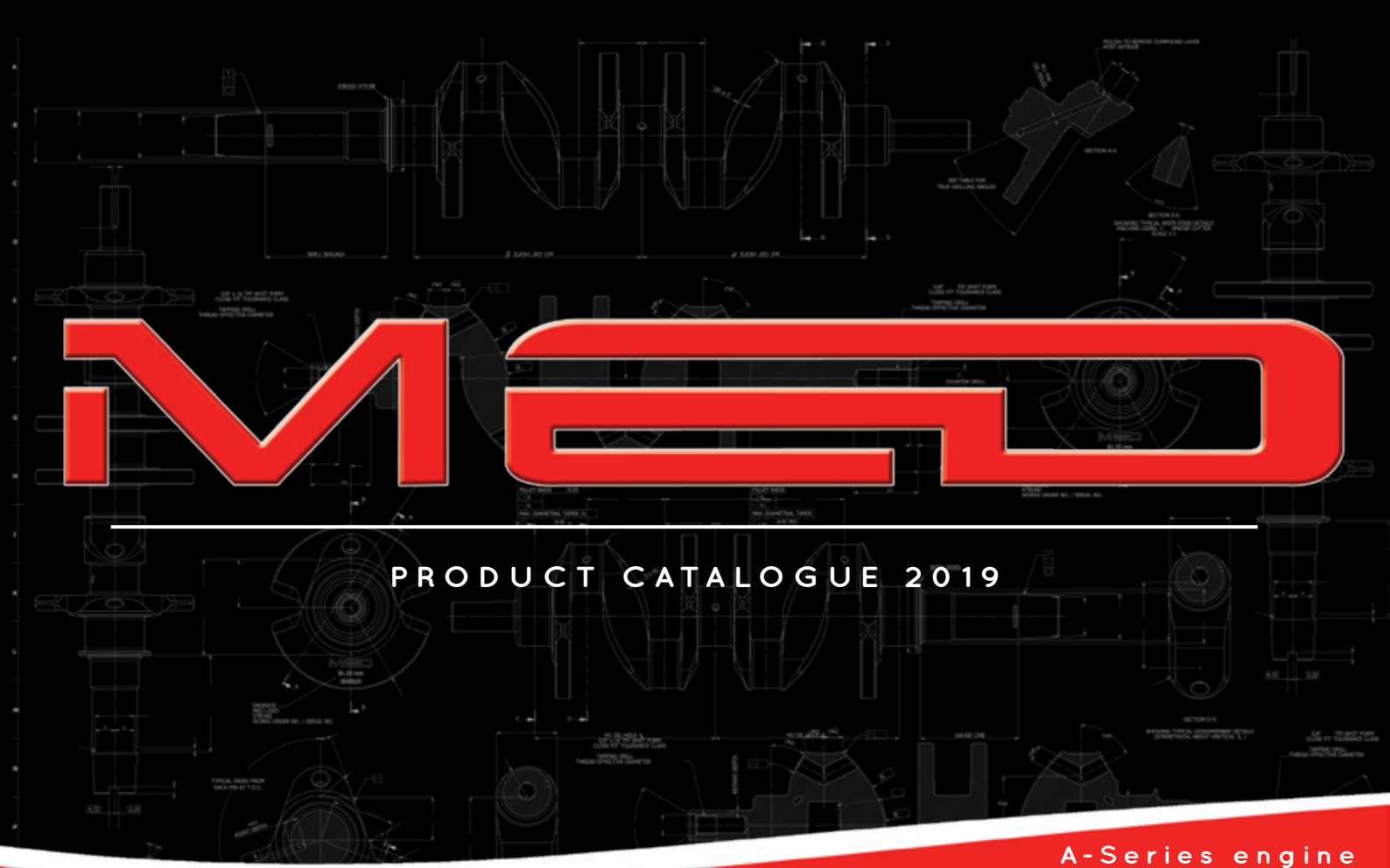


MED

PRODUCT CATALOGUE 2019

A-Series engine
specialist since 1981

WWW.MED-ENGINEERING.CO.UK

Mini Se7en racer Joe Thompson with MED power.

Welcome to the 2019 MED parts catalogue, a collection of our world-famous A-Series tuning components and racing accessories. Our goal is simple – to provide the highest quality products and keep you ahead of the competition for many years to come.

MED has specialised in A-Series engines since 1981 and in that time we've outgrown two workshops, developed hundreds of new products and helped our customers to win countless races and championship titles. We're based in Hinckley, Leicestershire, within easy reach of Mallory Park, Donington Park and Silverstone. From our modern workshop we assemble the finest A-Series competition engines in the world, design innovative new products and dispatch performance parts to all continents.

We take great pride in our products and the vast majority are manufactured locally or in-house. As a result you can be assured of the finest quality components available. We only sell parts that we would install on our own competition cars.

If you have any questions regarding high performance A-Series engines or any of our products, we have an experience sales team on hand ready to help. Please visit us online for the most up-to-date range and pricing.

ENGINE COMPONENTS

CYLINDER HEAD

TRANSMISSION

CLUTCH ASSEMBLY

ENGINE ANCILLARIES

RACING COMPONENTS

MED keeps the largest range of forged Omega A-Series pistons on the market, from 998 +20 to 73.5mm, to suit all popular configurations. We stock spare ring sets, as well as short compression height pistons to cater for different conrod and crankshaft stroke lengths.

Forged pistons are stronger yet lighter than our diecast range, making them particularly well suited to competition applications. All but the 18cc forced-induction pistons utilise a smaller, lighter 18mm gudgeon pin. Converting to fully-floating pins gives less chance of damaging the pistons on insertion and makes them easier to disassemble, therefore it's the favourite method for competition engines.

The production of piston forgings is more complex than the casting process. Material is bought in at closely controlled diameters, which is then cut to billet size and all cut faces machined to a smooth finish. The billet is pre-heated in an air-circulating furnace to a temperature quite close to the operating temperature of the piston crown when the engine is operating at full power.

This, together with a tightly controlled speed of the forging process, gives a dense and very fine grain structure to the forging. This structure gives the forgings higher strength and fatigue life. After forging, any excess material is removed and the forgings are then heat-treated, followed by wet blast cleaning.

Engine	Bore size	Crown type	Pin size	Compression Height
998	+20	Flat top	5/8"	1.338"
998	+40	Flat top	5/8"	1.338"
1275	+20	Flat, 6cc dish	18mm	1.498"
1275	+20	Flat, 6cc dish	18mm	1.248"
1275	+20	18cc dish	13/16"	1.498"
1275	+40	Flat, 6cc dish	18mm	1.498"
1275	+40	Flat, 6cc dish	18mm	1.248"

Engine	Bore size	Crown type	Pin size	Compression Height
1275	+40	18cc dish	13/16"	1.498"
1275	+60	Flat, 6cc dish	18mm	1.498"
1275	+60	Flat, 6cc dish	18mm	1.248"
1275	73.5mm	Flat, 7cc dish	18mm	1.498"
1275	73.5mm	7cc dish	18mm	1.426"
1275	73.5mm	Flat, 7cc dish	18mm	1.248"
1275	73.5mm	7cc dish	18mm	1.115"

DIECAST OMEGA PISTONS

Omega diecast pistons have been used successfully for decades in all manner of A-Series engines, from high performance road cars to competition vehicles. Do not confuse these pistons for standard factory-spec cast items - they are a very high quality piston.

Our range of diecast Omega pistons for the 1275 engine are all designed for use with standard conrods and are supplied with press-fit gudgeon pins. Alternatively, we can supply shorter length pins and circlips if you wish to re-size and bush your conrod little ends. This will enable a conversion to a fully-floating setup, which is preferred by some engine builders.

The range includes standard diameter, standard compression height pistons in +20, +40, +60 and 73.5mm sizes. We can also supply short compression height varieties to suit alternative crankshaft stroke lengths or longer conrods. To perfect your compression ratio, most piston sizes can be supplied in flat top, small dish or medium dish configuration, as seen in the table over the page.

As a general rule, opt for forged pistons if you wish to exceed a compression ratio of 11:1, have a high performance competition engine or wish to run high boost levels on a forced-induction setup. For all other purposes, diecast pistons are the perfect choice.

Engine	Bore size	Crown type	Compression Height
1275	Standard	6.5cc	1.498"
1275	+20	Flat top	1.498"
1275	+20	6.5cc dish	1.498"
1275	+20	10cc dish	1.498"
1275	+40	Flat top	1.498"
1275	+40	6.5cc dish	1.498"
1275	+40	10cc dish	1.498"
1275	+60	Flat top	1.498"
1275	+60	6.5cc dish	1.498"
1275	73.5mm	Flat top	1.498"
1275	73.5mm	7cc dish	1.498"
1275	73.5mm	11cc dish	1.498"
1275	73.5mm	7cc dish	1.426"
1275	73.5mm	11cc dish	1.426"

When a steel billet crankshaft is not required, we can regrind, balance and heat treat your standard crankshaft.

This can be particularly cost-effective for standard rebuilds, or when competition regulations stipulate a standard reconditioned crankshaft only. Using our modern aerospace-grade balancing machine, we can spend time to achieve a far more accurate balance than would have been performed by the factory. The result is a smoother running engine and improved bearing life. Crankshafts are reconditioned to order, on an exchange basis, although we occasionally keep 1275 A-plus types on the shelf.

Alternatively, we can modify standard crankshafts for higher performance applications. The process is similar to our reconditioned crankshafts, with additional machining for improved counterbalance and reduced weight.

The big end journals are cross-drilled for improved bearing lubrication, followed by precise machining of the webs, wedging and a final balance. These crankshafts are suitable for high performance road and trackday builds, but have also been used in mild competition engines.

The MED steel crankshaft is CNC machined from EN40B billet and nitride hardened, with extra large C-shape counterbalance webs to reduce potentially damaging harmonics.

There's an extra long keyway for a more positive crankshaft pulley location, while Cooper S size big end journals with counter-bored webs reduce weight and further enhance the counterbalance effect. Whilst standard crankshafts can be effectively re-worked to improve their counterbalance effect, it is not possible to add material, only subtract.

An improved counterbalance effect helps to reduce the 'whip' often encountered with the three main bearing A-Series crankshaft, to improve longevity and performance at higher RPM levels. In addition, all MED EN40B crankshafts are manufactured locally to us by Arrow Precision - a world leader in crankshaft design and innovation - to ensure the highest quality imaginable for your competition engine build.

We can supply both standard 81.33mm stroke length or 86mm for Mini and inline engines. The Mini crankshaft is available with and without the primary gear C-clip groove, depending on your personal preference. Crankshafts can be supplied individually or as part of a complete engine package, to include all bearings, MED conrods and forged lightweight pistons. Join hundreds of satisfied customers who have achieved countless race, rally and hillclimb wins with MED crankshafts.

