

# The Elan Factory - Product Data Sheet



## Lotus Twin Cam crankshafts

As the Ford/Lotus TC cast iron crankshafts reach the end of their service life, Lotus owners will be faced with a decision as to what to use for a replacement crankshaft. The best option is to install a suitably modified Datsun steel crankshaft. These can be modified successfully to fit the Lotus 701M cylinder block. There is a choice of available crank strokes, which are as follows:

Standard 72.75mm stroke as a replacement for the 701M based engine

Standard 77.62mm stroke as a replacement for the 711M based engine

These crankshafts are offered in a number of different stages of finish according to customer preference. All crankshafts undergo prerequisite operations that are essential to manufacturing a reliable and quality product. These modified Datsun steel crankshafts enjoy a reputation for being race proven and being able to withstand 10,000 rpm.

### Crack testing

Crack testing is the first operation that the crankshaft is subjected to and this is carried out by using standard testing methods. This check ensures the crankshaft is suitable for service and subsequent modifications.

### Stress relieving

Stress relieving is achieved by using standard heat treatment methods. This “relaxes” the crankshaft and removes any internal stresses caused during service life. It also anneals (softens) the crankshaft material after being induction hardened during production and allows the crankshaft to be easily machined.

### Machine critical dimensions

The crankshaft is mounted in a lathe to remove metal in specific areas so as to achieve the correct stroke, obtain critical clearances and modify counter balance weights.

### Grinding

This is carried out on a crank-grinding machine. This operation determines the final dimensions (including phase and stroke) and ensures the crankshaft fillet radii are correct.

### Balancing

This is carried out on a Suncon crank-balancing machine. The resultant balance is better than one gram.

### Nitriding

This process involves the crankshaft being “soaked” in dry ammonia gas at a temperature of 500 – 520 degrees Centigrade. The heated ammonia gas breaks down into nitrogen and hydrogen. The nitrogen content is then absorbed slowly in to the crankshaft and forms a hard surface. (Typically 70 Rockwell C)

### Polishing

This operation is carried out to remove surface discolouration and any undesirable marks from the crank journals. This results in a mirror-like finish, which is both hard and extremely durable.

### Pricing

Basic crankshaft 72.75mm stroke (includes crack testing, stress relieving, machining and grinding operations) @ \$640-00 plus GST (plus exchange Datsun 1600cc crankshaft)

Basic crankshaft 77.62mm stroke (includes crack testing, stress relieving, machining and grinding operations) @ \$665-00 plus GST (plus exchange Datsun 1800cc crankshaft)

### Additional costs

Balancing costs @ \$95-00 plus GST

Heat treatment costs @ \$185-00 plus GST

Journal polishing costs @ \$95-00 plus GST

Fully finished 72.75mm crankshaft \$975-00 plus GST (plus exchange Datsun 1600cc crankshaft)

Fully finished 77.62mm crankshaft \$995-00 plus GST (plus exchange Datsun 1800cc crankshaft)

**Note.** Prices are “subject to change without notice” meaning all items are charged at the price applicable at the date of despatch.

For further information regarding modified crankshafts, lightweight flywheels, performance products, please phone The Elan Factory on (613) 9761-1903 or fax on (613) 9739-8944. Alternatively you can write to The Elan Factory at 5 Marong Court, Boronia Heights 3155, Melbourne, Australia or e-mail at [elanfactory@optusnet.com.au](mailto:elanfactory@optusnet.com.au)