



PIPE DREAM

With the budget on the Project Peanuts Ka rapidly disappearing, and the need for a proper exhaust suddenly upon us, there was only one thing for it... We were going to have to make it ourselves...

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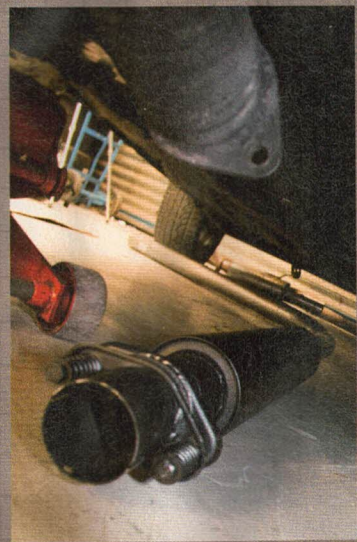
Designing and building an exhaust system is something of an art form, you only have to have a look at some of the products from the top fabricators and exhaust companies to see that. However, high-level workmanship comes with a high-level price tag, which is fine if you're Malcolm Wilson and have a million pound budget. Or if you are building a huge power one-off project that needs something a bit special, then many people will dig deep and shell out on something a bit pricey, but not all of us have access to a Bill Gates-sized wad of cash when it comes to project cars, so we felt the need to investigate another option.

The option of using an off-the-shelf system for our application wasn't there. As far as we know, there isn't an exhaust manufacturer anywhere that lists a full system for a Zetec Turbo Ka, and with the custom fabricated option already dismissed due to the teeny budget, there was only one option... We were going to have to build something ourselves!

We enlisted the help of exhaust manufacturer Jetex, who has a huge listing of universal straights, bends and flexi joints, not to mention an even bigger range of silencers in all manner of lengths and diameters. All we would have to do is work out what we need, and then figure out how to put it all together!

CHOOSING THE BITS

Obviously it depends on your application what you would need to order, but it's not just what car you're fitting it to that that you need to think about. You need to take into consideration the power output of the car, whether it's naturally aspirated or turbocharged, how loud you want it to be, where you want the tailpipe to exit, what you want the tailpipe to look like, what material you want to use... The best option really, is to have a good look at the underside of your car to see what available space you have, and download a copy of the Jetex parts catalogue and work your way from front to back, noting down each part, not forgetting the clamps!



OUR CHOICE

As our Ka is a little bit crazy already, we decided to build on this further by giving it a crazy exhaust. The 270bhp+ power figure that was recorded on the dyno determined we would need at least a 2.5" diameter pipe, so we chose the biggest silencer we could

find, as we were only planning on using one, and then a series of bends and straight sections which would allow us to exit the pipe in a slash cut just in front of the driver's side rear wheel. We also opted to use mild steel to help keep costs down.

MANUFACTURING

Step 1

With the car positioned on axle stands, or on a ramp if you're lucky (Which we weren't! - NT), remove the original system if still fitted, and work out where you need everything to go. The main things you need to think about are the silencer location and the tailpipe location. Then it's just a simple job of connecting everything together...



Step 2

Our engine was already fitted with a downpipe from when it was run on the engine dyno, so we could connect our system to this.

We cut off the flange and joined one half of our flexi joint to it. This could be clamped, but we chose to do it properly and enlisted the help of a handy local welder. Pretty much every garage and bodyshop has some form of welder and would be able to run a ring of weld around it for you for a few quid.



Step 4

The next section would be our silencer, so we clamped the other end of the flexi joint into the end of the silencer and bolted it in to place.



Step 5

For the next section, we would need a series of bends to move the pipe under the chassis rail and across to the driver's side sill of the Ka. We used two 30° bends, which allowed us to adjust the angle of the pipe to tuck it up as high as possible to give as much ground clearance as possible.



Step 6

As the Ka is going to be sat quite low, we again borrowed a welder to run a quick ring of weld around the join to eliminate the need for a bulky clamp. This isn't, however, a necessity, and a clamp would have been fine.



Step 9

With all the welding complete, it was then time for the final assembly. Again, starting at the front, bolt each section in to place and tighten the clamps firmly.

As we had opted for mild steel, we gave the tailpipe a quick blow over with some high temp black paint, just to keep it looking nice.



Step 8

With the system in place and being supported on stands, we then needed to manufacture some way of supporting it. We used the standard Ford rubber hangers and original mounts on the car, then using some steel bar, bent two new hangers into shape before firing them back across to our ever helpful welder to stick them together.



Step 3

With a quick coat of high temp paint applied to help protect against rust, we then refitted the downpipe.

Step 7

The next two sections are simple straights that bring the pipe to the edge of the Ka. Our plan was to have the tailpipe exiting at an angle in a slash cut, but this would also mean that we would have a clamp right next to the tailpipe, so purely for cosmetic reasons we welded this section together as well. But as before, this is completely optional and we only really did it because we could. A clamp would hold things perfectly.