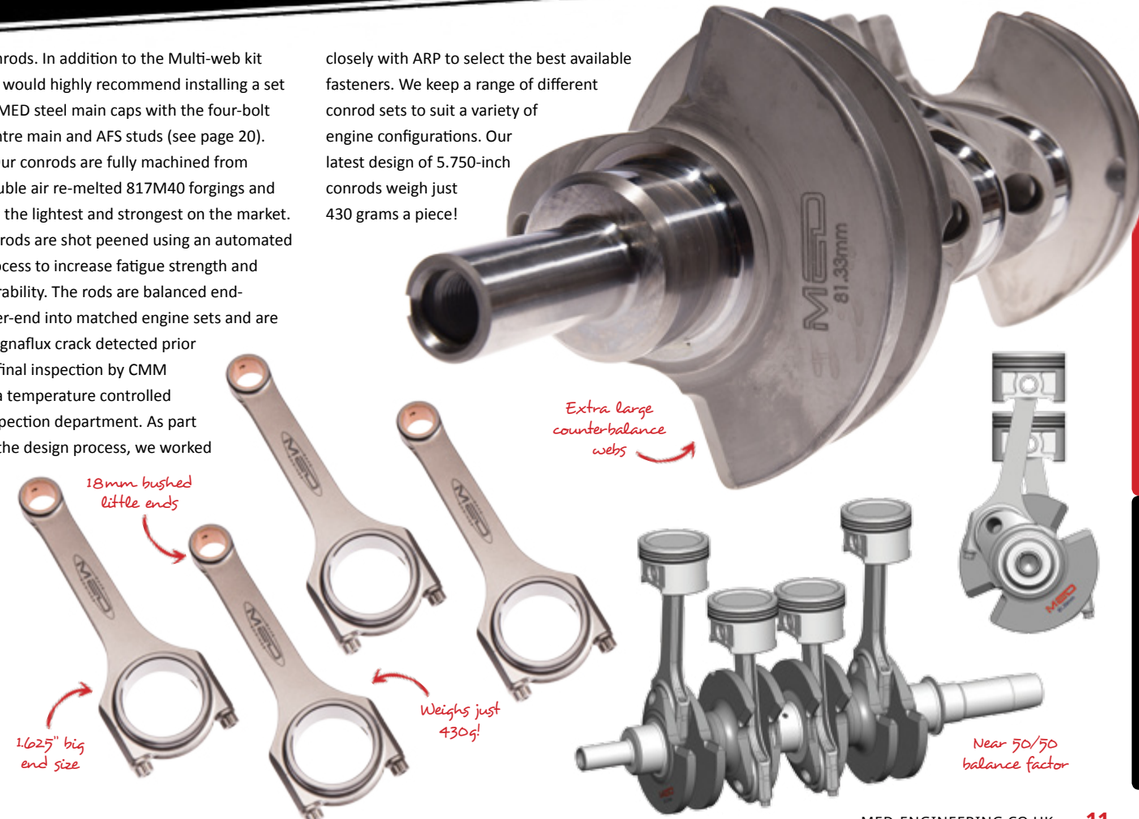
The MED Multi-web crankshaft features an almost perfect 50/50 balance factor, which in conjunction with the new six-inch non-offset conrod, eliminates rotational twisting and piston side loadings normally associated with the standard A-Series configuration. After many years of design and testing with Arrow Precision we have developed the ultimate crankshaft and conrod package for the A-Series engine.

The MED Multi-web crankshaft kit will allow the engine to achieve a higher rpm and in turn maintain a higher bhp for longer. The crankshaft features eight full counterbalance webs with two extra 'ghost' main bearings, with special narrow width, large diameter big end journals. This offsets the inherant 'whip' issues of running a three-main-bearing crankshaft.

To reduce weight around the big ends, the journals are hollow drilled, while the webs are knife-edged for improved performance. There's an extra long square section key way with the C-clip groove deleted for extra nose rigidity on the Mini version. In place of the C-Clip we supply a bronze spacer bush, which will need to be machined down to suit the engine.

We keep both Mini and inline-fitment crankshafts, for 1275 Midget/Sprite engines. The Multi-web is only available as part of an engine kit, because unlike our regular steel billet crankshaft, it uses a unique big end journal size that will not suit regular steel conrods. In addition to the Multi-web kit we would highly recommend installing a set of MED steel main caps with the four-bolt centre main and AFS studs (see page 20).

Our conrods are fully machined from double air re-melted 817M40 forgings and are the lightest and strongest on the market. All rods are shot peened using an automated process to increase fatigue strength and durability. The rods are balanced end-over-end into matched engine sets and are magnaflux crack detected prior to final inspection by CMM in a temperature controlled inspection department. As part of the design process, we worked closely with ARP to select the best available fasteners. We keep a range of different conrod sets to suit a variety of engine configurations. Our latest design of 5.750-inch conrods weigh just 430 grams a piece!



Cam kit	Cam	Oil pump	Road followers	Race followers	Road springs	Race springs	Timing disc	Duplex vernier	Cam lock tab	1.3 roller rockers	1.5 roller rockers
ST1	HT, RS, XT	•	•		•		•	•	•		
ST2	HT, RS, XT	•	•		•		•	•	•		
ST3	HT, RS, XT	•	•		•		•	•	•		•
ST3	HT, RS, XT	•	•		•		•	•	•	•	
ST4	Race profiles	•		•		•	•	Aluminium	•		LDX race

MED road-spec camshafts are machined from cross-drilled steel blanks, never re-profiled, so you can be assured of the highest quality product. Our three profiles have been developed specifically for road use with over 35 years of A-Series experience.

The HT, or 'high torque', gives a power band between 1000-6000rpm and is particularly well suited to mildly-tuned engines. RS, for 'road sport', is just that – a sportier profile for spirited weekend drives. The optimum power band is approximately 1250-6500rpm. From here we have the trackday-focused XT camshaft, with a power band between 2500-7500rpm. All have been designed to work best with MED 1.5:1 ratio roller-tip rockers, however they can also work effectively with MED 1.3:1 rockers and standard types.

To help your selections, we have devised three stages of camshaft kits, packaged to save costs on the individual items. So if you're embarking upon a simple cam upgrade or a complete engine overhaul, there's a kit to suit.

Stages 1 to 3 utilise our popular road profiles, whereas Stage 4 includes a choice of Piper race cam (see over the page) and our ultimate race LDX roller-tip rockers. All MED camshaft kits are intended for 1275-based engines only.

In addition to our range of road camshafts, we stock eight different competition profiles. These are machined on a CNC Landis machine at Piper Cams to create the finest precision-made race camshafts available for the A-Series engine.

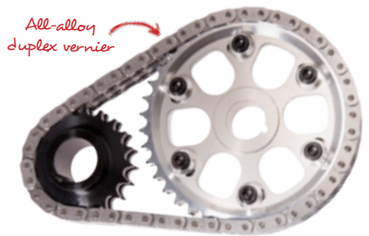
The 310SP has proved itself a strong performer in circuit racing, while the 320SP is a little more aggressive overall. The FIA15 has been developed specifically for historic race use with twin 1.5-inch SU carburettors, with the FIA15+ better suited to those with larger SUs or a twin-choke Weber. Finally the STR930, a tried-and-tested profile that's been race proven for many years in the Mini Miglia championship.

The final three cams in our line-up are specifically aimed at Arden eight-port engines, with transposed lobes to suit the alternative valve positioning. The 300-8 has achieved good success within rally engines, the 310-8 is geared towards race and trackday builds, whereas the 320-8 is aimed at full race engines. Running on fuel injection on these engines will allow the use of a more aggressive camshaft for the given application than with twin Webers.

Camshaft	Usage	Inlet duration	Exhaust duration	Maximum lift
HT	Road	256	256	0.358"
RS	Road	264	264	0.383"
XT	Trackday	280	280	0.401"
310SP	Race	318	318	0.421"
320SP	Race	320	320	0.494"
FIA15	Race	296	296	0.492"
FIA15+	Race	296	312	0.407"
STR930	Race	300	300	0.419"
300-8	8-port	300	300	0.478"
310-8	8-port	312	312	0.495"
320-8	8-port	320	320	0.494"

Accurately setting the camshaft timing is essential to achieve optimum performance from your engine, and we have a range of adjustable vernier timing kits to do just that.

The steel/alloy duplex vernier is a lightweight timing setup with steel outer teeth on the cam sprocket for good longevity on higher mileage road cars. The all-alloy version swaps those steel teeth for 7075 grade aluminium, for a further weight saving without sacrificing a great deal of strength.



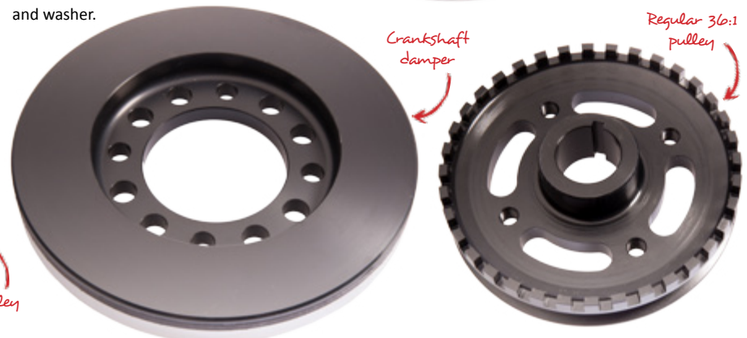
For all-out competition usage we produce a super lightweight adjustable simplex setup, using a high quality Iwis chain as with all our kits.

The latest addition is the MED cam belt conversion, a design that aims to dampen out potentially damaging harmonics from the valve train. The CNC-machined aluminium casing has a split cover to adjust cam timing in situ. We also keep a wide range of replacement parts for all kits, including Iwis chains and Gates timing belts.

The MED large crankshaft damper is a must for any performance A-Series engine, helping to reduce damaging harmonics from the rotating assembly and prolong bearing life.

The centre boss is machined from lightweight aluminium, holes drilled for weight saving, then anodised black. The damper ring to the rear is machined from high-grade steel and bonded to the central boss using natural rubber.

The damper ring will require an additional v-belt pulley of your choice to mount to the crankshaft and drive the water pump and alternator. We keep a regular pulley and two with 36 in-built trigger teeth for a crank position sensor. The larger style (bottom left) is designed for use with a twin-cam engine or when fitted with a cam belt conversion, the smaller style will suit all others. We would recommend opting for a complete balanced damper kit, as it comes with everything you require, even the bolt and washer.

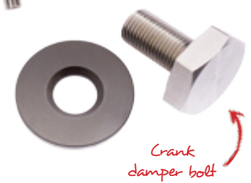


High quality bearings are an essential part of any engine rebuild, from standard to full race.

We always keep a large selection of ACL and Mahle Motorsport bearings in stock for all A-Series engines, small bore, large bore and A-plus. These are used in all MED competition engines, so you can be assured of a long-lasting bearing regardless of the application.

To cater for re-ground crankshafts, main and big end bearings are available in sizes up to +0.030-inch. Thrust washers range from standard to +0.030-inch too.

Type	Engine	Standard	+0.003"	+0.010"	+0.020"	+0.030
Cam bearings	998	•				
	1275	•				
Main bearings	998	•		•	•	•
	998 A-plus	•		•	•	•
	1275	•		•	•	•
	1275 A-plus	•		•	•	•
Big end bearings	998	•		•	•	•
	1275	•		•	•	•
	Cooper S	•		•	•	•
Thrust washers	998	•	•			
	1275	•	•			•

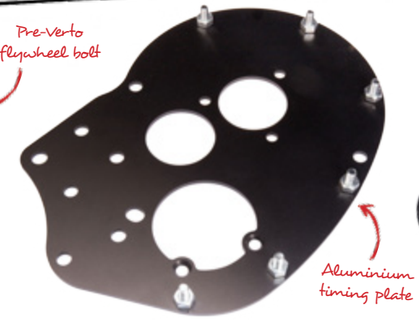


We keep a full range of genuine ARP fixing kits for the A-Series, alongside a wide selection of our own heavy-duty fixings and engine block upgrades. These come highly recommended for any performance rebuild.

ARP head stud kits are available to suit both standard nine and 11-stud heads, and as seen above, also include the rocker post studs, multipoint nuts and washers. We would also recommend upgrading the standard conrod fixings to genuine ARP types, which are in stock for 998, Cooper S, A-plus and our own steel conrods. ARP bolts are made from a superior grade of steel with a higher tensile strength and greater resistance to stretch.

MED crankshaft bolts are machined from EN24T steel for both the flywheel and damper end of the crank. The standard damper bolt has a particularly short thread, so ours is longer for better retention of the pulley and therefore less chance of damaging the crankshaft tail. Both bolts are expertly heat treated, with a matching EN24T washer for an excellent upgrade over stock.

For worn-out blocks or high-end competition builds, we offer high quality spun GG30 cast iron cylinder liners. After professional installation, these can be re-bored to a maximum of +0.060-inch, providing a more consistent bore wall material for the pistons to run within.



