

Replace Teves III with Teves IV - Yes, But it's Not a Quick Plug and Play.

The Benefits are many:

1. A much less complex system of wires, relays, and switches externally.
2. Changes to the brake lines up front only, the existing brake lines providing ~95% of the needed brake line plumbing – with some reasonable reshaping (bending) without removing them from the firewall.
3. Use existing ABS sensor coax cables from the front and rear.
4. All wiring is up front on the engine and passenger side of the firewall (excepting two sensor coax cables to the rear).
5. Greater reliability and comparative simplicity of the Teves IV ABS system because of fewer external components and system integration.
6. Fail Safe system – Any fault in ABS systems turns the ABS off, and you have full normal vacuum boosted brakes at all four corners without ABS.
7. No loss of the rear brakes leaving you with un-boosted front non-ABS brakes only, or complete loss of brakes as with the Teves III. The only way to have a total loss of brakes with Teves IV, is to lose all brake fluid out of both the front and rear systems *Did you not notice that the Brake Red Light (brake fluid low warning) was not working when the bulbs were tested when you first turned on the key?* That would mean that you needed to check the fluid level visually and frequently if you had evidence of brake fluid leaking. And, you need to get the red brake light function fixed by replacing the bulb or the reservoir (switch) so you don't run out of brake fluid if you get a leak.

If you think you want to do this, be prepared to spend some time studying and comparing the electrical diagrams for both. You really do need a reasonable level of electrical and mechanical competence. **It will take some time for careful competent work as well – your safety and well-being depend on it – brakes are serious business.** You need to read through this document completely to be aware of what is required before you commit to go ahead.

You need to start gathering the parts you will need. Nearly all of them are no longer available new through the dealers, SNG Barratt (US or UK), or Jaguar Classic Parts. You will have to get most everything from used parts sources like

Ebay, Craigslist, Jaguar forums, or recycling (a euphemism) yards. Another great source is “Car-Part.com”. It may take a few months of diligent searching to get what you need to proceed. It is conceivable that you may not be able to find all the needed parts to complete the project. Because of that, I recommend not even starting this project unless, and until, you have all the needed parts – other wise, you may find yourself at a point of no return and loss of the use of your car. I had all the needed parts for about 5 years, before I finally decided to get on with it.

The Major parts you will need are:

1. Teves IV Pedal box with brake pedal and dual function brake light switch – none of these items are interchangeable with the Teves III versions. The pedal box is a different shape and made of FRP (fiberglass reinforced plastic) rather than aluminum. The T4 brake pedal is a slightly different shape than the T3 brake pedal, and not interchangeable. The T4 brake switch mounts to the bottom of the pedal box rather than to a bracket fastened to the to the bottom side of the firewall pedal box mounting surface. Try to get the dual function brake pedal switch with your pedal box assembly – they are cheaper that way (maybe even free), but are available new from Jaguar Classic parts or SNG Barratt for something over \$100.
2. Vacuum Booster that Fits the Teves IV pedal box -This vacuum booster may be common to various Jaguar models of similar vintage, and probably used with some Ford stuff too – but I can’t say that for sure. They are available new, rebuilt, used, or you can get yours rebuilt (if you have one). You are probably most safe getting one known to be compatible with the late 95-96 XJS T4 versions.
3. Tandem Master Cylinder with attached triangular XJS brake fluid reservoir - The master cylinder is also common among a number of XJS and XJ models of similar vintage and others, but the brake fluid reservoir shape is unique for the XJS. The master cylinder is available used, rebuilt, and new (for a lot of money). You can probably get a new aluminum compatible master cylinder from *Wilwood* for less than a cast iron MC from Jaguar or some other retail giant. Be Aware that you will have to find a reservoir that will clear the cross-brace. The triangular reservoir is harder to get – the rectangular XJ (6 or 12) version will not fit. The best way is too work the “recycling” yards looking for a XJS Teves 4 tandem master brake cylinder –

rare to find listings for the reservoir separate. Once you find the master cylinder, you say – “great, I was really looking for the Triangular Brake Fluid Reservoir, and make sure the fluid level switch is working”. This switch is the only thing that will turn the Brake Red Warning Light on – an ABS fault or failure will not. Some sources will state that they won’t warrant the master cylinder, but will leave it attached to the reservoir. That’s great too - you can use that core when you order a rebuilt from Rock Auto (or others), or, check and see if it is clean and works OK – your call from that point.

4. Teves IV ABS Module comprised of electric hydraulic pump, valve body, and ECU all in one assembly – There are three models of this unit; LNA 2210-AA (3 channel), LNA 2210-BA (4 Channel + Traction Control). LNA 2210-BB (4 channel + Traction Control). Only the LNA 2210-AA was ever used on the XJS and is ABS only. The other two (-BA & -BB) were used on the XJ’s, X-300 and some others. They look similar but are different from the AA – be sure you get the LNA 2210-AA; the part label is on the bottom of the unit (bottom of the ECU). **Do all you can to get the plug/pigtail for this unit with at least 6 inches of wires sticking out to work with.** You can work with shorter, but splicing becomes more difficult with the shortness of these wires. This is the only way you can make your electrical connections to the ABS assembly. You really need to get the mounting plate / bracket for this unit – mounting plates are somewhat hard to find, and getting harder as they crush these cars. This mounting plate makes it easy to bolt the modular ABS assembly unit right to the same place that the Teves III mounting plate, pump, accumulator and multi-function pressure switch came from. You may be able to fabricate a mounting plate by modifying the Teves III plate if you can’t find the T4 item – can’t help you there, I haven’t been there. You may have to make your own gaskets for both mounting plates from thin foam weather strip, or just use a silicone sealant gasket maker.

OK, that’s it for major parts. You will also need about three feet of spare brake line (metric 4.7mm – 3/16”, and a couple each of small brake line nuts (10x1mm) and large brake line nuts (12x1mm). When you “remodel” your brake lines, save the line nuts removed from cut off sections - plus the ones you scavenged from the controller module - and you may have enough without buying any. You need at

least one coupling in addition to the one that is already on the passenger side brake line – the second one will be used to connect the left front brake to the brake line coming from the ABS module. You will also need a minimum of two quarts of Valvoline DOT 3 & 4 Synthetic Brake Fluid for brake bleeding. I prefer it, and have never had any ABS problems with the Valvoline, but you may choose your own as long as it is DOT 4. I used “Russell” type bleeders and my foot on the brake pedal to bleed the brakes after the plumbing was complete – worked great, but having a shop do it for you is best.

Don’t forget you will have to locate an engine intake vacuum source for the vacuum booster along with the vacuum line and check valve fitting to the Booster. You might look to the AJ16 cars with Teves IV to see where the vacuum source is. Those that have the pre-facelift V12’s will have to locate a source also. The facelift V12’s have a boss on the rear of the right intake manifold (see pics) that can be tapped as I did – the ’95-’96 V12’s with the Teves IV use that location also.

Tools: Bubble Flaring Tool, small tubing (brake line) cutter, and determination and patience. A small tubing bender could come in handy as well, but not required.

THIS BEGINS THE POINT OF NO RETURN