About Us

Crosthwaite and Gardiner is one of the world’s leading manufacturers and suppliers of parts to the historic motor racing industry. Established in 1969, the company is built on a wealth of knowledge and experience gained through over 40 years of producing parts for some of the most famous and important racing cars the world has ever seen.

Crosthwaite and Gardiner was established as a result of the joint passion of Dick Crosthwaite and John Gardiner for historic racing cars, and for Bugatti cars in particular, and has continued to build upon this Bugatti expertise ever since. The company has now worked on every Bugatti, bar the Royale. Buying stock, original pattern equipment and drawings over the decades and manufacturing parts for all the cars they have worked on has resulted in Crosthwaite and Gardiner carrying the largest stock of quality Bugatti parts in the world.

Expanding on their renown for Bugattis, Crosthwaite and Gardiner developed their expertise into manufacturing components for other famous racing marques. This highly successful expansion has lead to a series of projects to re-create historic racing engines, resulting in brand new Coventry Climax FPF, Maserati Birdcage, Jaguar LWE and D-type engines. The resulting critical acclaim has meant that today these engines are the strongest product lines offered by Crosthwaite and Gardiner.

Crosthwaite and Gardiner’s enviable and un-rivalled experience in the historic racing industry has given them an incredible depth of knowledge of the cars they work on. This expertise means that they know exactly how each car was built and finished at the time it was originally manufactured. This allows the company to create faithful restorations conserving the important originality and authenticity of the cars and its parts. Crosthwaite and Gardiner recognises that in order to complete a restoration to the highest level while maintaining historical accuracy, the ability to use as many original parts as possible is paramount. The company therefore prides itself on its ability to repair and save what others would misconstrue as un-usable parts, whilst maintaining structural integrity and reliability. The company achieves this by successfully combining traditional craftsmanship with the latest technology and manufacturing methods.

Crosthwaite and Gardiner are proud to manufacture the finest products for the finest cars in the world. Be it a precisely crafted Bugatti nut or a world beating Auto Union Grand Prix car, the attention to detail and quality is always the same.

Not all of the products we currently manufacture are in this catalogue and if you have any enquiries please do not hesitate to contact us.
## XK ENGINE

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Jaguar Engine Building at Crosthwaite & Gardiner

Jaguar XK engines are a speciality of Crosthwaite & Gardiner - our Light Weight E Type and D Type engines have won historic races all over the world and are just as suited to road use, too. We have a number of different specifications available and work to not only build all-new engines, but to refurbish and bring new life to old blocks. We are especially renowned for our Wide Angle cylinder heads and aluminium blocks.

Crosthwaite & Gardiner isn’t just a producer of premium quality components - it is also a known birthplace for some of the finest historic race engines to grace the planet. Our dedicated engine-building department consists of three highly experienced engine builders, all specialists in the assembly of Jaguar D Type and E Type engines (as well as Bugatti, Maserati and Coventry Climax engines) - however, a partial or complete rebuild for almost any historic race engine is well within their capabilities and a wide variety of projects have passed through this workshop over the years.

Crosthwaite & Gardiner Jaguar engines are built from only the finest components. Blocks, heads and many other sand-cast components are cast at carefully selected UK foundries using our expansive array of pattern equipment. The best quality billets available are ordered from UK suppliers too, with everything meeting at our historic Sussex factory.

Here, components are precision machined in our impressive machine shop before undergoing rigourous inspection procedures, after any necessary metal treatments are carried out. This ensures that only the very best quality components make it onto our shelves and into our engines.

Once built, all engines go through an extensive setting up process on our in-house engine dyno, prior to delivery. We have two water brake dynamometers, the larger of which can be used for engines up to 1000bhp - all Jaguar engines are tested using this equipment, as can be seen over to the right. Our engine builders expertise extend both to carburetted and mechanically injected fuel delivery methods for all manner of applications.

Our Light Weight E Type engines are available in a number of formats. Block options include refurbishment of a customer-supplied iron block (we do have a small quantity of iron donor blocks available also), or alternatively we can supply a brand new aluminium block. Wet or dry sump lubrication can be fitted, while carburation and fuel injection (using butterfly or slide throttles) are also fully catered for.

Crosthwaite & Gardiner D Type components are true to the original format, utilising a 7 degree engine slant and a cross shaft-powered dry sump system. Original engines were iron block and we abide by this, refurbishing original blocks as a base for our D Type engines.