Replacement MED steel main caps and studs are the ultimate block upgrade when building a competition engine with a billet steel crankshaft. The EN8 steel caps replace the standard-fitment caps, with an extra two stud holes on the wider centre main.

The three main bearing design of the A-Series crankshaft does not lend itself particularly well to high rpm, therefore we upgrade the bearing caps for increased stiffness and support. The four-bolt main cap is available on its own or as part of a full set, for all 1275 engine blocks. The Cooper S had improved main caps from the factory, so we do not currently re-produce these.

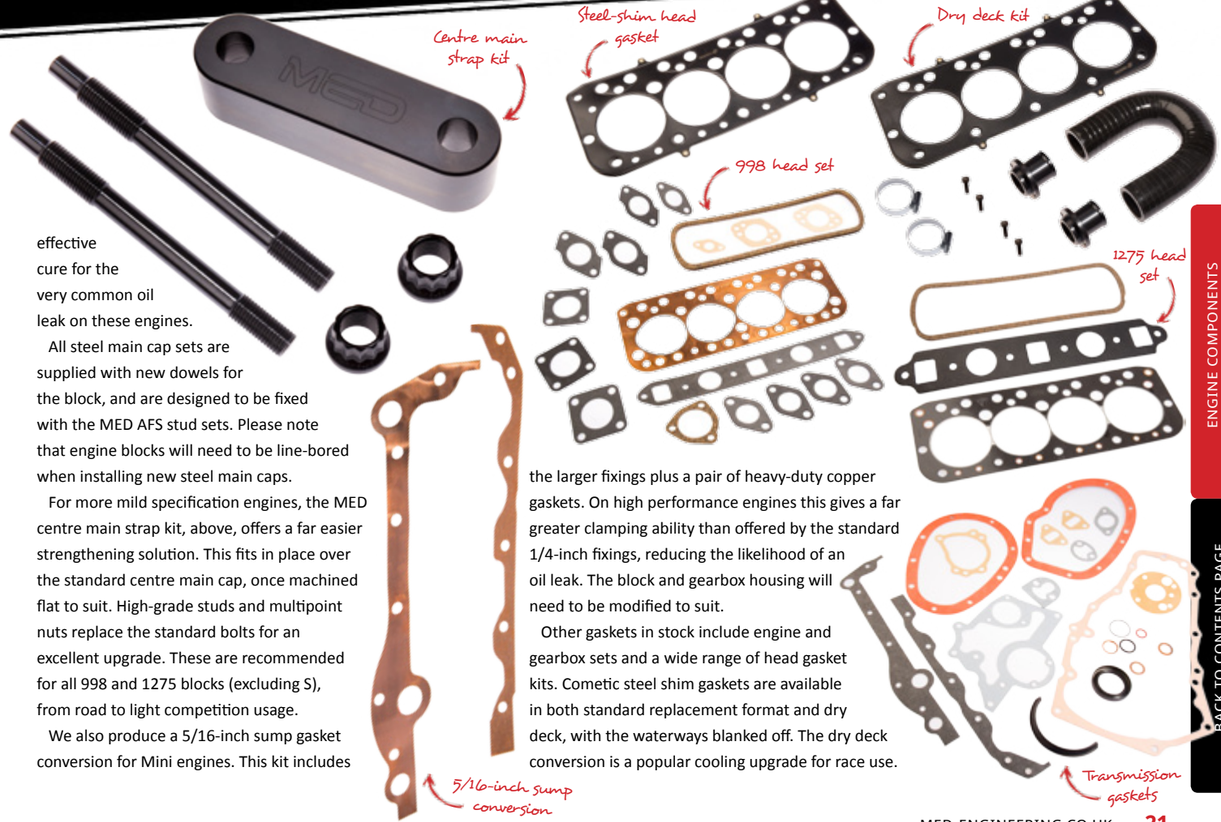
For inline engines (Sprite/Midget etc) we produce a rear main oil seal kit to accompany the steel caps. This is the most effective cure for the very common oil leak on these engines.

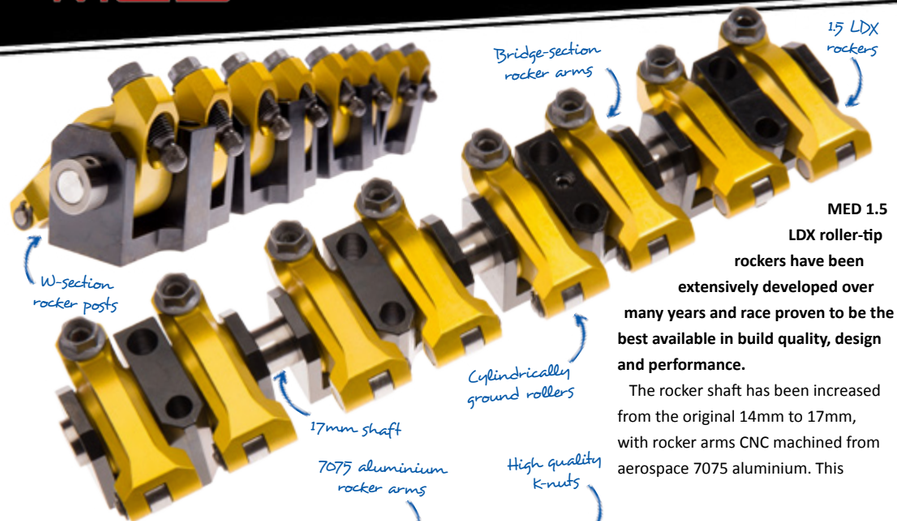
All steel main cap sets are supplied with new dowels for the block, and are designed to be fixed with the MED AFS stud sets. Please note that engine blocks will need to be line-bored when installing new steel main caps.

For more mild specification engines, the MED centre main strap kit, above, offers a far easier strengthening solution. This fits in place over the standard centre main cap, once machined flat to suit. High-grade studs and multipoint nuts replace the standard bolts for an excellent upgrade. These are recommended for all 998 and 1275 blocks (excluding S), from road to light competition usage.

We also produce a 5/16-inch sump gasket conversion for Mini engines. This kit includes the larger fixings plus a pair of heavy-duty copper gaskets. On high performance engines this gives a far greater clamping ability than offered by the standard 1/4-inch fixings, reducing the likelihood of an oil leak. The block and gearbox housing will need to be modified to suit.

Other gaskets in stock include engine and gearbox sets and a wide range of head gasket kits. Cometic steel shim gaskets are available in both standard replacement format and dry deck, with the waterways blanked off. The dry deck conversion is a popular cooling upgrade for race use.



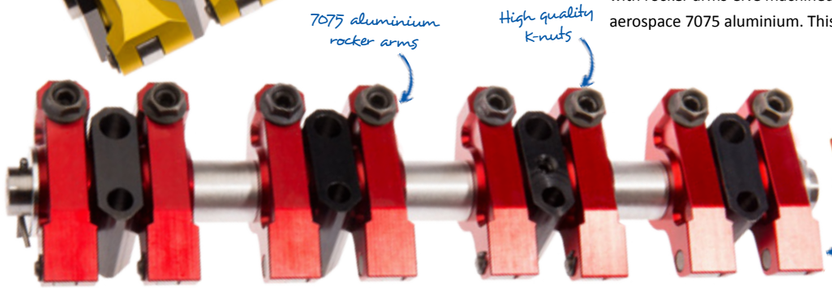


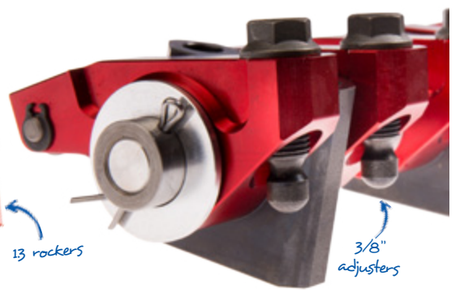
MED 1.5 LDX roller-tip rockers have been extensively developed over many years and race proven to be the best available in build quality, design and performance.

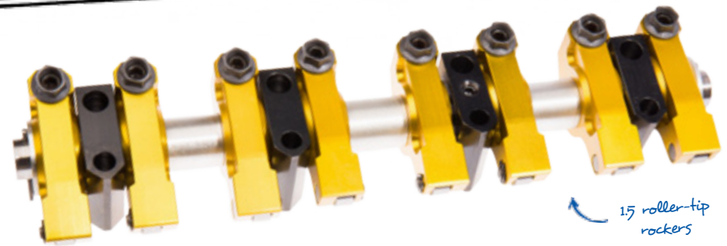
The rocker shaft has been increased from the original 14mm to 17mm, with rocker arms CNC machined from aerospace 7075 aluminium. This retains the same tensile strength as steel, allowing us to run the arms direct to the shaft without needle roller bearings. The result is an increased contact area between the rocker shaft and the rocker arm, improved lubrication and durability.

The LDX rockers feature a full captive rocker post design to encapsulate each individual rocker arm between a pair of rocker posts, to further reduce flex. The arms themselves have a bridge section to reduce flex at high rpm, while extra width in the front section gives greater roller pin support.

The roller pins have three locations to achieve maximum rigidity, with cylindrically-ground rollers to achieve







precise valve lift. These features all combine to create an unbeatable roller-tip rocker assembly.

LDX is also suited to fast road engines, but we offer an alternative design in both 1.5 and 1.3:1 ratio that may prove more affordable here. These roller-tip rocker assemblies use a similar 17mm shaft for increased stiffness, 7075 aluminium arms and larger 3/8-inch adjusters, just not the bridge-section design and rocker post cradles.

These are very effective on a wide range of engines, from mild road rebuilds to full competition. The 1.3 ratio gives a touch more valve lift than the stock rockers, but the main advantage is to totally eliminate any side loading on the valves as they pass through the guides. This reduces wear on the valves and guides. Meanwhile, the 1.5 ratio gives 1.5 times the lift at the cam lobe, for increased induction charge and added performance.

Our camshafts are designed to work best with the 1.5 ratio, but some engine specifications may benefit from the 1.3 type. Please note that the MED rockers will only suit a 1275 cylinder head.

Our steel billet pushrods are CNC machined on a very specialised machine from solid high-carbon steel, then heat treated. The central section is larger in diameter to reduce flex at high RPM. These are available in lengths to suit 998, 1275 and eight-port engines.

CYLINDER HEAD
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Our race valves are manufactured from 21NS stainless steel forgings and plasma nitrided after manufacture for extra strength and wear characteristics.

We keep a range of 1275 valves with various head diameters and stem sizes/configurations, as used in all MED cylinder heads from fast road to extreme competition. MED valves feature a wasted stem and three-angle seats for ultimate air flow and performance in this vital area of the cylinder head.

Standard valves use a 9/32" diameter stem, for which we keep high quality bronze valve guide sets, collets and top caps in steel or titanium. The S6 valves use a slimmer stem to further improve air flow within the ports. These need to be used with the matching bronze valve guide set and bespoke collets and titanium two-piece caps. Separate lash caps give a larger platform to spread load more evenly across the top of the valves.

See the table below to see the various configurations; please note that these are only suitable for 1275-based heads.

