

Guides - Nova 16v Brake Conversion

DISCLAIMER: The information in these documents are a collection from experience (friends or myself), magazine articles, mailing lists and Internet web sites etc. So don't take these as 100% correct gospel, hence I don't take any responsibility for any of these guides.



Difficulty Rating: 4/5 - Need the right tools.



Download printable [Adobe Acrobat file](#) (240K)

Created: 3rd May 2000



Download zipped [web page version](#) (1.2MB)

Revision 2

Click on any of the pictures for a larger view.



Before...



...and after.

This is a step-by-step guide on fitting larger front 16v ATE brakes onto ANY Vauxhall Nova. The brakes in question are called "16v ATE calipers" and are commonly found off any Astra GTE or Cavalier GSi MK3. Before you can start you must have large enough wheels for the calipers to fit under them. **The smallest size wheel you can have is 14in x 5.5in, nothing less than this.** So if you've got SR 3-spokes, then forget it. The 16v brake conversion was carried out on a Nova GTE.



Caution: Brake fluid is poisonous. If any brake fluid is spilt on the paintwork, wash the affected area with cold water immediately. Brake fluid is an effective paint stripper.



Warning: When working on the brake components, take care not to inhale brake dust, since it may contain asbestos which can damage your health.

As the chart says above this isn't the easiest modifications to do if you've never done this sort of thing before. The main problem is that the bolts get very rusty and are very difficult to get off, this is where the WD40 and large bar come in handy. The Nova calipers have sliders on the two bolts that hold them on, these are NOT required on the 16v items. Also the dust caps don't fit on the 16v items either.



OIL BANK LINE
0800 66 33 66

It is illegal to dump oil down the drain. To find your nearest oil bank call the above number..

When fitting the calipers, the front brakes will need bleeding as you will lose a lot of brake fluid. Make sure you've got a bottle to hand to top up the reservoir. When the brakes have been fitted and braking system bled, it's time to take the car out for a spin. Do not do any hard braking, as you need to bed in the pads and discs. Just do gentle light braking at first. You will feel an instant improvement in braking power with these calipers on.

However, if you don't feel a big improvement (i.e. they don't feel much different than before), then you may have to upgrade the brake servo from a later spec Nova, i.e. from a GTE or GSi (all explained later on).

PARTS/TOOLS



9mm ring spanner for bleed nipples	4 or 5 Dot Brake Fluid	Trolley jack
Can of WD40	Socket Set (metric)	Hammer
Copper grease	Large flat screw driver	Long bar with 1/2" bit
Strong ratchet with 1/2" bit	Cross head screw driver	Brake hose clamp
Brake hose clamp	Can of Carb cleaner	"1 Man" Bleeding Kit
		Pair of axle stands
		Allen bits 7 - 10mm
		Haynes book

COST

Pair of Cav GSi 16v Calipers	£60	<ul style="list-style-type: none"> • One Man bleeding kit and hose clamp can be purchased from your local car accessory shop or Halfords etc. • The 16v calipers where brought from the local scrappy (pair) and cleaned up. • The discs and pads where uni-parts items and got them at trade price. Came to £110 in all, ASW used to charge £250 inc VAT, saving £140 !!
Astra GTE 16v disc and pads	£50+	
Brake fluid (4 dot) 500ml	£4+	
Brake hose clamp	£5+	
Can of Carb Cleaner	£4+	

General Notes:

Just before you start, make sure you note the following:

- If you don't have one, buy a Haynes manual for your car and have this in front of you. You'll may need this on how remove the calipers and discs.
- Minimum wheels is 14in x 5.5in, nothing less. Also the weights will have to be on the outside with this size of wheel, or they will foul the caliper.
- Use copper grease on the back of the pads and on wheel hub for future removal.
- Make sure the brake reservoir cap is off before you start and put a sheet over it to stop dirt getting into the reservoir (it makes it easier to push back the piston bore in the caliper with the cap off).
- Use a brake hose clamp if possible as there will be LOADS of brake fluid coming out. Remember to clean the hose end and the screw/washer that it goes with it. Try and not to get any dirt in the brake fluid system.
- Press the brake cylinder bore back as far as possible when fitting the brake pads.
- You may use a can of 'Carb Cleaner' on the brake discs to clean the surface, as this removes grease and dirt very well (do not get this on plastic or paintwork).
- The larger disc's can fit inside the brake shield, it's optional to remove them.
- Follow the brake bleeding instructions word for word in the Haynes manual, believe me it works. Or follow the [step-by-step guide](#) on this web site.
- If you wish, use the Haynes manual along side these step-by-step instructions.