Please note that all of our engines are designed to simply use premium pump fuel (Shell V Power, for example), with no need for additives.
Jaguar Engine Building at Crosthwaite & Gardiner
Jaguar LWE Engines

**Jaguar LWE engine - iron block, carbureted, wet sump**
Complete replacement engine using original iron cylinder block

**ENGJAGLWE-1**
Specification includes:
- Wide Angle cylinder head
- High lift camshafts
- 48 DCOE carburettors
- Full refurbishment of customer's cylinder block
- C&G-designed pistons
- H-section connecting rods
- 8 weight C&G-designed crankshaft
- Wet sump lubrication system
- Lightweight steel flywheel
- Alloy water pump

**Jaguar LWE engine - iron block, carbureted, dry sump**
Complete replacement engine using original iron cylinder block

**ENGJAGLWE-2**
Specification includes:
- Wide Angle cylinder head
- High lift camshafts
- 48 DCOE carburettors
- Full refurbishment of customer's cylinder block
- C&G-designed pistons
- H-section connecting rods
- 8 weight C&G-designed crankshaft
- Dry sump lubrication system
- Lightweight steel flywheel
- Alloy water pump
Jaguar LWE engine - aluminium block, carbureted, wet sump
Complete replacement engine using all new parts
**ENGJAGLWE-3**
Specification includes:
- Wide Angle cylinder head
- High lift camshafts
- 48DCOE carburettors
- Aluminium alloy cylinder block
- C&G-designed pistons
- H-section connecting rods
- 8 weight C&G-designed crankshaft
- Wet sump lubrication system
- Lightweight steel flywheel
- Alloy water pump

Jaguar LWE engine - aluminium block, carbureted, dry sump
Complete replacement engine using all new parts
**ENGJAGLWE-4**
Specification includes:
- Wide Angle cylinder head
- High lift camshafts
- 48DCOE carburettors
- Aluminium alloy cylinder block
- C&G-designed pistons
- H-section connecting rods
- 8 weight C&G-designed crankshaft
- Dry sump lubrication system
- Lightweight steel flywheel
- Alloy water pump

**Butterfly Throttle Fuel Injection**
These butterfly injection assemblies are faithful to the original LWE fuel injection systems, use premium quality components throughout and are assembled by our experienced engine builders. All-new components are used in conjunction with a refurbished Lucas fuel metering unit. Fuel injection systems are only available when purchasing a complete engine.

Jaguar LWE engine - aluminium block, butterfly throttle fuel injection, dry sump
Complete replacement engine using all new parts
**ENGJAGLWE-5**
Specification includes:
- Wide Angle cylinder head
- High lift camshafts
- Lucas metering unit (refurbished)
- Butterfly throttle fuel injection
- Aluminium alloy cylinder block
- C&G-designed pistons
- H-section connecting rods
- 8 weight C&G-designed crankshaft
- Dry sump lubrication system
- Lightweight steel flywheel
- Alloy water pump

**Slide Throttle Fuel Injection**
These slide throttle injection assemblies are faithful to the original LWE fuel injection systems, use premium quality components throughout and are assembled by our experienced engine builders. All-new components are used in conjunction with a refurbished Lucas fuel metering unit. Fuel injection systems are only available when purchasing a complete engine.
Jaguar D Type Engines

Jaguar D Type 3.4-litre engine - iron block, carbureted, dry sump
Complete replacement engine using all new parts and customer's iron cylinder block
ENGJAGD3.4

Specification includes:
- Wide Angle cylinder head
- High lift camshafts
- Full refurbishment of customer’s cylinder block
- C&G-designed pistons
- H-section connecting rods
- 8 weight C&G-designed crankshaft
- Dry sump lubrication system
- Lightweight steel flywheel
- Alloy water pump
- Carburettors not included

Jaguar D Type 3.8-litre engine - iron block, carbureted, dry sump
Complete replacement engine using all new parts and customer’s iron cylinder block
ENGJAGD3.8

Specification includes:
- Wide angle cylinder head
- High lift camshafts
- Full refurbishment of customer’s cylinder block
- C&G-designed pistons
- H-section connecting rods
- 8 weight C&G-designed crankshaft
- Dry sump lubrication system
- Lightweight steel flywheel
- Alloy water pump
- Carburettors not included
Jaguar D Type Engines
C&G Jaguar XK Wide Angle Cylinder Heads

Crosthwaite & Gardiner Wide Angle cylinder heads are being used by competitors in historic motorsport around the world. These proven race winning cylinder heads are equally suited to road use.

Each Crosthwaite & Gardiner Jaguar cylinder head begins life at one of our carefully selected UK foundries, where they are sand-cast as in period. Following this it undergoes a series of machining processes at our Sussex factory. This includes 5-axis CNC porting and the fitting of valve guides and seats. All heads are put through a rigorous inspection process using micron-accurate computer-based measuring systems, as well as the eyes of our extremely experienced team of engineers.

Our latest port profiles and processes have been developed using state of the art engine development software, and are thoroughly optimised for power and torque across the rev range and designed to work perfectly with our camshafts, pistons and other components. With the introduction of the latest design, we have seen proven and repeated results on our in-house engine dyno - the current Crosthwaite & Gardiner range of Jaguar cylinder heads really are the ultimate, and will truly outperform all competitors.
Crosthwaite & Gardiner Wide Angle Cylinder Head Kits comprise of a cylinder head fitted with valve seats, valve guides and tappet guides along with everything to completely assemble it, from valves and camshafts to manifold gaskets. See right for full listing - head studs and gasket not included, please see pages 12 and 25 respectively.

