

**The following article gives detailed information about replacement Ford cylinder blocks, their history, and what to look out for.**

**S**ome of you may require now, or in the future, to find a replacement cylinder block for various reasons. Such as non-original ventilation holes caused by escaping conrods, worn out bores or a desire to increase capacity. I thought it might be helpful to jot down a few relevant paragraphs to clarify what the different blocks are and where they may be found. I propose to deal with blocks which can be used with crossflow type cranks or steel ones of similar dimensions, for those who wish to build big capacity engines.

Firstly, identification. Start by checking the casting number which is situated at the left hand lower rear of the block. This number always ends in 6015 which is Ford Motor Co's part number for cylinder blocks. It's

**711M 6016 MKII Escort, MKIII, MKIV, Cortina, Single Wheel Transit**

These three require crossflow crank and machining of top face.

Of the first five blocks, with the exception of 2731 6015, all were produced as 'L' Block, i.e. letter L cast into block between right hand engine mounting bolt holes. This normally means that they have been cast with more metal around the cylinder bores, to accommodate the larger bore of the Twin Cam as compared to ordinary Cortinas. It DOES NOT FOLLOW however that they were all used in Lotus engines, as many of them found their way into the Ford engine exchange scheme and trundled around for years propelling Granddad and his Yorkshire Terrier in the trusty 1500cc MKI. If you can

has round section main bearing caps which don't survive long about 7000 rpm.

**(2) 120E 6015**

The most common MKI Cortina block, basically same as (1) above although will usually bore larger if its an 'L' type block.

**(3) 2731 6015**

The last of the 1500cc non 'L' blocks, originally fitted with 6 bolt crank, usually bores to 83.5mm OK. Requires relieving for clearance if fitted with a Lotus crank. Round main caps.

**(4) 681F 6015**

The 'L' version of this block was the original fitment in MKII L/Cs and

the numbers and suffix letter preceding this number which are important, provided they are CAST IN as part of the block. If they've been ground off and something else over stamped you could have anything. So, now for the blocks as Henry VIII said to Anne Boleyn.

There are eight different blocks which can be of use to us. Five take a Lotus crank, the other three were originally used in 1600cc crossflow motors.

These are the numbers to look for:

**122E 6015 Early Lotus & GT, very rare**

**120E 6015 1500 Cortina, Capri, Lotus, Cortina (L/C), 1500GT**

**2731 6015 MKII 1500 Cortina**

**681F 6015 MKII L/C**

**701M 6015 Found in the most odd places, rare and desirable**

All above can be used with 4 bolt or 6 bolt L/C cranks.

find one of these, it is in effect a new L/C block, as 1500cc Cortina bore size is 1.5mm less than the L/C. For this reason, always check the engine in any scrap Cortina MKI or MKII. We have found 6 'L' blocks in this way in the last 12 years!

In spite of the foregoing, blocks without the 'L' marking can be used in L/Cs in 90% of cases, and there is another marking to watch out for which gives a clue. This is the T number, cast into the top middle left of the block, and front right, adjacent to the distributor. As a general rule, any non 'L' block numbered T1, T2, or T3, will bore out to Lotus + .040 bore size. 'L.' type blocks carrying these low T numbers mostly can be bored to 85mm without going porous, which gives 1650cc and 150-155 BHP with appropriate head and camshaft mods. This is getting towards "Sod the expense, give the cat another goldfish" for road use however, as 85mm pistons are rare and expensive.

Now a brief rundown on each block, its pros and cons.

obviously takes the 3020E type b6 bolt L/C crank. Round main caps. Most will bore to 85mm if they have a low 'T' number.

#### **(5) 701M 6015**

Something rather special, reputedly of Ford Germany origin probably for the Escort T/C. Only made as an 'L' block, a meatier casting altogether, with big square main caps, the best basis for a competition engine, and much sought after. Many were used with 81mm bores towards the end of Ford's engine exchange scheme for the 1500cc Cortina, so you know where to look!

All the above blocks can be used with 4 bolt or 6 bolt crankshafts, but you must use the correct sump, as they are not interchangeable and if fitting a 6 bolt crank in an early block you have some fancy welding to do on the oil pick up pipe.

We now come to the 1600cc type blocks, to which people are turning for a useful capacity increase and easier availability.

**681F 6015 Early 1600 Xflow,  
1600E, etc.**

**(1) 122E 6015**

**(1) 681F 6015**

**2737E 6015 Early 1600 Xflow,  
1600E, etc.**

Originally used in some early Cortina GT, Capri GT, early L/C. Very rarely seen, most have worn out or blown up. Will normally bore to 83.5mm, originally used 4 bolt crank,

Confusing, as this early crossflow unit used in 1600Es and 1600 GTs carries the same number as the MK II L/C but is easily

distinguished as they were never produced as 'L' blocks and are 7/16th" taller. Fitted with the weaker round main caps, hardly worth the effort converting, unless you've got one kicking about that owes you nothing.

