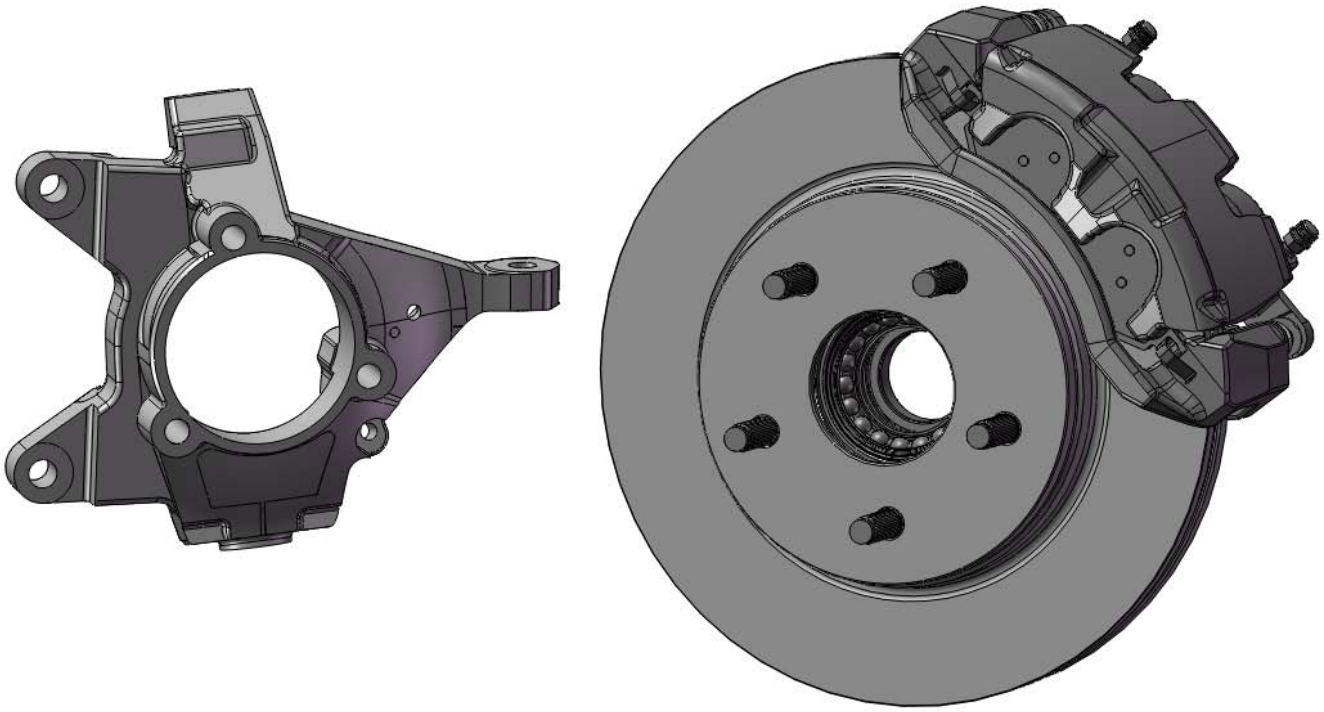
AMERICAN EXPEDITION VEHICLES

BIG BRAKE KIT FOR TJ, ZJ, XJ D44 & D30

16” KIT PART NUMBER 41002010AA
17” KIT PART NUMBER 41002015AA



Installation Guide

(Updated 12/01/09)

PLEASE READ BEFORE YOU START

IN ORDER TO INSTALL THIS PART PROPERLY YOU OR YOUR INSTALLER MUST READ THESE INSTRUCTIONS THOROUGHLY BEFORE BEGINNING THE INSTALLATION. FAILURE TO DO SO MAY RESULT IN MISTAKES AND AFFECT THE QUALITY OR SAFETY OF THE FINISHED PRODUCT.