C1884-EASM: LWE Wide Angle cylinder head kit
C1884-DASM: D Type 3.8-litre Wide Angle cylinder head kit
C1884-3.4ASM: D Type 3.4-litre Wide Angle cylinder head kit

**Jaguar XK Wide Angle Cylinder Head Kit**

C1884-EASM shown and described below:

- C1884: W/A Cylinder Head
- JAG195: Camshaft (x2)
- JAG184: Cam Bearings, set
- C2172-2: Cam Cap, wide (x2)
- C2172: Cam Cap, Narrow (x6)
- JAG213: Spring Retainer (x12)
- XK1935: Spring Seat (x12)
- JAG154: Valve Spring (x12)
- JAG192: Inlet Valve (x6)
- JAG193: Exhaust Valve (x6)
- JAG123: Split Collets, pair (x12)
- XK1403: Cam Follower (x12)
- JAG129: Tappet Shim (x12)
- JAG157: Head Nut (x14)
- JAG189: Head Nut Washer (x14)
- JAG281: Cam Cover Gasket (x2)
- JAG147: Inlet Gasket
- JAG148: Exhaust Gasket
- C9803: Cam Cover, Inlet Side
- C9804: Cam Cover, Exhaust Side
- JAG146: Breather Tube Set
- JAG330: Blanking Plate for Head
- JAGLWE-55-016: Gasket for Blanking Plate
- JAG168: Cam Cap Stud (x16)
- JAG169: Cam Cap Dowel (x16)
- 5/1.5CF: Manifold Stud (x32)
- 5/1.75CF: Head Mounting Stud (x4)
- 4/1.25CF: Cam Cover Stud (x4)
- 4/1CF: Cam Cover Stud (x2)
- B4/0.75C: Rear Cover Bolt (x4)
- NNY5/F: Cam Cap Nut (x16)
- N4-FH: Cam Cover Nut (x6)
- N5-FH: Cam Cover Nut (x16)
- 5-PW: Cam Cap Washer (x16)
- CWM8-16: Cam Cover Washer (x16)
- CW250-562: Cam Cover Washer (x6)

All parts available to order separately.
Jaguar XK Wide Angle Cylinder Head Components

**C1884-E** LWE Wide Angle Cylinder Head (shown)
**C1884-D** D Type 3.8-litre Wide Angle Cylinder Head
**C1884-3.4** D Type 3.4-litre Wide Angle Cylinder Head
All come fitted with valve seats, guides and tappet guides

**XK100-3**: W/A head, alloy block
**XK100-2**: N/A head, alloy block
**JAG336**: W/A head, iron block
**JAG395**: N/A head, iron block

**JAG146** Cam Cover Breather Tubes Set

**C9803** Cam Cover - inlet side

**C9804** Cam Cover - exhaust side

**JAG157** Cylinder Head Nut

**JAG189** Washer for Cylinder Head Nut

**JAGLWE-55-005** Hose Linking Cam Covers
Jaguar XK Wide Angle Cylinder Head Components

JAG184
Cam Bearings
For use in D-type and Road going E-type engines, the Cam profile is optimised for low end torque and driveability. Operating on a smaller base circle and with less aggressive ramps, the cam can easily be accommodated without cylinder head modification to bucket guides.

JAG195
High Lift Camshaft – Inlet or Exhaust
C&G's High lift race camshaft was carefully developed in house to offer exceptional mid-range torque without sacrificing top end power. With the increase in mid-range torque, the Cam creates an engine that's very driveable, with smooth power delivery exactly where you need it. As such, this Cam is equally suited to fast road engines as it is full on race engines.

JAG194
Cam Bearings
JAG213
Valve Spring Retainer
XK1935
Valve Spring Seat
<table>
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<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>JAG154</td>
<td>Valve Spring</td>
</tr>
<tr>
<td>JAG192</td>
<td>Inlet Valve</td>
</tr>
<tr>
<td>JAG193</td>
<td>Exhaust Valve</td>
</tr>
<tr>
<td>JAG123</td>
<td>Split Collets for Valves</td>
</tr>
<tr>
<td>XK1403-2</td>
<td>1 5/8&quot;, D Type</td>
</tr>
<tr>
<td>XK1403-4</td>
<td>44mm, LWE</td>
</tr>
<tr>
<td>JAG129</td>
<td>Tappet Shim</td>
</tr>
<tr>
<td>5/1.5CF</td>
<td>Manifold Stud</td>
</tr>
<tr>
<td>C19043</td>
<td>Cylinder Head Rear Blanking Plug</td>
</tr>
<tr>
<td>JAG330</td>
<td>Cylinder Head Blanking Plate</td>
</tr>
<tr>
<td>C2153-1</td>
<td>Rev Counter Drive for Cambox</td>
</tr>
<tr>
<td>C19044</td>
<td>Rev Counter Drive O Ring</td>
</tr>
<tr>
<td>C2428</td>
<td>Rev Counter Drive Oil Seal</td>
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</tbody>
</table>
Jaguar XK Carburation

Crosthwaite & Gardiner inlet manifolds are all produced using aluminium alloy castings from our carefully selected UK foundries. These fine castings are produced using period-correct sandcasting methods and are formed using only the finest aluminium alloys available. Using these castings, we CNC machine the flanges, threads and use our CNC porting techniques to ensure that they feature optimum flow characteristics.