Stem Diameter	Valve Diameter	Inlet	Exhaust	Triple Groove	Single Groove
9/32"	30mm		•	•	
9/32"	30mm		•		•
9/32"	31mm		•		•
9/32"	35.7mm	•			•
9/32"	36mm	•		•	
9/32"	37mm	•			•
6mm	31mm		•		•
6mm	35.7mm	•			•
6mm	38mm	•			•

CYLINDER HEAD
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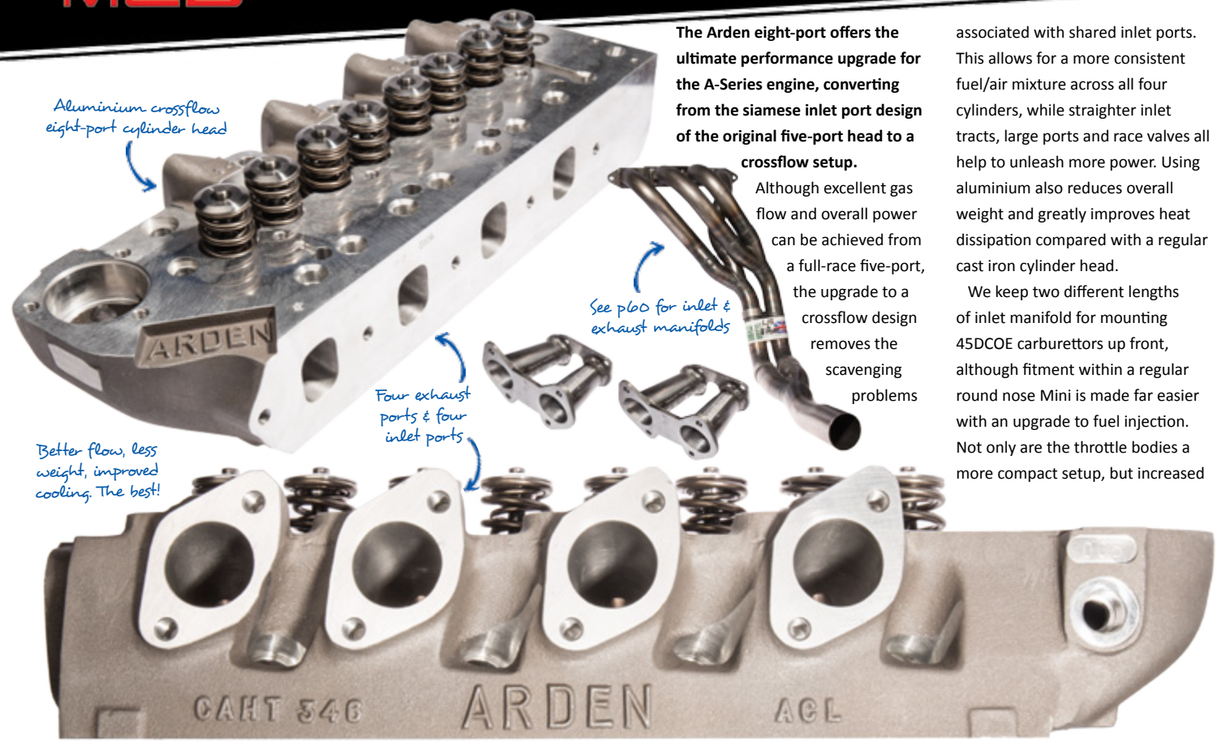


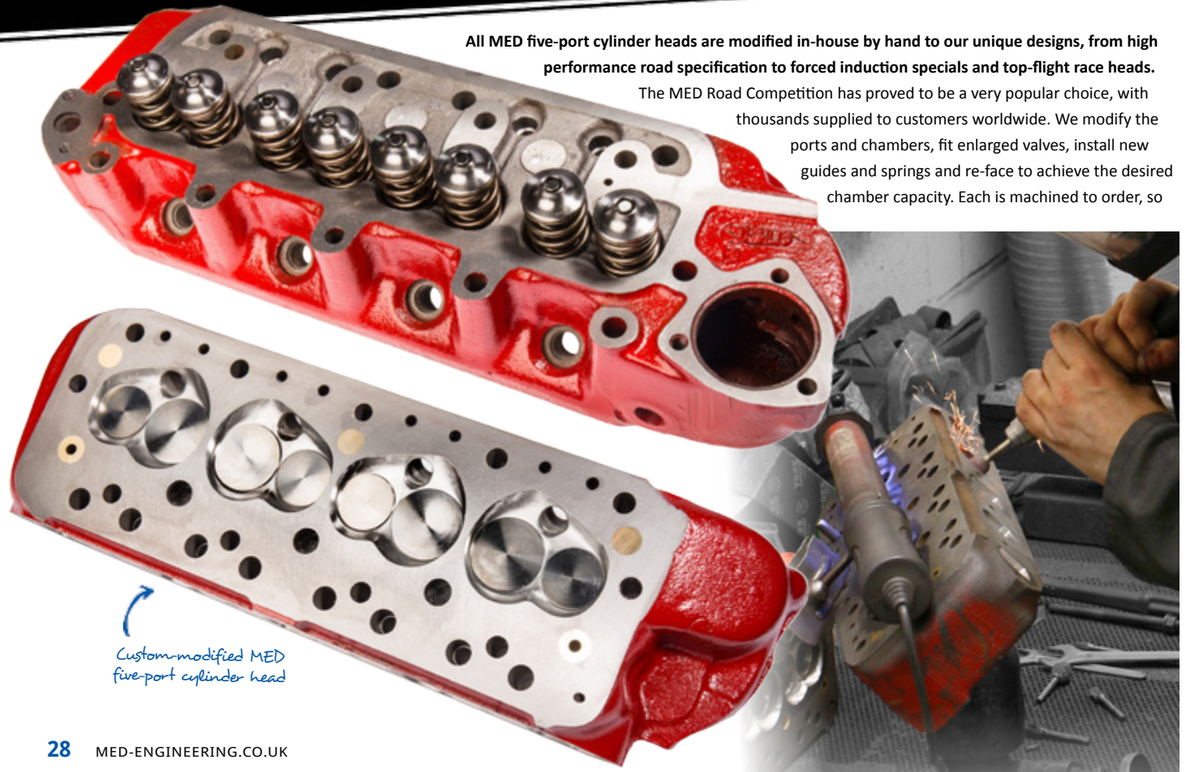
The Arden eight-port offers the ultimate performance upgrade for the A-Series engine, converting from the siamese inlet port design of the original five-port head to a crossflow setup.

Although excellent gas flow and overall power can be achieved from a full-race five-port, the upgrade to a crossflow design removes the scavenging problems associated with shared inlet ports. This allows for a more consistent fuel/air mixture across all four cylinders, while straighter inlet tracts, large ports and race valves all help to unleash more power. Using aluminium also reduces overall weight and greatly improves heat dissipation compared with a regular cast iron cylinder head.

We keep two different lengths of inlet manifold for mounting 45DCOE carburettors up front, although fitment within a regular round nose Mini is made far easier with an upgrade to fuel injection. Not only are the throttle bodies a more compact setup, but increased performance across the entire RPM range will also be achieved, making it the most effective option for both road and competition. The kit uses a DTA ECU and professionally made wiring loom.

The Special Tuning Arden eight-port head was originally developed in the late 1960s for use on 970 Cooper S engines, but the latest design has been tweaked for use on 1275s, with larger 21cc chambers. With a carefully built bottom end and fuel injection, maximum outputs of well over 150bhp are possible.

Please note that the head is not a direct bolt-on upgrade over the original five-port head, requiring a different type of camshaft, rockers, steel con rods, longer pushrods and different manifolds. Therefore the engine build should be based around using the Arden head, for which we keep all of the parts in stock, including a range of Piper camshafts. For full-race engines we would highly recommend the use of a steel crankshaft package, four-bolt steel main caps and an MED dog-engagement gear set.



Custom-modified MED five-port cylinder head

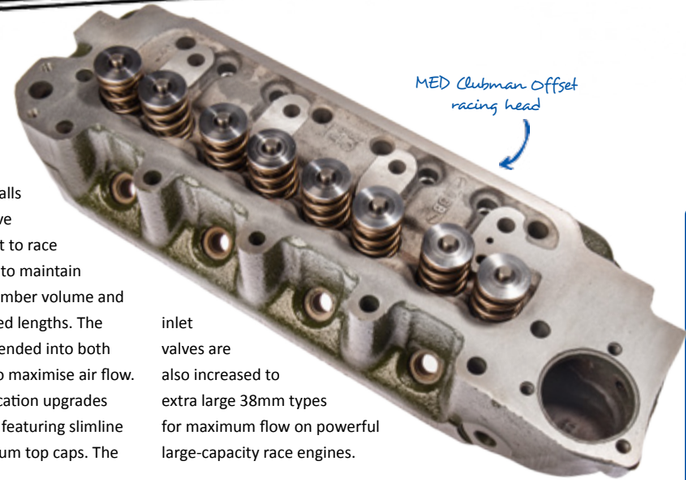
All MED five-port cylinder heads are modified in-house by hand to our unique designs, from high performance road specification to forced induction specials and top-flight race heads.

The MED Road Competition has proved to be a very popular choice, with thousands supplied to customers worldwide. We modify the ports and chambers, fit enlarged valves, install new guides and springs and re-face to achieve the desired chamber capacity. Each is machined to order, so your head will be a bespoke creation matched to the engine specification, rather than a one-size-fits-all casting.

From the Rally Special onwards we upgrade the valves to a stronger single-collet groove design that's essential for higher states of tune. From here, the Clubman Race head increases the inlet valve head diameter to 37mm for increased flow, with port and chamber design to suit.

To enlarge the inlet valves any more, we need to offset the centre line of the exhaust valve stems in the guides to increase the clearance between inlet and exhaust valve heads. Combustion chambers on all race heads are modified with full radius side walls and double radius valve seats, which are all cut to race tolerances. This helps to maintain equal combustion chamber volume and equal valve spring fitted lengths. The valve seats are also blended into both chambers and ports to maximise air flow.

Our ultimate specification upgrades the valves to Series 6, featuring slimline 6mm stems and titanium top caps. The inlet valves are also increased to extra large 38mm types for maximum flow on powerful large-capacity race engines.



MED Clubman Offset racing head

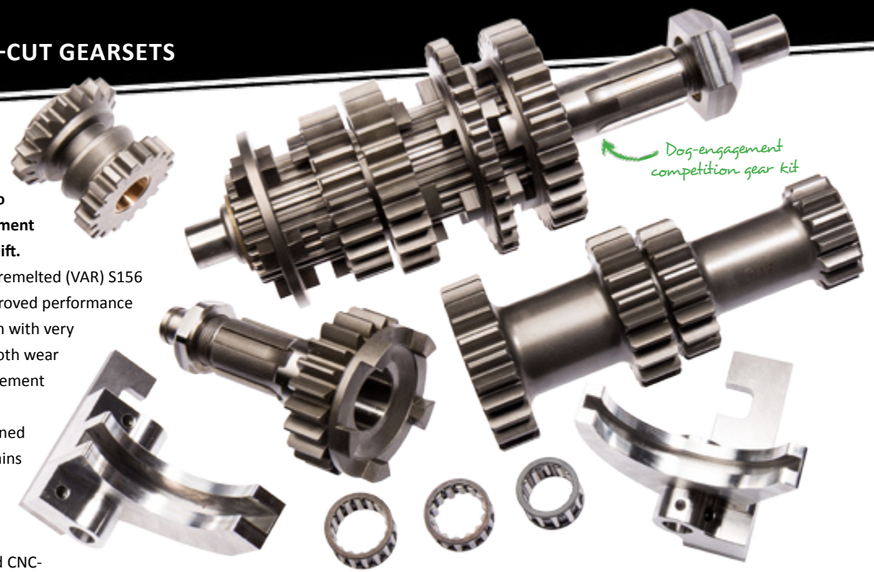
Head type	Application	Inlet valve	Exhaust valve	Stem size	Stem grooves	Spring type	Spring caps	Manifold size
Road Competition	Fast road	36mm	30mm	9/32"	Triple	Road	Standard	Standard
Forced Induction	Turbo & supercharged	36mm	30mm	9/32"	Triple	Road	Steel	Standard
Rally Special	Road & rally	35.7mm	30mm	9/32"	Single	Race	Standard	Standard
Clubman Race	Full race	37mm	30mm	9/32"	Single	Race	Steel	Large bore
Clubman Offset	Full race	37mm	31mm	9/32"	Single	Race	Steel	Large bore
Series 6	Ultimate race	38mm	31mm	6mm	Single	Race	Titanium	Large bore
Appendix K	Historic race	37mm	31mm	9/32"	Single	Race	Steel	Large bore
Miglia	Miglia series	35.7mm	31mm	6mm	Single	Race	Titanium	Large bore
Se7en	Se7en series	35.7mm	31mm	6mm	Single	Race	Titanium	Large bore

The MED dog-engagement racing gear set for the Mini is the choice of champions worldwide. Our gear kit is CNC machined to exacting tolerances with a five-dog engagement for ultimate strength and a positive gear shift.