16" KIT CONTENTS

RH Knuckle	1
LH knuckle	1
RH Caliper	1
LH Caliper	1
Brake Pad Set	1
Rotor	2
Master Hardware Pack	1
- M12x1.25x50mm Bolt	4
- M12 Washer	4
- Banjo Bolt	2
- M10 Copper Washer	4
- Cotter Pin	6

17" KIT CONTENTS

RH Knuckle	1
LH knuckle	1
RH Caliper	1
LH Caliper	1
Brake Pad Set	1
Rotor	2
Master Hardware Pack	
- M14x2.0x40mm Bolt	4
- M14 Washer	4
- Banjo Bolt	2
- M10 Copper Washer	4
- Cotter Pin	6
- Hub Spacer	2
- M8x1.25x20mm Bolt	4
Master Cylinder	1

16” KIT COMPONENTS

17” KIT COMPONENTS

A. VEHICLE PREPARATION

1. Set park brake, block wheels and support front axle on axle stands
2. Remove front wheels
3. Drain fluid from brake system. Be sure not to get brake fluid on any painted surface.

B. REMOVE FACTORY BRAKE COMPONENTS

1. Remove and discard front calipers and rotors.
2. Remove unit bearing, axle shaft, and knuckle. The axle shaft and unit bearing can be removed as an assembly if desired.
3. **Save** the Brake Rotor Shield, it must be re-installed during the assembly of your new brakes in order to provide proper clearances and protection of the rotor.
4. If the vehicle is equipped with **ABS**, carefully remove and secure the ABS Sensor. Save the fastener for re-use into the AEV Knuckle Assembly.
5. **DO NOT USE A PICKLE FORK TO SEPARATE BALL JOINTS OR TIE ROD ENDS FROM THE FACTORY KNUCKLE.** Use the hammer and deformation process, if you are not familiar with this process, consult a mechanic who is.

C. INSPECT AND REPLACE ANY WORN COMPONENTS

1. Inspect the Ball Joints, Tie Rod Ends, Steering Linkage, Unit Bearings, Wheel Studs, Brake Hoses, U-Joints, and all other front end components for any signs of damage or excessive wear. Replace as necessary according to the Factory Service Manual.
2. Thoroughly clean all debris from inside the axle tubes to prevent any dirt from being pushed into the differential during reassembly.

D. INSTALLATION OF AEV KNUCKLES

1. Upper Ball Joint Torque – 75 lb/ft
2. Lower Ball Joint Torque – 80 lb/ft
3. Outer Tie Rod Torque – 55 lb/ft
4. Install new cotter pins (provided) in all Castle Nuts.
5. Remove Steering Stops from old knuckles and install into them into the new AEV Knuckles.

E. REINSTALL UNIT BEARING AND AXLE SHAFT

1. Support the axle shaft to prevent pushing debris into the differential housing.
2. Unit Bearing Torque – 75 lb/ft
3. If you separated the Axle from the Unit Bearing the Axle Nut Torque is 175 lb/ft.

F. INSTALL ABS SENSOR (IF APPLICABLE)

1. Install the ABS Sensor into the knuckle reusing the stock bolt. Inspect the air gap between the sensor and tone wheel, the sensor should be close, but not touching when the axle shaft is rotated.

G. INSTALL NEW BRAKE ROTORS

1. Thoroughly clean the mating faces of the Unit Bearing Hub and the Brake Rotor.
2. Lightly coat the clean surfaces with anti-seize compound.
3. 17” KIT ONLY – Lightly coat the spacer ring with anti-seize compound and install the ring onto the hub pilot. **THE SPACER RING MUST BE REUSED WHEN NEW ROTORS ARE INSTALLED.**
4. Clean your hands and work area. Then clean the inner and outer surfaces of the brake rotor with Brake Cleaner. **ALL NEW ROTORS MUST BE THOROUGHLY CLEANED BEFORE USE.**

H. INSTALL NEW CALIPERS – 16" KIT ONLY

1. Install the caliper over the Rotor and onto the Knuckle. Caliper to Knuckle Bolt Torque – 80 lb/ft. **USE BLUE LOCTITE (NOT PROVIDED)**
2. On some models, the dust shield may need to be bent slightly where the Caliper attaches to the Knuckle. Test fit the caliper and clearance the shield as required, but maintain an adequate amount of clearance between the shield and the rotor.
3. Install Brake Hoses. Stock Brake Hoses will attach to these calipers, but some lifted applications may require different hoses.
4. Use new Copper Washers and Banjo Bolts supplied. Banjo Bolt Torque – 20 lb/ft.
5. Skip ahead to Section L.

