.

WARNING: This product can expose you to chemicals including Lead which is known to the State of California to cause cancer birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

Core Components & Synaptic 3 Performance are divisions of RAD Motorsports LLC



#2 OVER TRAVEL

Make sure that your ball joints are installed at angles that will not allow them to exceed their travel range.

- 1. Compression – To verify adequate compression travel remove the springs and lower the car until it stops. With the car bottomed out, you must have additional travel remaining.*
- 2. Extension – Damage can be caused by high amounts of spring preload against the limits of the ball joint travel. Do not stand or jump on the wheel while the ball joints are at the end of travel. This is a problem when attempting to force a long spring into the suspension.*

#3 OVER TORQUE

It is important that the ball joint is installed to the correct torque into the control arm as well as the spindle.

- 1. Spindle - Ball Joints are supplied with a grade 5 castle nut. This lower grade nut is purposely used to prevent damage to the stud. If you have stripped the nut simply remove the stripped nut, clear the threads and replace with an equal grade castle nut.*
- 2. Control Arm – If you are using a ball joint with a threaded housing use the torque specs as listed in the instructions using a ball joint socket. Excess torque will distort the housing and restrict the motion of the ball.*

#4 INSTALLING BALL JOINT BY THE CAP

Never install threaded housing ball joints by the cap. Only use the correct ball joint socket to turn the housing and tighten to the specification as listed in the instructions. If you install the ball joint by the cap this will cause the cap to tighten excessively onto the ball and restrict the movement of the ball joint and potentially cause its failure.

WARNING: This product can expose you to chemicals including Lead which is known to the State of California to cause cancer birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

Core Components & Synaptic 3 Performance are divisions of RAD Motorsports LLC



****Service/Maintenance**:**

Grease after every 300 to 400 laps with low friction grease. Use Citgo MP Lithoplex 3 or Red Line CV2.

Unlike conventional ball joints, our ball joint will only accept grease until it is full (typically, one pump or less is required). Once the grease passages are full they will not vent, the pressure from the grease gun can make it difficult to remove the gun from the zerk. To relieve the pressure work the ball stud around to vent grease onto the ball, if the ball joint is on the vehicle, bounce the suspension for the same result. Disassemble annually or every 2000 laps to adjust the lash. Adjusting the Lash can be set with the LCA attached to the car if the spring is unloaded and the ball joint taper is free from the spindle. If you choose to remove the ball joint from the LCA, gently clamp the housing sides in a vise (preferably using softjaws) to disassemble.

Balljoint Disassembly:

- 1) Use a 3/32" allen wrench to remove the setscrews from the housing.
- 2) Turn adjuster cap (4 pin hole piece) counterclockwise to remove.
- 3) Clean moving parts to inspect for excessive wear. Replace any parts that are worn or damaged. The ball stud is concentric and should be checked for straightness. Install the ball stud upside down in the housing and spin the stud against the side of the housing with your fingers. If the ball stud is bent, you will see it wobble.

Ball Reassembly:

1. Install the ball stud into the housing without grease.
2. Apply a small amount of light lubricant to the threads of the ball retainer cap that has the 4 pin tool holes in it.
3. Install and tighten the retainer cap until it contacts the top of the ball.
4. Set the lash on the ball by making contact and then loosening the cap approximately an 1/8 turn. (You may use pin pliers, snap ring pliers or a set of needle nose pliers to turn the pre-load cap.) **This procedure requires very little force. The ball should move freely and not have any binding.**
5. Apply blue loctite to setscrews before installing. Install the setscrews into the housing and tighten them evenly by hand.
6. Using a grease gun, grease and rotate the ball stud by hand until the grease is visible on the ball where the ball meets the stud.

Enjoy you precision ball joints and improved handling!

WARNING: This product can expose you to chemicals including Lead which is known to the State of California to cause cancer birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

Core Components & Synaptic 3 Performance are divisions of RAD Motorsports LLC