LWE

D Type
Jaguar LWE Fuel Injection Carburation

LWE

C20189ASM
Fuel Injection Angle Drive Assembly
Jaguar XK Exhaust

LWE

JAG298
Exhaust Manifolds (sold as pair) for Wide Angle Head
FIA Appendix K approved - passes between engine and front subframe

D Type

JAGD-55-011
Exhaust Manifold for Wide Angle Head

JAG273
Exhaust Downpipe
Jaguar XK Engine Components

XKC1636D (dry sump)
XKC1636W (wet sump)
Alloy Cylinder Block
Crosthwaite & Gardiner aluminim alloy cylinder blocks are cast from the finest materials, at carefully selected UK foundries. Once cast, they are transported to Crosthwaite & Gardiner’s historic Sussex factory for machining, liner fitting, line-boring and honing. Our blocks come complete with liners and core plugs as well as studs, caps, washers and nuts for the main bearings. Unlike the original alloy blocks found in the Light Weight E Type, Crosthwaite & Gardiner blocks are compatible with wet sump lubrication, and weigh less than half the iron equivalent. Each one undergoes stringent inspection processes throughout its manufacture to ensure that the finished article is utterly perfect.

JAG255
Cylinder Liner for Aluminium Block

JAG327
Cylinder Liner for Iron Block

JAG295L (dry sump)
JAG295S (wet sump)
8 Weight Crankshaft
Crosthwaite & Gardiner designed crankshafts are suitable for both wet and dry sump engines. Machined from EN408 billet, hardened, tempered and finally nitried, they exhibit superior balance characteristics and strength over the standard item.
Jaguar XK Engine Components

Pistons
Crosthwaite & Gardiner lightweight pistons are designed in-house and optimised to work flawlessly with our cylinder heads, with which they achieve a compression ratio of either 10.7:1 or 10.1. Consulting with a championship winning F1 engine designer and using the latest CAD tools, C&G were able to refine the crown shape to reduce detonation and optimise the 'squish' region. These pistons are produced from our own forge tool by the UKs leading piston manufacturer, ensuring the highest possible quality is achieved.

JAGXK-55-005
84mm Piston with Rings & Pin (Standard Height)

JAGLWE-55-041
87mm Piston with Rings & Pin (Standard Height)

JAGLWE-55-026
88mm Piston with Rings & Pin (Short Compression Height)

JAGLWE-55-036
88mm Piston with Rings & Pin (Standard Height)

JAGXK-55-010
83mm Piston with Rings & Pin (Standard Height)

JAGLWE-55-397
84mm Piston with Rings & Pin (Standard Height)

JAGLWE-55-026-R
88mm Piston Ring Set

JAGLWE-55-041-R
87mm Piston Ring Set

Con-Rods
Crosthwaite & Gardiner designed connecting rods are of H-section format and crafted from the finest forged steel by the UKs leading manufacturer. Small ends are thoroughly optimised to our design and each rod comes complete with ARP fastening hardware. Additionally, we offer a 'long' rod, which can be used exclusively with piston number JAGLWE-55-026. By engineering the rod and piston as an exclusive pair, design improvements were made which improve cranktrain geometry and reduce acceleration loads, resulting in increased engine performance.

JAG141
Connecting Rod, long

JAG145
Connecting Rod, standard length

Bearing Shells
Crosthwaite & Gardiner offer a full selection of Jaguar shells and thrust washers, including oversize thrusts for worn cranks. Wide and narrow rear main bearings are also available. All C&G blocks and cranks are manufactured to accommodate the narrow shell, as per period Jaguar competition engines. The narrow shell allows the rear crank web to be strengthened, a known area of weakness.

JAG216
Main Bearings

JAG217
Big End Bearings

JAG218
Thrust Washers
Jaguar XK Engine Components

- JAG170L: Rattler Damper, dry sump
- JAG170S: Rattler Damper, wet sump
- C5896: (8 weight crank)
- C5896CG: (12 weight crank)
- Crank Damper Bolt
- C34064: Crankshaft Damper Distance Piece - Wet Sump
- C2305: Screwed Core Plug - Front, D Type
- C2157: Screwed Core Plug - Rear, D Type
- JAGLWE-55-055: Hydraulic Damper
### Jaguar XK Engine Timing Components

<table>
<thead>
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<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>JAG198-017</td>
<td>Timing Pointer, for use with rattler dampers</td>
</tr>
<tr>
<td>JAG198-106</td>
<td>Timing Chain for WA Head - 106 Link</td>
</tr>
<tr>
<td>JAG198-108</td>
<td>Timing Chain for WA Head - 108 Link</td>
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<tr>
<td>JAG199</td>
<td>Timing Chain - Bottom</td>
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<tr>
<td>C1032</td>
<td>Hydraulic Tensioner</td>
</tr>
<tr>
<td>C24686</td>
<td>Camshaft Sprocket</td>
</tr>
<tr>
<td>C25275</td>
<td>Idle Sprocket</td>
</tr>
<tr>
<td>C2170</td>
<td>Crankshaft Sprocket (wet sump)</td>
</tr>
<tr>
<td>C29330</td>
<td>Chain Guide (dry sump)</td>
</tr>
<tr>
<td>C29369</td>
<td>Timing Pointer</td>
</tr>
<tr>
<td>JAG198-106</td>
<td>Lock Tab for Timing Chain Guide</td>
</tr>
<tr>
<td>C8646</td>
<td>Distributor Drive Shaft</td>
</tr>
<tr>
<td>C8647</td>
<td>Distributor Drive Shaft Bush</td>
</tr>
<tr>
<td>C2152</td>
<td>Distributor Drive Gear</td>
</tr>
<tr>
<td>C2310</td>
<td>Camshaft Sprocket Retaining Screw</td>
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<tr>
<td>C25275</td>
<td>Idle Sprocket</td>
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<tr>
<td>C29369</td>
<td>Timing Pointer</td>
</tr>
<tr>
<td>UFN256-L</td>
<td>Half Nut for Distributor Drive Shaft</td>
</tr>
</tbody>
</table>
Jaguar XK Engine Timing Components