I. INSTALL NEW CALIPERS – 17" KIT ONLY

1. Install the Brake Pads into the Caliper Bracket - The Clips go to the outside of the Bracket, away from the rotor. Remove the paper and install the pads into the Bracket.
2. Install the Caliper Head onto the Bracket with the provided fasteners. Caliper Head to Bracket Fastener Torque – 28 lb/ft
3. Install the Caliper Assembly to the Knuckle using the supplied hardware. Caliper to Knuckle Bolt Torque – 130 lb/ft - **USE BLUE LOCTITE (NOT PROVIDED)**

4. Install the brake hose. The stock hose may need to be flattened on one side as shown. Lifted applications may require different hoses.
5. Use new Copper Washers and Banjo Bolts supplied. Banjo Bolt Torque – 20 lb/ft.

J. INSTALL NEW MASTER CYLINDER – 17" KIT ONLY

1. Remove the stock Master Cylinder. Clean the area to prevent any dirt from entering the brake booster.
2. Disconnect the rubber hose from the check valve.
3. Disconnect the Brake Lines from the Master Cylinder and remove the nuts to the booster. Be sure to remove the original O-ring when removing the factory Master Cylinder.

K. INSTALL NEW AEV MASTER CYLINDER

1. Bench bleed the new Master Cylinder with the fittings and hoses provided.
   a. Fill the reservoir with new DOT3 Fluid
   b. Submerse the free end of the clear tubes into the brake fluid in the reservoir. Using a screwdriver to press on the piston, use **SLOW** steady strokes to cycle fluid through the unit until no more bubbles can be seen traveling through the tubes. Finish by bottoming out the piston gently.
   c. Leave the tubes attached, secure to the reservoir with tape.
2. Install the new Master Cylinder onto the Booster, be sure to lubricate the new O-ring slightly. Master Cylinder to Booster Nut Torque – 14 lb/ft. Proportioning Valve to Booster Nut Torque – 14 lb/ft.
3. Quickly remove the plastic bleed fittings and install the Brake Lines. Brake Line Fitting Torque – 14 lb/ft.

L. INSTALL THE WHEELS AND TIRES

1. Torque Lug Nuts to 110 lb/ft in a star pattern.
2. Check Caliper to Wheel Clearance

M. BLEED BRAKE SYSTEM

1. Bleed Brake System using slow deliberate strokes. **DO NOT USE FAST "PUMP AND RELEASE" MEATHOD AS HIGH PRESSURES DESOLVE AIR INTO THE FLUID.**
2. Top off the Master Cylinder and check for leaks.

N. ROAD TEST AND BURNISHING BRAKES PROPERLY

1. Perform 50 – 75 stops, braking mildly from approx 35 - 45mph. Soccer mom style, not race track. Drive at least 1 mile between stops to prevent heat build-up during the burnish process. After the first few stops, check for leaks, repair if necessary.
2. Perform 5 – 10 aggressive stops, less than a panic stop. **DO NOT LOCK THE BRAKES**. Drive vehicle several miles between each stop to prevent heat build-up.
3. In a safe area perform a panic stop. BE READY TO MODULATE THE BRAKE PEDAL TO PREVENT WHEEL LOCK UP. Drive the vehicle several miles after each stop to cool the brakes.

COMMENTS OR QUESTIONS?

Be sure to visit our forum at: http://forum.aev-conversions.com

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