



### Essential tools

- Spanners
- Socket set
- Hex bits
- Grips

### Useful info

DIFFICULTY  
RATING: 3/5



TIME TAKEN:  
One day



# VXR TURBO INTO MK4 ASTRA

Swapping the original turbo from a Mk4 Astra GSi for a VXR unit will give you more power and better reliability. Here's how to do it.

Words and photos: Martyn Williams

**T**he Mk4 Astra Turbo can benefit from some easy power gains and one of the simplest modifications is to fit the turbo from an Astra VXR. The turbo from the Astra VXR already has high performance credentials and improved durability. It's able to stand more heat than the standard ZLET turbo, which has a manifold that has been known to crack and Courtenay also recommend it as a better bet than aftermarket hybrid units. It's also worth noting that the turbo from the Astra VXR can also be used to upgrade other Vauxhall turbo engines including the Zafira (A and B models), the VX220 and VXR220 Turbo and it is also suitable as a direct replacement unit for the Z20LEL/Z20LER Mk5 Astra (170/200 PS models). The Z20LEH turbo also has the advantage of big manufacturer research and development which adds up to a better response and a corresponding improvement in driveability - ideal for anyone thinking of upgrading to

Stage 3 and 4 along with relevant software remapping.

At £495.00 for the complete unit, the VXR turbo is relatively inexpensive - less than the original unit in fact. Another saving is that the expense of a remap is not required for standard cars. Additionally, Courtenay can reset the static pressure on the actuator to suit standard models that work at a lower pressure than the Astra VXR. Money can be saved by DIY-fitting shown here, but for non-DIY types, Courtenay charge £840.00 for the turbo and fitting which includes gaskets, oil, filter and a 12 month, 12,000 mile warranty (which you won't get if you fit it yourself). Early failures of turbos fitted by customers include bits falling unnoticed into the intakes.

The VXR turbo from Courtenay comes complete with the standard actuator which can be used on anything up to and including Stage 3 remapped cars (the Astra being converted here is a Stage 3 motor, complete with a 3 inch exhaust). An updated actuator and bracket is available additionally at £129.95 for

Stage 4 cars. Another upgrade offered by Courtenay is the fitment of an updated turbo bearing assembly priced about £150.00. The turbo can be supplied with all the items normally required for the replacement process. These include the exhaust manifold gasket, sump bolt washer, breather tube gasket and turbo oil drain gasket (at £14.50), fully synthetic Valvoline 5W-40, GM Longlife oil filter and sump bolt washer at £46.55. There is also a replacement manifold stud and nut kit (10 of each) at £23.00 and the turbo-to-exhaust clamp priced at £39.85. Courtenay also offer a stainless steel washer plate for the exhaust manifold at £20.75.

Before removing the old turbo, it's worth thinking about getting at least a couple of exhaust manifold studs and a set of nuts. Studs breaking off, particularly at the number one cylinder end, is not uncommon. If it does happen, an experienced TIG welder should be able to build up metal on the end of the stud without harming the head. If there is a stubby bit left, the welder might be able to attach a

nut to get a socket on to it. The only other complicated thing about fitting the VXR turbo is that the actuator setting is lower for non-VXR turbo cars which have not been remapped (see pictures showing adjustment of the actuator). If left at the standard VXR wastegate release pressure on a car with standard mapping, the extra pressure can set the ECU into over-boost protection mode. If this happens, the engine management warning light will come on and boost will be limited to five pounds at the most and the ECU will have to be reset. If a VXR turbo hasn't been recalibrated for lower boost, an emergency measure to hopefully prevent the ECU from tripping out is to slacken the inner and outer nuts on the actuator rod and move the outer nut so that the distance from the end of the rod to the outer face of the nut measures 5 mm. Nip up the inner nut to secure the rod, and hopefully it won't be too far out. It could be checked with a known-accurate boost gauge, but waiting for the turbo to cool down to make guesstimated adjustments is not ideal.