- **C2151**
  Tab Washer for Distributor Drive Shaft

- **C2393**
  Washer for Distributor Drive Shaft

- **C753**
  Key for Distributor Drive Shaft
Crosthwaite & Gardiner lightweight alloy water pumps feature several advantages over the period items. Not only is a great deal of weight saved with the use of alloy (original items were only available in iron), but the alloy material also provides much better corrosion resistance. Along with this benefit, Crosthwaite & Gardiner water pumps feature fully sealed bearings for much improved service life and longevity.
## Jaguar XK Water Pump & Drive

### D Type

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<tr>
<th>Part Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>JAG131</td>
<td>Water Pump Pulley</td>
</tr>
<tr>
<td>JAG325</td>
<td>Crank Pulley</td>
</tr>
<tr>
<td>JAG331</td>
<td>Water Pump Belt</td>
</tr>
<tr>
<td>JAG251</td>
<td>Flange for Water Pump Pulley</td>
</tr>
<tr>
<td>JAG124</td>
<td>Impellor for Water Pump</td>
</tr>
</tbody>
</table>
Jaguar XK Gaskets and Seals

JAG393-0.050
Head Gasket - Wide Angle head
Multi-layered steel head gasket produced by Cometic to C&G design

C36499
Rubber seal for rear of sump

C2303
Water Pump Gasket

JAG281
Cam Cover Gasket

JAG269
Oil Filter to Block Gasket

JAG262 (wet sump)
JAG158 (dry sump)
Front Main Oil Seal

JAG147
Inlet Gasket For Wide Angle Head

C19654
Rear Main Rope Seal

JAG363
Rear Lip Seal (for use with XK3620-L)

JAG148
Exhaust Gasket For Wide Angle Head

C16319 LWE/D dry sump
JAG247 wet sump
Sump Gasket

XK3662
Oil Pipe Flange Gasket, LWE dry sump
Jaguar LWE Dry Sump Kit

For alloy block with alloy sump: JAG317-AB
For alloy block with magnesium sump: JAG317-AB-M
For iron block with alloy sump: JAG317-I
For iron block with magnesium sump: JAG317-I-M

Jaguar LWE Dry Sump Kit comprises:

C1342-A Sump - aluminium (magnesium optional - C1342-M)
XK3631 Front Timing Cover
XK3652-L Gear - oil pump
XK3718 Drive Shaft - oil pump
XK3617ASM Scavenge Pump - rear
XK3920ASM Oil Pump - front
XK3620-R Housing - rear rope oil seal
XK3620-L Housing - rear lip oil seal (optional)
XK3662 Gasket - oil pipe flange
JAG275 O Ring - oil pump
JAG338 Scavenge Pipe - front
JAG339 Scavenge Pipe - rear
JAG340 Scavenge Pipe - side
JAG322 Breather
JAG248 Boss - dry sump external pipe
JAG248A Outlet Boss - dry sump external pipe
JAG253ABDS Oil Delivery Pipe - alloy block
JAG321 Oil Pipe- inlet
JAG242 Inspection Plug
JAG237 Sump Drain Plug
JAG247 Sump Gasket - pair
CH5/1.25C Caphead
CH5/0.75C Caphead
5/1.5CF Stud
0460-16x22 Copper Washer - sump plug
0460-42x49 Copper Washer - sump inspection
Jaguar LWE Dry Sump Kit

Crosthwaite & Gardiner LWE Dry Sump Kits are manufactured using the original factory drawings, feature all new components and comprise of one pressure and two scavenge pumps. The improved flow and higher delivery pressure over the standard wet sump system results in enhanced reliability and longer engine life, particularly under race conditions.