OK, got all the above? Then follow the steps below (remember to click on the pics for a bigger view):

Step 1

First you need a pair of 16v calipers. It's best to clean these up as much as possible before you start. You don't need the sliders for these.

Step 2

These are a pair of 16v (Astra GTE) discs on left - and old Nova GTE disc on right. Also get new 16v pads for them as well.

Step 3

Jack up the car and remove the wheel. Undo the brake fluid reservoir cap. You won't see these old Nova things for much longer.

Step 4**Step 5****Step 6**



With the wheel removed, take apart the caliper (2 hex bolts) and remove the front pads. You'll might need a bit of WD40 to loosen those bolts.



The carrier and the rear pad is all that is left. Now remove the carrier (2 Allen bolts) with rear pads. Don't loose the bolts obtained so far.



The carrier is still attached to the brake hose, suspend this out of the way (without stressing the hose). Remove the brake disc to expose the disc shield.

Step 7



To remove the brake shield (optional), rotate the wheel hub so that a cross head screw driver can fit through one of the large holes. Again these 3 screws may be VERY hard to undo, if not impossible.

Step 8



If the screws can not be removed, then the brake shield will have to be cut off. Use the brake hose clamp and remove the brake hose from the caliper (some fluid will come out). With the brake shield, caliper and disc removed, the new 16v brake disc can be put on.

Step 9



Be sure to clean the hub and face before putting some copper grease on. The 16v disc will fit straight on. In this shot the disc shield is still there, and it's VERY close to the disc. In this case the shield was bent back so it did not foul on the disc.

Step 10



Separate the 16v calipers and don't put the pads in yet. Place the 16v carrier in the same position as the Nova ones. Use the Nova Allen bolts (but not the sliders) to put them on. Make sure the piston bore in the caliper is pushed right back.

Step 11



With the 16v carrier now on, put the two pads on (with a bit of copper grease) and put the rest of the caliper together using the 16v bolts that came with them. This shots shows the disc and calipers without the brake shield on.

Step 12



Tighten ALL the bolts up, the dust caps that were on the Nova calipers won't fit on the 16v ones. This shot shows the 16v disc and calipers with the disc shield on. Fit the brake hose back on and bleed the brakes. Put back the wheels and make sure it rotates.

Not finished just yet.....

Now that both the 16v calipers/disc's/pads are on, it's time to **bleed the system**. There have been a few horror reports about the brake servo going on them or the seals turning inside out and doesn't give any brake pressure. Well I brought a DIY brake bleeding kit from Halfords and followed the instructions word for word in the Haynes book. I made sure there was no dirt in the system when putting the new calipers on etc. And it feels very solid after bleeding, and have had no problems so

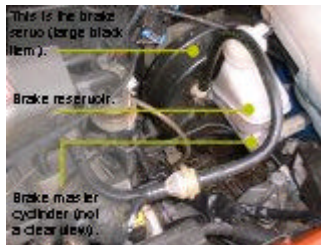
far. It helps if there are two pairs of hands for this job.

Once bleeding the brakes are done, it's time to try out the 16v stuff. **Don't stamp** on the brakes to see if they work, remember these are new calipers, new disc's and new pads. Plus you've just bleed the system. So a lot of things can go wrong. When driving it around, use light pressure on the brake pedal, you need to **bed the brakes in** (avoid heavy braking for the first **120 miles**). After about half an hour or so of driving, take another look at the brakes. Check to see that the brake reservoir is still topped up, and that there is no brake fluid around the wheels. During the drive you've should of have seen any major faults anyway. If there are no problems, then you've done a good job....well done :)

But the brakes don't feel much better than the old ones, why?

As this guide was carried out on a Nova GTE, these have the biggest brake servo's fitted (Nova GSi have the same items), hence I felt the difference straight away. These are 200mm in diameter. If you've fitted these 16v ATE calipers to a smaller engine car, i.e. a 1300 or 1200, these have smaller brake servo's fitted (180mm in diameter). So the answer is to fit the larger Nova GTE/GSi brake servo to your car.

Is this a difficult job?:



I've never done this modification, so I can't honestly say. But the items are exchangeable, i.e. they should fit straight in with no modifications to the master cylinder. You should be able to pick up the bigger brake servo's from your local scrappy. Follow the instructions in the Haynes Manual as they show how to take the item apart and refurbish it.