The gears are machined from vacuum arc remelted (VAR) S156 steel and then cryogenically treated for improved performance and durability. The gears are designed to run with very little backlash, which eliminates the gear tooth wear commonly associated with other dog-engagement gear kits on the market.

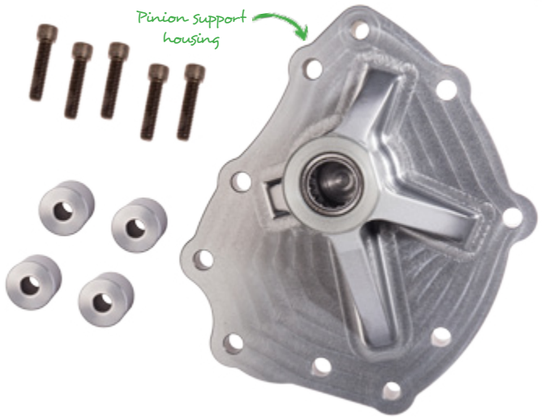
The modular selector forks are CNC machined from aerospace 7075 aluminium, which retains the same tensile strength as steel. The kits are also supplied with the needle roller bearing for both ends of the laygear, along with the first/third needle roller bearing and CNC-machined first and third motion locknuts.

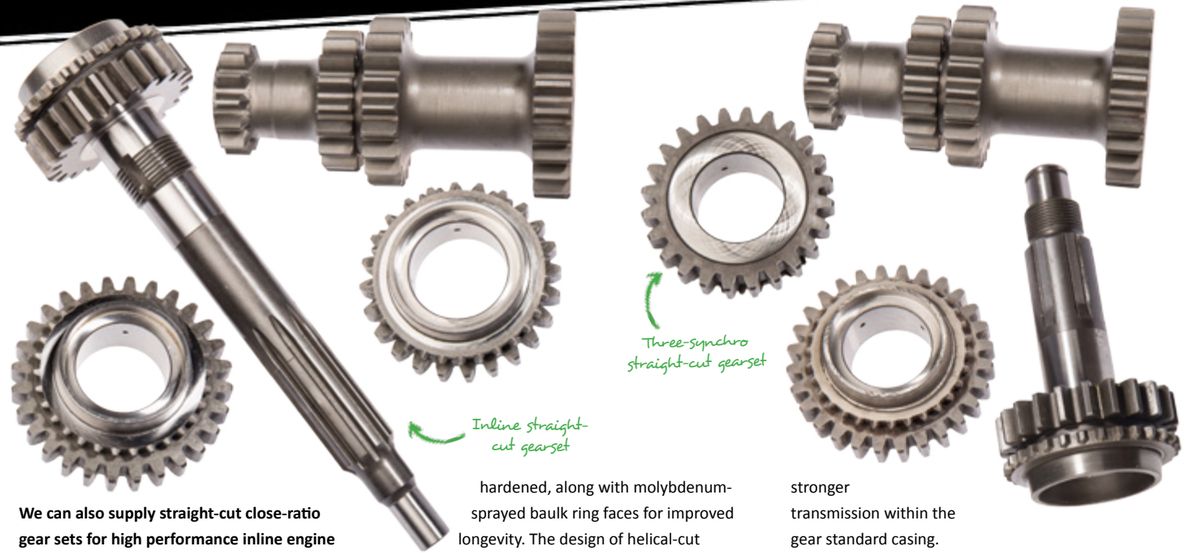
As an upgrade over the standard gearset, the kit is also available superfinished. The superfinished gears will experience reduced friction, lower operating temperature, less wear, better scuffing resistance, and better contact fatigue resistance, all of which contributes to a better running competition transmission.



The MED pinion support housing is designed to work with our dog engagement gearset, strengthening this common weak spot inside the gearbox housing. It's a highly recommended upgrade for any competition car. Other gearbox mainshafts may be able to be modified to suit the housing - contact us for more details.

If the dog-engagement gearset is not permitted, or is too hardcore for your road car, we can supply straight-cut close-ratio gearsets that still use the baulk rings. The race gearset is a six-piece kit that can be supplied for both remote and rod change gear casings. The most affordable option is the Clubman set, as it allows the re-use of first/reserve gear from your existing gearset. However, these only suit the later rod-change gearbox.



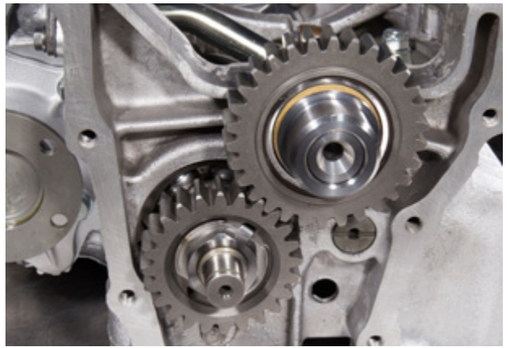


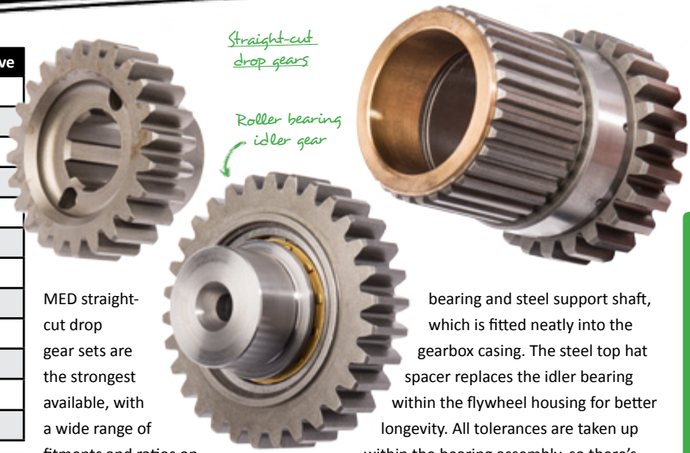
We can also supply straight-cut close-ratio gear sets for high performance inline engine applications, such as racing Midgets and Sprites. These sets are machined on the very latest CNC machinery, allowing us to offer a perfect gear tooth form in similar ratios to the original 1970s Special Tuning gears.

The gear kit is produced from EN36C and case hardened, along with molybdenum-sprayed baulk ring faces for improved longevity. The design of helical-cut gears, as found in standard gearboxes, leads to increased side (or axial) loadings on the transmission. As power outputs increase, this places greater strain on the transmission casing and bearings, in turn leading to reduced reliability. Using straight-cut gears allows us to design a stronger transmission within the gear standard casing.

The final gear set in our range suits the early three-synchro Mini gearbox, which features a 'crash' first gear. If you're building a performance Mkl Mini, this may be the gear set for you. For reference, the changeover date to four-synchro gearboxes was mid 1968.

Final Drive	Drop gear set	Effective final drive
3.47:1	1:0.958	3.32:1
3.47:1	1:1.043	3.62:1
3.75:1	1:0.958	3.59:1
3.75:1	1:1.043	3.91:1
3.875:1	1:0.958	3.71:1
3.875:1	1:1.043	4.04:1
4.066:1	1:0.958	3.90:1
4.066:1	1:1.043	4.24:1
4.20:1	1:0.958	4.02:1
4.20:1	1:1.043	4.38:1
4.50:1	1:0.958	4.31:1
4.50:1	1:1.043	4.69:1



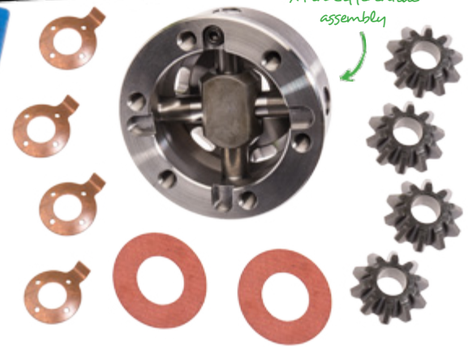


MED straight-cut drop gear sets are the strongest available, with a wide range of fitments and ratios on offer. These include 998 or 1275, A-Series or A-plus, 1:1 ratio, 1:1.043 ratio or 1:0.958 ratio. The table above and left shows the effects on the overall final drive ratio of adjusting the drop gear ratio. You'll see that it's possible to tweak the final drive ratio to be marginally taller or shorter, allowing you to perfect the gearing to suit different events or circuits without having to change the crownwheel and pinion.

The idler gear is fitted with a roller bearing and steel support shaft, which is fitted neatly into the gearbox casing. The steel top hat spacer replaces the idler bearing within the flywheel housing for better longevity. All tolerances are taken up within the bearing assembly, so there's no need to shim the idler gear as with a standard pin-type setup. Not only does this save time, the design is also far stronger and durable in operation.

The primary gear is fitted with a floating bush that can be replaced in future if necessary, while all three gears have wider teeth than previous designs for additional strength. This amounts to the strongest possible straight-cut drop gear set, which we would highly recommend using in all competition engines.

ARP crownwheel bolts



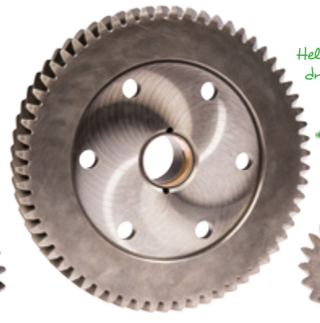
X-Pin differential assembly

The standard differential unit is a weak link for the Mini when engine power increases, road or race. To significantly strengthen this area, the X-Pin design doubles up the number diff pins, and with the addition of two extra gears comes a much smoother drive.

We produce a wide range of crown wheel and pinion sets to suit either the X-Pin, helical gear LSD or NXG. The straight-cut sets are CNC machined from S82-grade steel billets, with an extra 12% width on the crown wheel over standard. This additional surface contact with the pinion gear helps to spread the tooth load for even more strength.

To complete the job, we would highly recommend using a set of genuine ARP crownwheel bolts, available for the complete range of differentials.

S/C final drive gears



Helical final drive gears

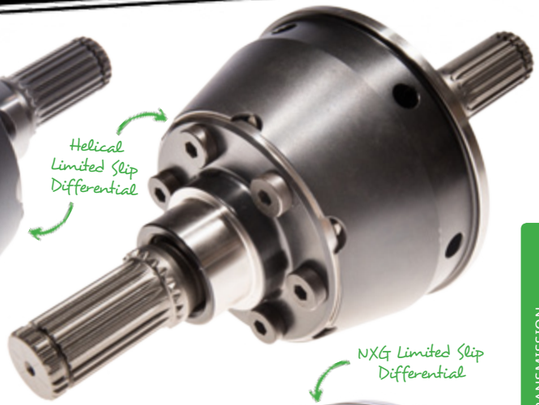
LSD S/C final drive gears

Taking a step up from the X-Pin assembly, we stock three different types of limited-slip differentials. These combine the additional strength of the X-Pin with increased traction to the tyres.

The helical gear LSD differential unit can transform the performance of your Mini. It relies upon gears rather than clutch plates for its operation, so it's easier to drive than a traditional LSD. Torque is biased to the wheel with the most grip, considerably reducing wheelspin and understeer.

The differential is a direct replacement of the standard unit, therefore enabling the re-use of the original-type crown wheel and pinion. It is particularly effective in high performance road and rally Minis, but has also proved popular in trackday and race applications. This diff comes with pot joint output shafts to suit the later style drive shafts, although we keep adapters if you wish to run Hardy Spicer couplings. For added peace of mind, these differential units come with a lifetime guarantee.

Moving to the NXG differential, this clutch-plate LSD aims to be the most progressive race unit on the market.