**2737E 6015**

Virtually identical to above, except it has a dipstick hole at right hand rear, which must be blocked off if used

No doubt someone amongst our readers will say they have an 'L' block, other than a 701M with square caps. This is entirely possible because there are other people as mean as I am, who find a scrap crossflow 711M block, transfer the caps and blots to their 'L' block and have it line bored, saving the cost of steel caps at £60 odd.

It is possible to fit six bolt cranks to early blocks and vice versa. I've come across both. Very few Twin Cam

proposition for a road car. It is also not legal in this country in any form of motorsport where it would be competitive. Where Twin Cams of such capacity are allowed they usually have to run against B.D.A.s or Pintos and can not reliably match the power of either.

For those desiring a meaty, big capacity road engine and less concerned with originality, a safer route to follow is to obtain one of the late type (South African) 711M

with a Cortina sump. Found in 69-71 Capris and "coke bottle" Cortinas.

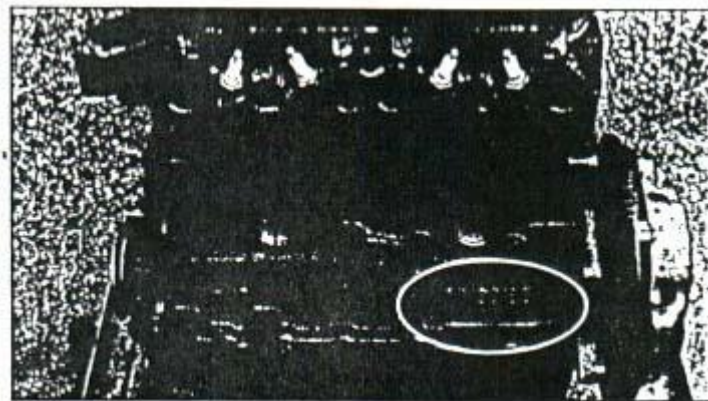
### **711M 6015**

The best 1600cc block, meaty casting and strong main caps. Its associated crank and rods usually stand 7200rpm when tuftrided and balanced and normally bores out to 83.5mm O.K. (1700cc). Larger bores than this not recommended, as to fit a T/C they have to have approx. 1/4" machined off top face and if bored beyond 83.5 they become weak and prone to cylinder heads dancing about and/or porous cylinder bores.

When used in a L/C all three of these units, once correctly machined, accept all the other components of a MKII L/C engine, sump,

flywheel, head, etc. but require longer timing chain, tensioner plunger and spacers for top of timing

engines I've dismantled in the last five years have had their original block, head or crankshaft, stark testimony to a combination of poor maintenance, sub standard antifreeze and lots of right foot!



A word of caution on 1760cc engines. The conversion is NOT one that I recommend, as it is necessary to use special pistons and/or conrods. Such engines normally have a short life due to stresses set up by components not designed to run together. Such a unit is not a practical, or economic

crossflow blocks and have it bored to 85mm, which gives 1760cc on the standard crossflow 1600 block.

Carefully assembled by an experienced engine builder, using a tuftrided crank, with a decently modified big valve head and Lotus 14 type cams.

Such an engine will produce 155 BHP, loads of torque and last for ages if rev limited to 7,200 rpm. This would give a MK II Lotus Cortina, on the standard 3.7 diff a theoretical top speed of 130 mph!

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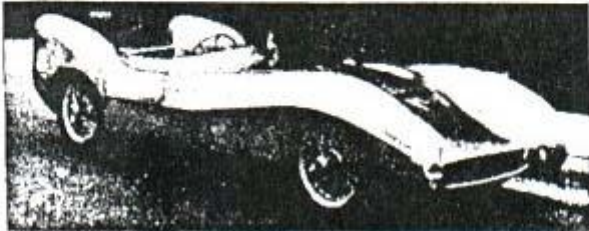
cover and bottom of oil tube. If a camshaft change and carburetter rejetting are done at the same time, 145-140 BH and lots of torque are readily available.

It is normally best to steer clear of blocks which have had cylinder liners fitted, unless the engine has been unused since it was done and there is proof that the work has been done by a competent firm as liners tend to move, causing head gasket problems, unless very carefully fitted.

I also thought it worth covering a few additional points on those almost mythical components. In particular, main bearing caps. No series production block, fitted as standard, used square section main bearing caps until the introduction of the '711M' type crossflow blocks in 1970/71. The 710M type 'L' block used square caps, but was never a line fitting in any Cortina produced in this country, although some eventually found their way onto Ford's exchange engine scheme for the 1500cc Cortinas.

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