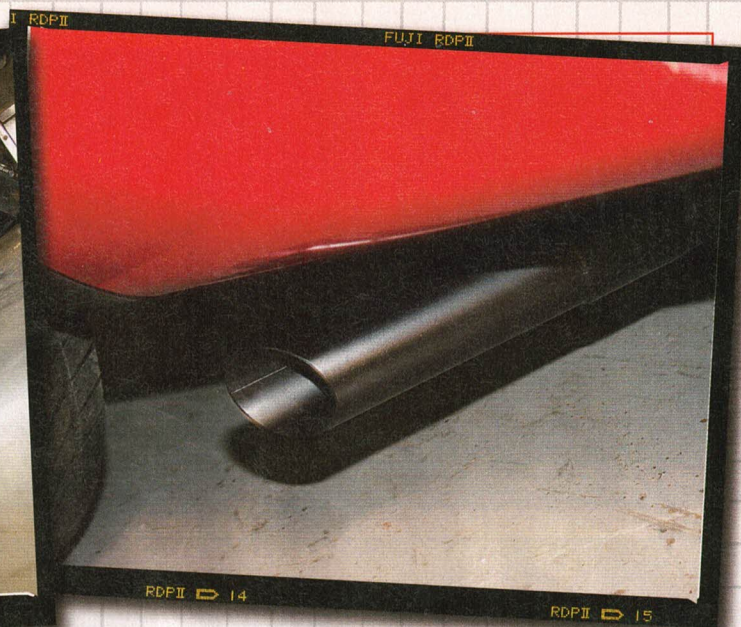
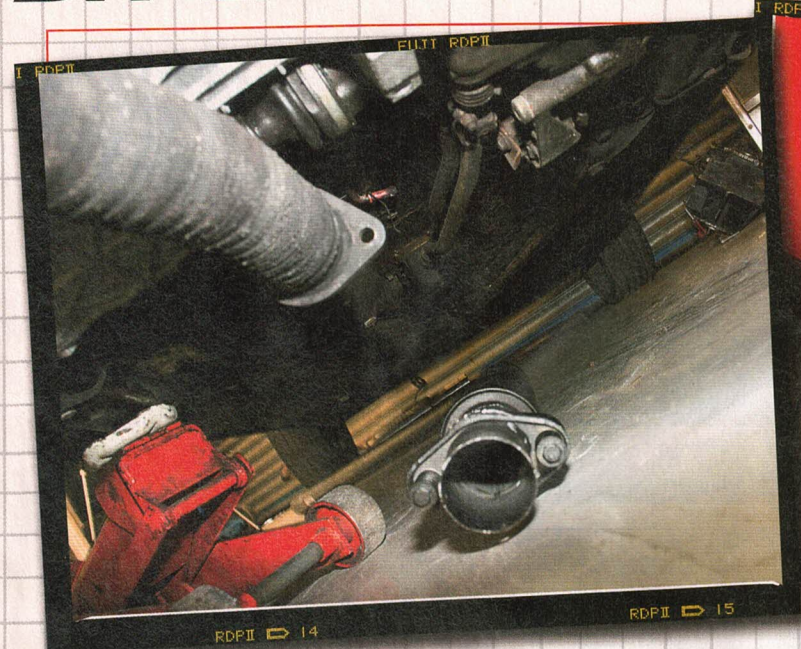


Finished

Although we've chosen a lairy side pipe, we think the end result actually looks quite subtle. Although how subtle it will be when we finally start the engine up and have it shooting ten-inch flames out while bouncing off the limiter, we're not sure!



DIY EXHAUST



WHAT IT COSTS

3 x Mild steel metre pipe with swaged ends	£7.28 each
2 x Mild steel 30 bends with swaged ends	£7.93 each
1 x Aluminised steel compensator/flexi joint	£40.91
1 x Aluminised steel Tubex silencer	£52.92
5 x 2.5 U clamps	£2.10 each
Welding	£25.00
Total:	£213.88 (inc. VAT)

PIPE DIAMETER Vs BHP

1.5"

Suitable for power outputs up to 100bhp

2.0"

Suitable for power outputs 100-200bhp

2.5"

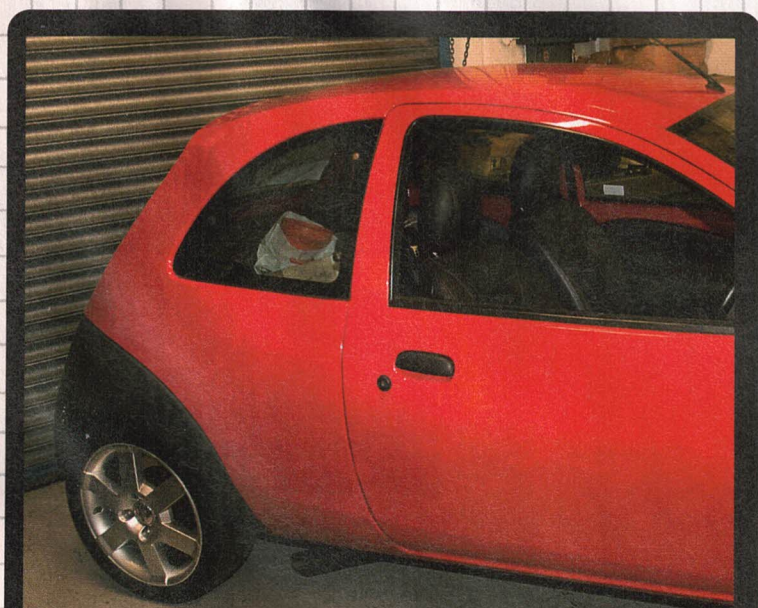
Suitable for power outputs 150-275bhp

3.0"

Suitable for power outputs 200-350bhp

3.5"

Suitable for power outputs 250-500bhp



THE END RESULT...

We were pretty happy with the end result of our efforts. It took us half a day, with us spending most of it lying on a cold concrete floor, but for a little over £200, we've managed to build a full exhaust system that looks cool, will hopefully sound awesome, and probably be loud enough to annoy us, our neighbours and the local constabulary... Job done...

CONTACT & THANKS:

Jetex Exhausts - 01789 298989 www.jetex.co.uk,
Steve Stripe at Xworkss for lending us his workshop and
welder - 01621 828889

jetex