Helical Limited Slip Differential

NXG Limited Slip Differential

The plate pack runs on eight active surfaces, giving maximum surface area and contact. The pre-load spacer allows torque to be preset to the required setting, giving infinite adjustment, whilst the bevel and planet gear pack have been designed with a large tooth profile, creating the smoothest mesh and the strongest possible design. The NXG design also aims to eliminate rattle and excessive back lash, for the ultimate modern competition differential.

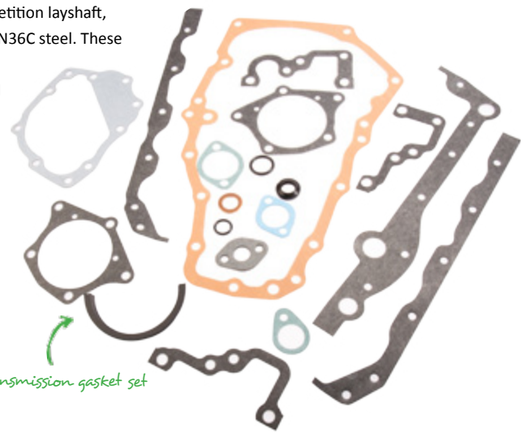
The NXG is available as standard with 30/90 ramp angles and a 70lb/ft pre-load, which works effectively in both circuit racing and rally cars. An inline version for rear-wheel-drive cars is also popular with our Sprite and Midget customers.

The Mini transmission is only as reliable as the weakest component, and with that in mind we keep a wide range of competition-grade upgrades.

Our high quality baulk rings suit MED straight-cut synchro gear kits and all standard helical-cut gearsets too. These are a step above many cheaper alternatives on the market, so any ideal replacement come rebuild time.

Another clever upgrade is our heavy duty competition layshaft, machined from EN36C steel. These suit rod change gearboxes and all varieties of MED dog box gear sets. We also offer a large range of bearings, gaskets and fixings for all Mini gearboxes.

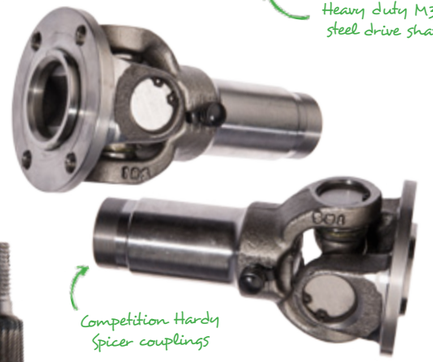
The centre oil pick-up pipe is a firm favourite with performance Mini owners, reducing the chances of oil starvation during hard cornering. We wouldn't rebuild a gearbox without one.

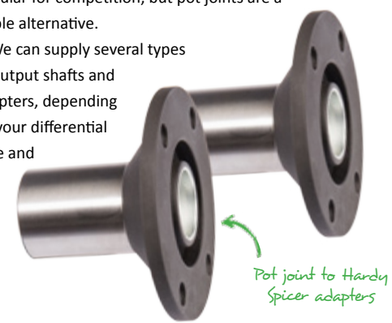


Moving outwards from the gearbox and differential, we produce driveline components worthy of the most powerful A-Series race and rally Minis.

Once you've decided upon your differential type, standard fitment or LSD, you'll need to choose between Hardy Spicer style couplings or the later pot joints. Generally Hardy Spicers are the most popular for competition, but pot joints are a viable alternative.

We can supply several types of output shafts and adapters, depending on your differential type and couplings. These are compatible with standard driveshafts or our own M300 steel competition shafts, which we would recommend for all highly tuned Minis. Trusted by hundreds of competitors and race winners worldwide, these are the strongest driveshafts available for the Mini.





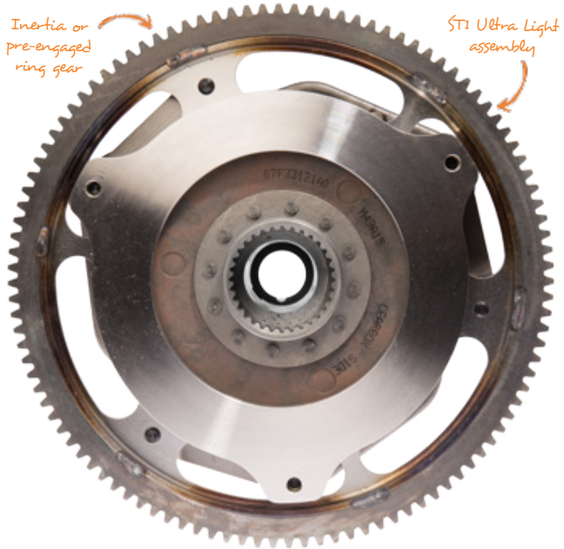
ULTRA LIGHT STEEL FLYWHEELS

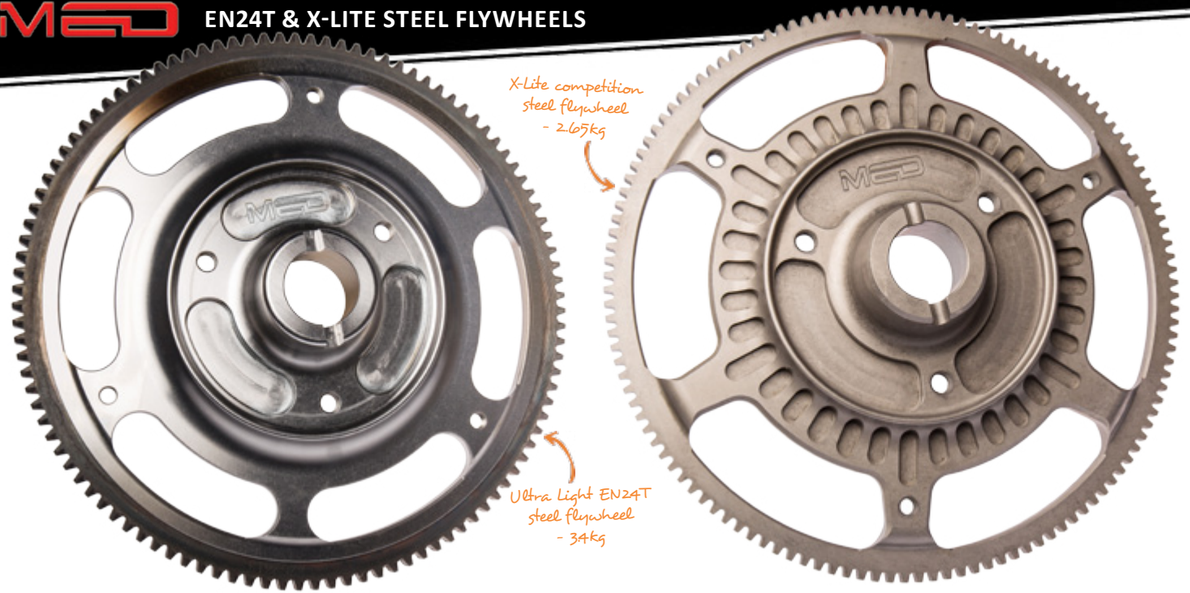
One of our most popular products, the MED Ultra Light flywheel is CNC machined from EN8 grade steel billet with extensive lightening slots around the outer edge. The design has evolved over many years to offer an excellent upgrade for fast road and trackday Minis using a pre-Verto setup. The 3.65kg flywheel and 1.3kg backplate combination gives a significant weight saving over standard for a noticeable improvement in acceleration. However it is not so light as to reduce road drivability, making a good all-rounder.

All parts are available separately but we would highly recommend purchasing a complete clutch/flywheel package, fully assembled and balanced to within one gram. Kits are all assembled and balanced to order, including the clutch cover, drive straps, bolts and plate. There's a choice of uprated 180mm solid clutch plate, either MED Turbo spec for fast road use or MED Bonded, for anything up to full competition. See page 40 for more details on our lighter, stronger EN24T steel range (ST3 and ST4).

Once you've selected a suitable kit for your application, the final choice is the ring gear design to suit your starter motor setup – we keep both inertia type or later pre-engaged ring gears. The outer gears are heat-shrink fitted to the flywheel centres and then welded in place for extra strength.

Flywheel kit	Steel grade	Flywheel weight	Back plate weight	Ring gear	Clutch cover	Clutch plate	Drive straps	Application
ST1	EN8	3.65kg	1.3kg	Pre-engaged	Orange	MED Turbo	Six	Fast road
ST1	EN8	3.65kg	1.3kg	Inertia	Orange	MED Turbo	Six	Fast road
ST2	EN8	3.65kg	1.3kg	Pre-engaged	Orange	MED Bonded	Six	Fast road/trackday
ST2	EN8	3.65kg	1.3kg	Inertia	Orange	MED Bonded	Six	Fast road/trackday
ST3	EN24T	3.4kg	0.85kg	Pre-engaged	Orange	MED Bonded	Six	Trackday/competition
ST3	EN24T	3.4kg	0.85kg	Inertia	Orange	MED Bonded	Six	Trackday/competition
ST4	EN24T	3.4kg	0.85kg	Pre-engaged	Grey	MED Race Paddle	Nine	Competition
ST4	EN24T	3.4kg	0.85kg	Inertia	Grey	MED Race Paddle	Nine	Competition