All parts available to order separately
**Jaguar XK Engine - Oil System**

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XK3620-RSW (wet sump)</td>
<td>Rear Oil Seal Housing - Lip Seal</td>
</tr>
<tr>
<td>XK3620-RSD (dry sump)</td>
<td>Rear Oil Seal Housing - Rope Seal</td>
</tr>
<tr>
<td>JAG361</td>
<td>Oil Pressure Take Off Union</td>
</tr>
<tr>
<td>JAG149S</td>
<td>Oil Filter Base - spin-on filter. Use OC275 filter</td>
</tr>
<tr>
<td>JAG149A</td>
<td>Oil Filter Base - canister filter. Use JAG376 filter</td>
</tr>
<tr>
<td>JAG386</td>
<td>Oil Filter Head for Oil Cooler. Use JAG140 filter</td>
</tr>
<tr>
<td>OC275</td>
<td>Oil Filter, spin-on type</td>
</tr>
<tr>
<td>JAG376</td>
<td>Oil filter Bowl Assembly</td>
</tr>
<tr>
<td>JAG140</td>
<td>Oil Filter, spin-on type</td>
</tr>
<tr>
<td>C2352</td>
<td>Side Oil Gallery Plug</td>
</tr>
<tr>
<td>C15867</td>
<td>Oil Filter Flange Core Plug</td>
</tr>
<tr>
<td>C15867</td>
<td>Oil Filter Flange Core Plug</td>
</tr>
<tr>
<td>JAG173</td>
<td>Dome Nut - oil feed</td>
</tr>
<tr>
<td>JAG254(KIT) - alloy block</td>
<td>Braided Cam Oil Feed Pipe Kit</td>
</tr>
<tr>
<td>JAG349(KIT) - iron block</td>
<td>Braided Cam Oil Feed Pipe Kit</td>
</tr>
<tr>
<td>JAG361</td>
<td>Oil Pressure Take Off Union</td>
</tr>
<tr>
<td>C5846L</td>
<td>Banjo Bolt, Oil Feed to Head</td>
</tr>
<tr>
<td>JAG178</td>
<td>Oil Feed Banjo Stud</td>
</tr>
</tbody>
</table>

**IMPORTANT**

- Use JAG376 filter for the JAG149A oil filter base when using a canister filter.
- Use OC275 filter for the JAG149S oil filter base when using a spin-on filter.

**Contact Information**

- +44 (0) 1 925 732 240
- www.crosthwaiteandgardiner.com
- info@crosthwaiteandgardiner.com
Jaguar LWE Specific Oil System

Wet Sump

Crosthwaite & Gardiner prides itself on the ability to offer an authentic reproduction of the original Jaguar E Type sump. Produced in cast aluminium which is machined to stringent tolerances and thoroughly inspected throughout the production process.

C24457
Sump Pan

JAG358
Sump Baffle

C23435
Sump Drain Plug

C16752
Sump Oil Strainer

link pipe form filter

JAG253ABWS
Oil Delivery Pipe

JAG-55-395
Dipstick for Oil
Jaguar LWE Specific Oil System

Dry Sump
Jaguar D Type Specific Oil System

- **C9209** Sump, Main Part
- **C9660** Sump Pan
- **JAGASM118** Pressure Pump
- **JAGASM117** Scavenge Pump
- **C9189-BD** Front Main Bearing Cap - Big Dowel
- **JAGASM102** Cross Shaft Gear Assembly
- **C9237** Cross Shaft
- **C9238** Drive Gear with Square Hole
- **C9235** Cross Shaft Gear, Bronze
- **C9740** Breather Body and Tube
- **JAG111** Oil Connector Block
- **C9660** Sump Pan
- **JAG294** D Type Complete Dry Sump Kit
  
  All parts above (either small or big dowel Front Main Bearing Cap) supplied with all necessary studs, bolts and gaskets

Gaskets for Jaguar D Type Dry Sump Kit

- **JAG100**: Sump to pan
- **JAG103**: Scavenge pump to sump, outer (shown)
- **JAG103-1**: Scavenge pump to sump, inner
- **JAG104**: Pressure pump to sump, outer
- **JAG104-1**: Pressure pump to sump, inner
- **JAG105**: Breather to sump
- **C16319**: Sump to block
Manufacturing and building distributors is not for the light-hearted: it takes a great deal of expertise. When Crosthwaite & Gardiner decided to involve itself in the manufacture of recreated Lucas 23D distributors, they had to be perfect; the Crosthwaite & Gardiner design comprises of needle roller lower bearings and ballrace upper bearings for highly accurate spindle location and long life. A high quality externally-mounted condenser gives greater reliability, while double points springs safeguard against bounce at high engine speeds.

Jaguar XK Electrical Components

LUC-90-032 Distributor Cap
LUC-90-041 Points Set
DRB106C Rotor Arm
LUC-90-027 Condenser

DLB105 Lucas Sports Coil
JAG320 Plug Lead Set
B7ECS Spark Plug
The contemporary alternator makes for a practical, reliable enhancement to a classic Jaguar whether for racing for or the road. For those wanting to keep the original look, we also produce Dynator kits - internally these are the very same as an alternator but with the classic appearance of a dynamo, perfect for keeping a period look.
Jaguar LWE Transmission

**JAG171**
Lightweight Steel Flywheel - to suit 7.25” clutch

**JAG391**
7.25” Triple Plate Clutch

**JAGLWE-55-031**
Flywheel 9” single plate clutch

**JAG252**
Magnesium Bell Housing

**JAG350**
Release Bearing

**C4810**
Flywheel Locking Plate

**C4855**
Flywheel Retaining Screw

**C2313**
Flywheel Dowel
Jaguar LWE Transmission

C20019
Magnesium Gearbox Casing

JAG350
Release Bearing

C4810
Flywheel Locking Plate

C4855
Flywheel Retaining Screw

C2313
Flywheel Dowel
Jaguar LWE Differential

Jaguar LWE differential case and cover cast in magnesium, weighing approximately 6.5kg - this is for serious racers.