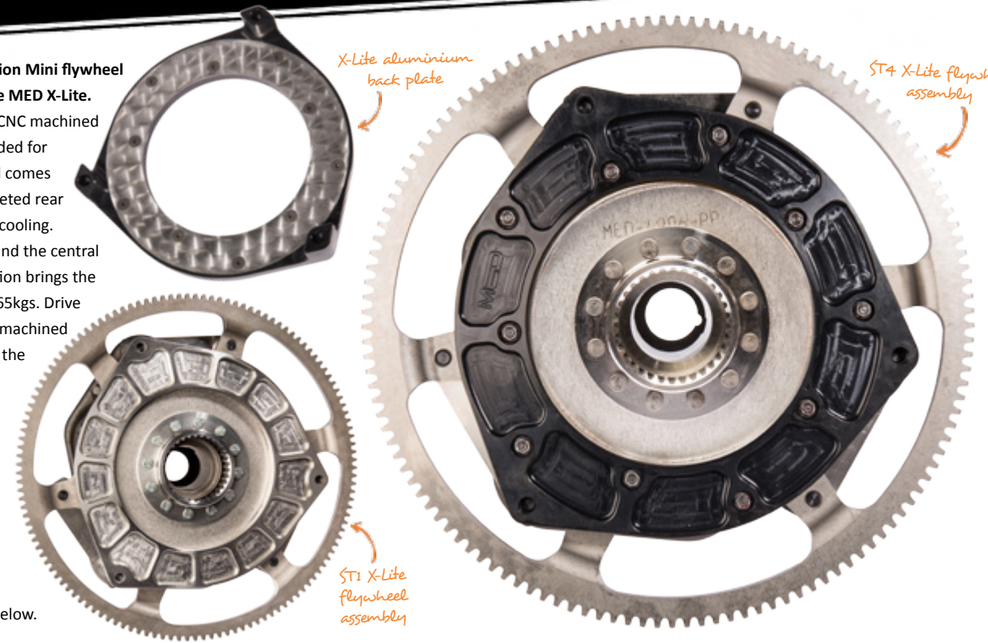




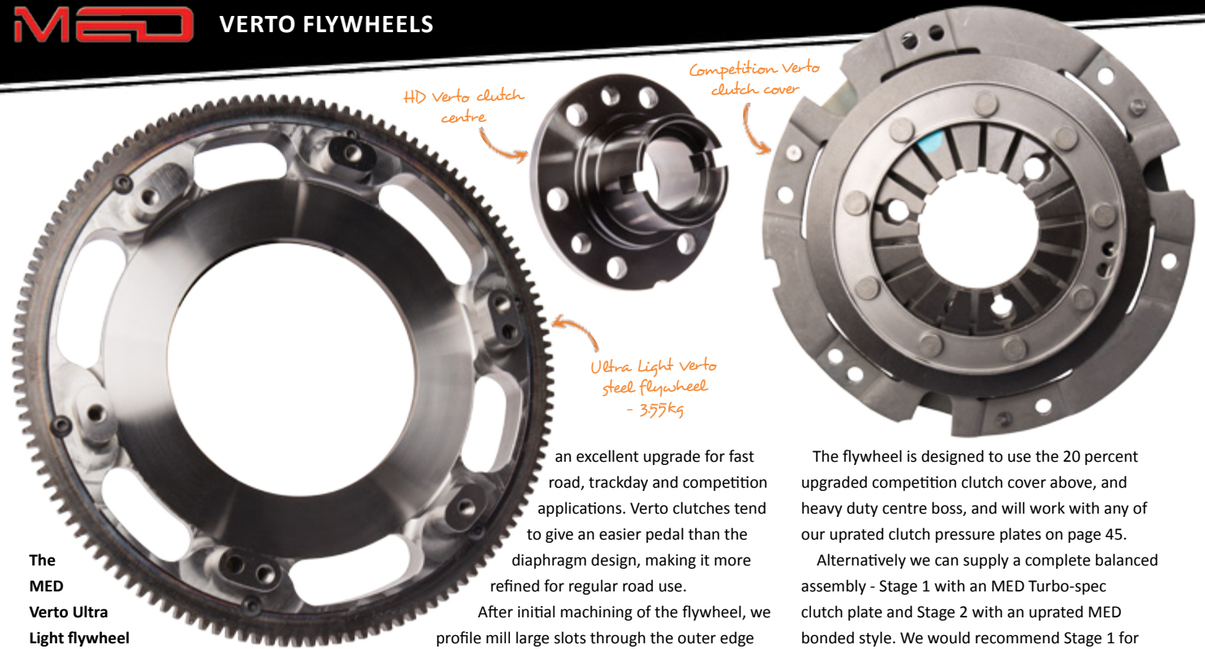
The next stage up from our Ultra Light steel flywheel is the EN24T Ultra Light, a competition-grade flywheel that's similar in design but machined from a higher grade of steel. As a result we can remove more material from around the centre boss without weakening the flywheel assembly. It's a similar story with the EN24T steel back plate, where large pockets are machined in the rear face to further reduce weight.

Combined, the upgrade from EN8 steel to EN24T allows us to save approximately 0.7kg, some 14 percent, while also increasing strength and durability. The lower the mass of the rotating assembly, the more freely an engine will be able to rev. On a competition A-Series engine with a high rpm power band, the ability to reach peak rpm more quickly by improving acceleration is vital to the car's overall performance.

The ultimate competition Mini flywheel setup is found with the MED X-Lite. The latest evolution is CNC machined from EN24T steel, nitrided for strength/durability and comes with a ribbed and pocketed rear clutch face to improve cooling. Further lightening around the central boss and ring gear section brings the weight down to just 2.65kgs. Drive strap spacers are even machined from aluminium, while the steel-faced aluminium backplate weighs a mere 0.7kg. The total weight saving over the MED Ultra Light is an impressive 1.65kg! We can assemble and balance four different specifications of X-Lite assembly, as detailed below.



Flywheel kit	Backplate	Flywheel weight	Back plate weight	Ring gear	Clutch cover	Clutch plate	Drive straps	Application
X-Lite ST1	EN24T	2.65kg	0.85kg	Pre-engaged	Grey	MED Bonded	Nine	Historic competition
X-Lite ST2	EN24T	2.65kg	0.85kg	Pre-engaged	Grey	MED Race Paddle	Nine	Historic competition
X-Lite ST3	Aluminium	2.65kg	0.7kg	Pre-engaged	Grey	MED Bonded	Nine	Ultimate competition
X-Lite ST4	Aluminium	2.65kg	0.7kg	Pre-engaged	Grey	MED Race Paddle	Nine	Ultimate competition

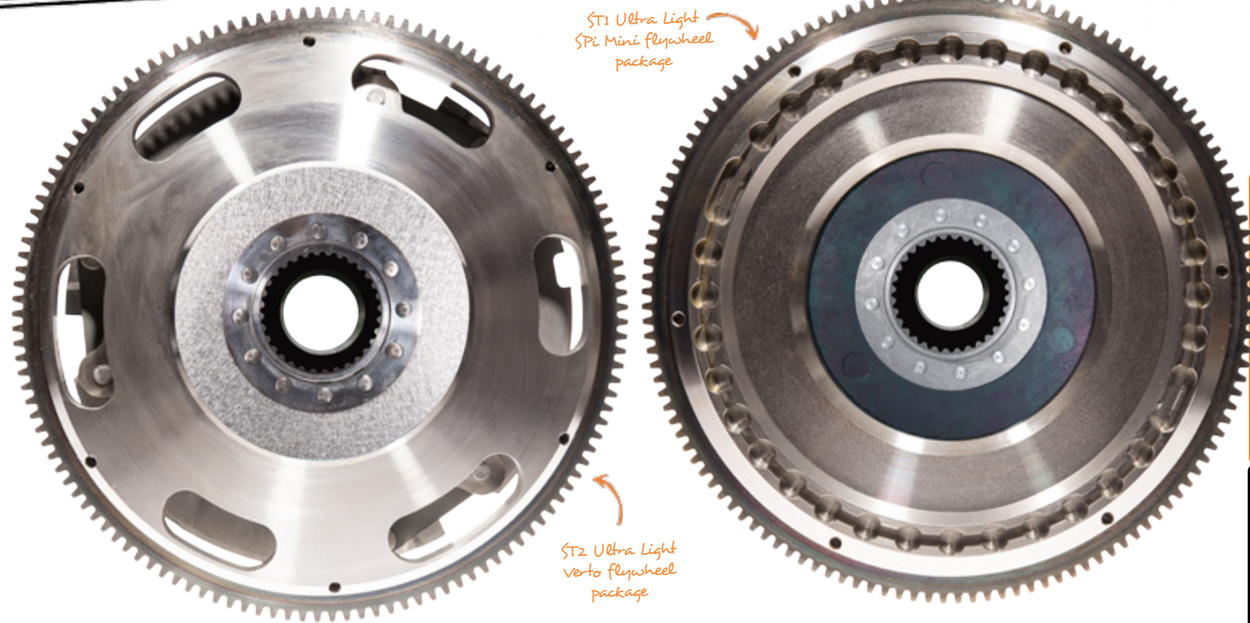


The MED Verto Ultra Light flywheel weighs approximately 2kg less than the standard unit at just 3.55kg. It is CNC turned from EN8 steel billet, just like our traditional pre-Verto Mini flywheel, making an excellent upgrade for fast road, trackday and competition applications. Verto clutches tend to give an easier pedal than the diaphragm design, making it more refined for regular road use.

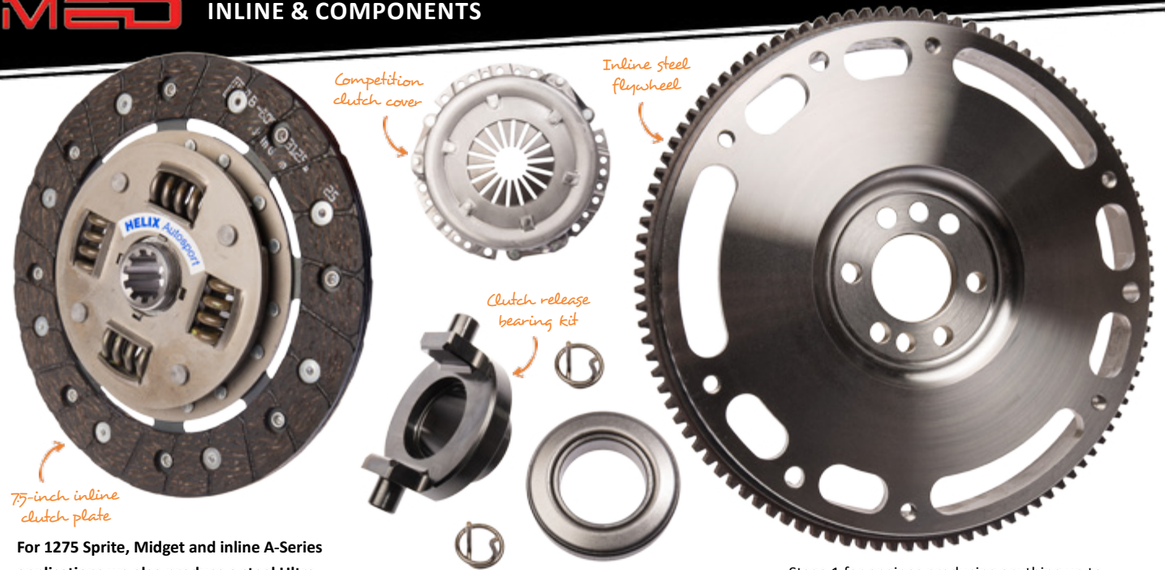
After initial machining of the flywheel, we profile mill large slots through the outer edge for extra weight saving where it's most effective. Final machining is carried out around the clutch cover mounting bosses before the pre-engaged ring gear is retained by six high tensile screws.

The flywheel is designed to use the 20 percent upgraded competition clutch cover above, and heavy duty centre boss, and will work with any of our uprated clutch pressure plates on page 45.

Alternatively we can supply a complete balanced assembly - Stage 1 with an MED Turbo-spec clutch plate and Stage 2 with an uprated MED bonded style. We would recommend Stage 1 for all performance road cars, Stage 2 for highly tuned road, trackday and competition cars. The overall weight remains very similar, so simply choose the plate that best suits your application.



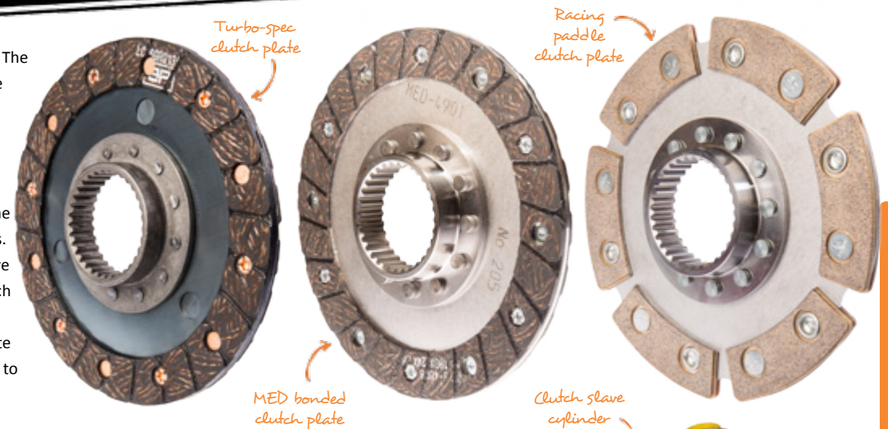
We also produce Ultra Light steel flywheels for single and multi-point fuel injected Rover Minis. These are a similar design to the MED Verto steel Ultra Light, but with reluctor teeth machined into the rear face for the crank position sensor. This design stops the teeth from slipping, which can occur on the standard flywheel. The teeth are also machined to very close tolerances to maintain accurate ignition timing when the engine is running. As with the Verto Ultra Light, we can supply complete balanced assemblies with an uprated clutch cover and MED clutch plate.



For 1275 Sprite, Midget and inline A-Series applications we also produce a steel Ultra Light flywheel, weighing just 3.9kg. This is CNC machined from billet EN8 steel and is ideally suited to trackday and full competition usage. Our flywheel is designed for use with a larger 7.5-inch diameter clutch plate, for increased strength and greater clamping ability over the standard setup. This, combined with a competition clutch cover and heavy-duty clutch release bearing assembly, makes for a very attractive upgrade. The MED Inline Stage 1 package has been used successfully in mildly-tuned road cars to all-out circuit racers. We would recommend the Stage 1 for engines producing anything up to 140bhp and 120lb.ft torque.