Our aluminium case and cover assembly weighs 11kg and is better suited to road use.

Lightweight but heavy duty limited slip differential produced by Gripper with 40/65 ramp angles as standard. Customer-specified ramp angles can also be catered for. Please note that some final drive ratios require a different carrier to be fitted to the differential.

C20480
Rear Trunnion Bracket
Jaguar D Type Clutch & Flywheel

LMS030AX
Jaguar D Type Axial Starter Motor
Jaguar D Type Gearbox

- **JAG370**
Plessey Pump Gear

- **C131**
Locating Screw and Washer for Clutch Shaft

- **C359**
Setscrew and Washer for Front Cover

- **C568**
Taper Bolt for Clutch Fork and Lever

- **C584**
Bronze Bush for Clutch Shaft

- **C777**
Fulcrum Pin Nut with Washer & Splitpin

- **C799**
Gearbox Drain Plug

- **C840**
Nut and Pin for Mainshaft

- **C845**
Spring for Detent Plunger

- **C848**
Detent Plunger - 3rd, 4th and reverse

- **C857**
Locking Plate Lay and Reverse Shafts

- **C859**
Oil Seal for Mainshaft, Rear

- **C866**
Reverse Slipper with Washer and Pin

- **C874**
Roller for Interlock

- **C900**
Springs for 3rd and 4th Synchro Balls and Reverse Plunger Pin

- **C905**
Change Speed Selector for 3rd and 4th
# Jaguar D Type Gearbox

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C910</td>
<td>Speedo Driving Gear</td>
</tr>
<tr>
<td>C918</td>
<td>Needle Roller for Layshaft and 1st &amp; 2nd mainshaft gear</td>
</tr>
<tr>
<td>C922</td>
<td>Balls for 3rd &amp; 4th Synchro and Reverse Plunger</td>
</tr>
<tr>
<td>C923</td>
<td>Balls for Interlock</td>
</tr>
<tr>
<td>C924</td>
<td>Ballrace for Tail Cover</td>
</tr>
<tr>
<td>C925</td>
<td>Washer</td>
</tr>
<tr>
<td>C927</td>
<td>Interlock Plug</td>
</tr>
<tr>
<td>C1838</td>
<td>Ballrace for Input Shaft</td>
</tr>
<tr>
<td>C1841</td>
<td>Ballrace Outer Spacer</td>
</tr>
<tr>
<td>C1850</td>
<td>Needle Roller, 3rd Gear</td>
</tr>
<tr>
<td>C1859</td>
<td>Outer Front Thrust Washer Layshaft with Peg</td>
</tr>
<tr>
<td>C1864</td>
<td>Spacer for Layshaft Needles, rear</td>
</tr>
<tr>
<td>C1894</td>
<td>Thrust Washer for Pivot Jaw</td>
</tr>
<tr>
<td>C1899</td>
<td>Fulcrum Pin Reverse Gear Operating Lever</td>
</tr>
<tr>
<td>C1905</td>
<td>Pivot Jaw Spring Washer</td>
</tr>
<tr>
<td>C1908</td>
<td>Thrust Washer for Selector Lever</td>
</tr>
</tbody>
</table>
Jaguar D Type Gearbox

- **C1909** Reverse Plunger Pin and Split Pin
- **C1910** Change Speed Selector for Reverse
- **C1912** Pivot Pin with Nut and Split Pin
- **C1914** Pivot Jaw Lockwasher
- **C1929** Pivot Jaw Spring Washer
- **C2043** Spacer for Layshaft Needles, Front
- **C2066** Locknut for Input Shaft
- **C2067** Circlip for Input Shaft Locknut
- **C2121** Oil Thrower for Input Shaft
- **C3261** Clutch Operating Lever
- **C3383** Reverse Gear Bush
- **C4049** Operating Sleeve, 3rd & 4th
- **C4120** Top Speed Driving Member
- **C4122** Synchro Sleeve 3rd & 4th
- **C6661** U Joint Flange for Mainshaft
- **C6738** Oil Seal for Input Shaft

Oil Seal for Input Shaft
Jaguar D Type Gearbox

- C7166 Breather Elbow and Lockout
- C7309 Bolt for Lid
- C7310 Bolt for Lid
- C10753 Lid for Gearbox

- C8835 Thrust Washer for Front Layshaft
- C9431 Input Shaft
- C9432 Spigot Bearing for Input Shaft
- C9433 Mainshaft

- C9435 Mainshaft Roller Bearing
- C9436 Thrust Washer for Mainshaft
- C9438 Mainshaft Third Gear
- C9439 Mainshaft Third Gear Driving Member

- C9440 Mainshaft Second Gear
- C9441 Mainshaft First Gear
- C9442 Mainshaft First & Second Driving Centre Hub
- C9443 Mainshaft First & Second Bronze Synchro Sleeve
# Jaguar D Type Gearbox

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C9444</td>
<td>Mainshaft First &amp; Second Operating Sleeve Inner</td>
</tr>
<tr>
<td>C9445</td>
<td>Operating Sleeve Outer, First &amp; Second</td>
</tr>
<tr>
<td>C9446</td>
<td>Operating Sleeve Pins, First &amp; Second</td>
</tr>
<tr>
<td>C9447</td>
<td>Snap Ring, First and Second Synchro</td>
</tr>
<tr>
<td>C9448</td>
<td>Mainshaft Reverse Gear</td>
</tr>
<tr>
<td>C9449</td>
<td>Pick Up Ring for Oil</td>
</tr>
<tr>
<td>C9450</td>
<td>Cam for Oil Pump</td>
</tr>
<tr>
<td>C9451</td>
<td>Driving Gear for Brake Pump</td>
</tr>
<tr>
<td>C9454</td>
<td>Oil Supply Ring</td>
</tr>
<tr>
<td>C9455</td>
<td>Layshaft incorporating First &amp; Reverse Gears</td>
</tr>
<tr>
<td>C9456</td>
<td>Fourth Gear for Layshaft</td>
</tr>
<tr>
<td>C9457</td>
<td>Third Gear for Layshaft</td>
</tr>
<tr>
<td>C9458</td>
<td>Second gear for layshaft</td>
</tr>
<tr>
<td>C9460</td>
<td>Thrust Washer for Rear of Layshaft</td>
</tr>
<tr>
<td>C9463</td>
<td>Layshaft Spindle</td>
</tr>
<tr>
<td>C9464</td>
<td>Spindle for Reverse Gear</td>
</tr>
</tbody>
</table>
Jaguar D Type Gearbox

C9465  Reverse Gear

C9467  Reverse Gear Operating Lever

C9468  Tail Cover for Gearbox

C9471  Brake Pump Driven Gear

C9472  Bush for Brake Pump Driven Gear

C9474  Adaptor Plate for Brake Pump

C9475  Oil Seal for Pump Gear

C9476  Stud for Brake Pump

C9480  Pump Plunger Assembly
  C9485: Spring (external)
  C9479: Body
  C9487: Spring (internal)
  C9819: Ball

C9488  Blanking Plug for Oil Cap

C9492  Striking Rod, First & Second

C9494  Selector Fork, First & Second

C9495  Selector Fork, Reverse

C9496  Spring for Reverse Plunger

C9498  Gear Lever Knob
### Jaguar D Type Gearbox

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C9499</td>
<td>Gear Lever Pivot Jaw</td>
</tr>
<tr>
<td>C9712</td>
<td>Inner Rear Thrust</td>
</tr>
<tr>
<td>C9915</td>
<td>Front Plug for Mainshaft</td>
</tr>
<tr>
<td>C9924</td>
<td>Cap Screw for Gearbox Extension</td>
</tr>
<tr>
<td>C9925</td>
<td>Stud for mounting Tail Cover</td>
</tr>
<tr>
<td>C10030</td>
<td>Rear Plug for Mainshaft</td>
</tr>
<tr>
<td>C10048</td>
<td>Thrust Washer for Mainshaft Spigot</td>
</tr>
<tr>
<td>C10725</td>
<td>Spacer for Layshaft between Third &amp; Fourth</td>
</tr>
<tr>
<td>C10726</td>
<td>Spacer Adjuster for Layshaft</td>
</tr>
<tr>
<td>C10727</td>
<td>Circlip for Layshaft Spacer &amp; Adjuster</td>
</tr>
<tr>
<td>C10729</td>
<td>Interlock Plunger for First and Second Synchro</td>
</tr>
<tr>
<td>C10749</td>
<td>Selector Fork, Third &amp; Fourth</td>
</tr>
<tr>
<td>C10750</td>
<td>Bush for Speedo Driven Gear</td>
</tr>
<tr>
<td>C10751</td>
<td>Driven Gear for Speedo</td>
</tr>
<tr>
<td>C10917</td>
<td>Spacer for Mainshaft</td>
</tr>
</tbody>
</table>
Jaguar D Type Gearbox

- C10918 Retaining Ring for Roller Bearing
- C10972 Split Ring for Layshaft Fourth Gear
- C11053 Spring for First & Second Interlock Plunger
- C11614 Interlock Pivot Pin & Nut
- C11617 Plug & Nut for Outer Detent Spring
- C11618 Interlock Detent Plunger, First & Second
- C11619 Interlock Base Plate
- C11620 Interlock Operating Lever
- C11621 Interlock Retaining Plate
- C11631 Coverplate for Selector Shafts
- C11643 Stud for mounting Tail Cover
- CS125 Blanking Screw & Washer for Layshaft
- FB504 Selector Plate Screw
- FS205 Locking Plate Screw
- NB519 Selector Plate Screw
- JAG396 Plessey Pump
Jaguar D Type Gearbox

C11680
Stop Pin

C12434
Plug for Gearbox Extension
Chassis

JAGLWE-95-001L (left hand)
JAGLWE-95-001R (right hand)
LWE Wheel Spinner

JAGD-95-001
Dunlop Wheel