After much testing, we now stock four different clutch plates for the high performance A-Series engine. Of the three Mini/Metro plates, we begin with the solid MED Turbo type. This replicates the original Metro Turbo clutch plate and makes a good fast road and trackday upgrade. The MED Bonded plate uses a more durable friction face material, and comes with a CNC-machined steel clutch centre. Finally, for competition use with high power outputs we produce a racing paddle plate. This has been tested to the extreme in circuit and drag racing Minis.

For the pre-Verto clutch setup we have designed a heavy-duty clutch arm, which does away with the weak ball end that can easily bend and break. The complete kit below includes everything you need to convert to a heavy-duty clutch arm.



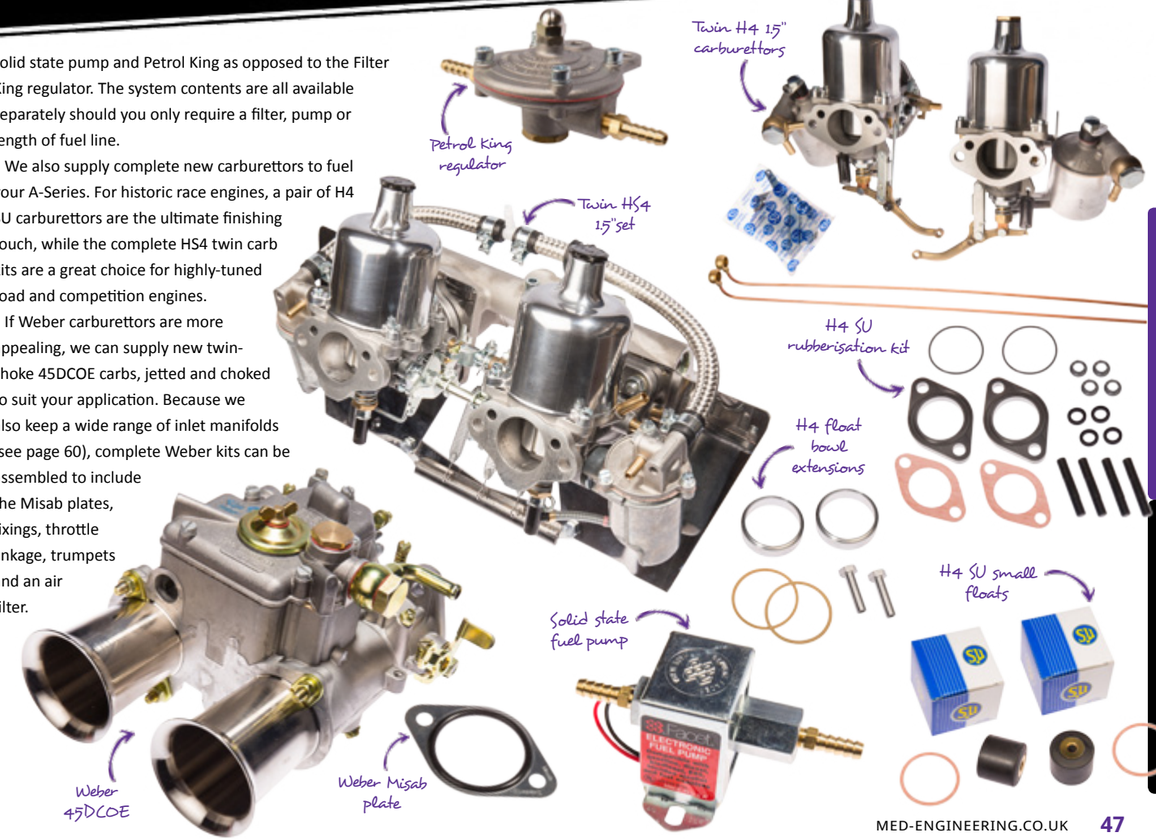
Our competition fuel system kits include the components required to upgrade from a mechanical fuel pump to a motorsport-grade electric fuel pump, filter and pressure regulator. The Facet Red Top cylindrical fuel pump provides superior reliability over older points triggered types, and is capable of delivering up to 151 litres per hour at 6-8 psi.

We have paired this up with a high quality pre-filter, to be installed between the tank and pump, and a Malpassi Motorsport Filter King pressure regulator. This unit can regulate and filter fuel without restriction and is the number one choice for historic racers worldwide.

Also included is two metres of high quality nylon braided fuel line, hose clips to suit and a fuel pump blanking plate. For those with SU carburettors we offer an alternative installation kit with the smaller diameter fuel hose, solid state pump and Petrol King as opposed to the Filter King regulator. The system contents are all available separately should you only require a filter, pump or length of fuel line.

We also supply complete new carburettors to fuel your A-Series. For historic race engines, a pair of H4 SU carburettors are the ultimate finishing touch, while the complete HS4 twin carb kits are a great choice for highly-tuned road and competition engines.

If Weber carburettors are more appealing, we can supply new twin-choke 45DCOE carbs, jetted and choked to suit your application. Because we also keep a wide range of inlet manifolds (see page 60), complete Weber kits can be assembled to include the Misab plates, fixings, throttle linkage, trumpets and an air filter.



The MED stub stacks are CNC machined from billet aluminium and have been extensively developed and tested to optimise the elliptical radius of the inlet. The result is improved air flow to the carburettor/throttle body and a proven increase in performance - on a wide range of different engine setups and rolling roads/dynos.

We keep five different designs to suit the most popular A-Series SU and Weber carburettors, and also for 40mm throttle bodies as used on many cross-flow cylinder head conversions.

The stub stacks have all been designed to sit within an ITG foam air filter and base plate, which again has been found to give the best performance possible. The filter has an open-back design and offers minimal restriction on air flow but maximum protection from grit and debris.

For historic racing specifically, such as FIA Appendix K, we can supply a classic-style cast ram pipe in two different lengths. These mount straight to the HS4/H4 SU carburettor and look perfectly at home in the engine bay of a 1960s period race car. They have also been proven to improve performance on these classic SU carburettors.

MED stub stack kits include an ITG air filter, stub stacks and all fixings required, as a complete performance filtration package. These kits are available to suit the most popular standard and aftermarket A-Series SU carburettor setups, single and twin.

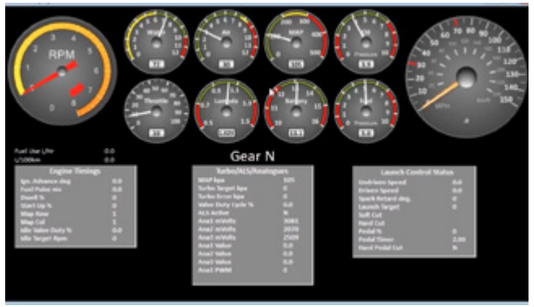
The Dual Cone Ram system has been dyno tested on numerous race engines with a Weber 45 DCOE carburettor and found to produce a gain of between 4 to 6bhp over the standard trumpets. The central velocity stack creates more airflow into the auxiliary venturi, increasing air speed over the venturi and in turn amplifying the mixture signal, bringing the engine on to cam earlier. An optimised elliptical form smooths the airflow into the choke area, creating more bhp throughout the range. Supplied with filter, we believe this to be the best all-round kit available for the Weber 45.

The MED Ignition Management Kit includes everything required to convert your traditional distributor to a modern programmable DTA ignition system. This gives the best of both worlds for the high performance A-Series engine - a programmable distributor-less ignition system that retains the simplicity of fuelling with carburettors. Expect improved power and drivability once correctly mapped on a rolling road or dyno, for race or road applications.

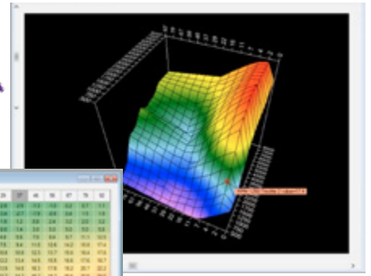
Aside from the intuitive and widely-used mapping software, the real advantage of using DTA comes with the professionally built ECU and wiring loom. The loom has been made specifically to suit competition Minis, with the coil pack mounted up on the bulkhead and the ECU safely under the front dash rail. This plugs straight into the supplied wasted spark coil pack and MED crankshaft position sensor kit, with spare plugs for an optional Throttle Position Sensor or Manifold Absolute Pressure sensor. This makes for a far more reliable kit than a DIY-built loom, which could easily make the difference between winning a race and retiring.

Installing an additional TPS or MAP sensor will allow two-dimensional mapping of the ignition advance curve, so the timing can also be set by throttle load, as well as engine RPM. For road cars this will unleash a whole new level of tractability, a noticeably smoother drive and improved fuel economy.

The S40i ECU not only allows full mapping of the ignition advance curve, but can also be used to control various electrics in the car. For example it will connect to any tacho to display RPM, an external shift light, and can also act as a rev limiter for when the red mist sets in. You could potentially wire the fuel pump relay via the ECU and it can also be configured to receive inputs from temperature and pressure sensors. So with the correct loom it would even be possible to use the ECU as a controller for an electric water pump and fan based on coolant temperature.

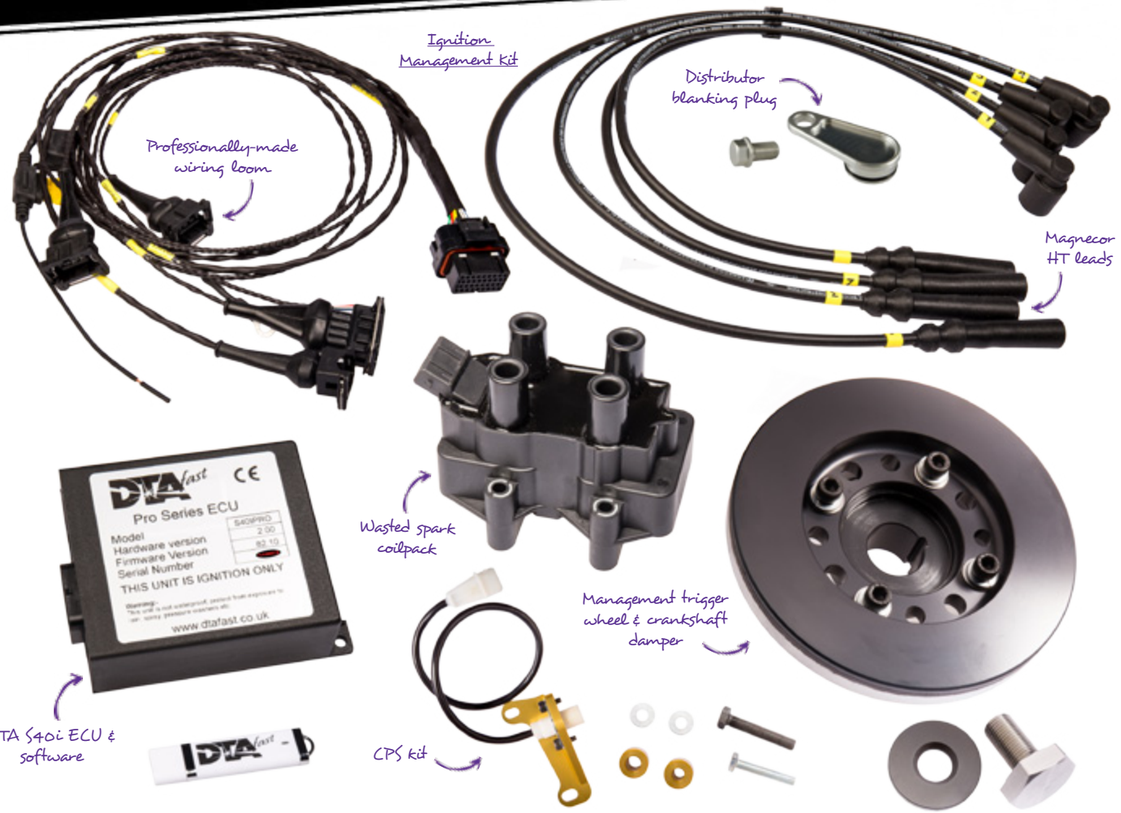


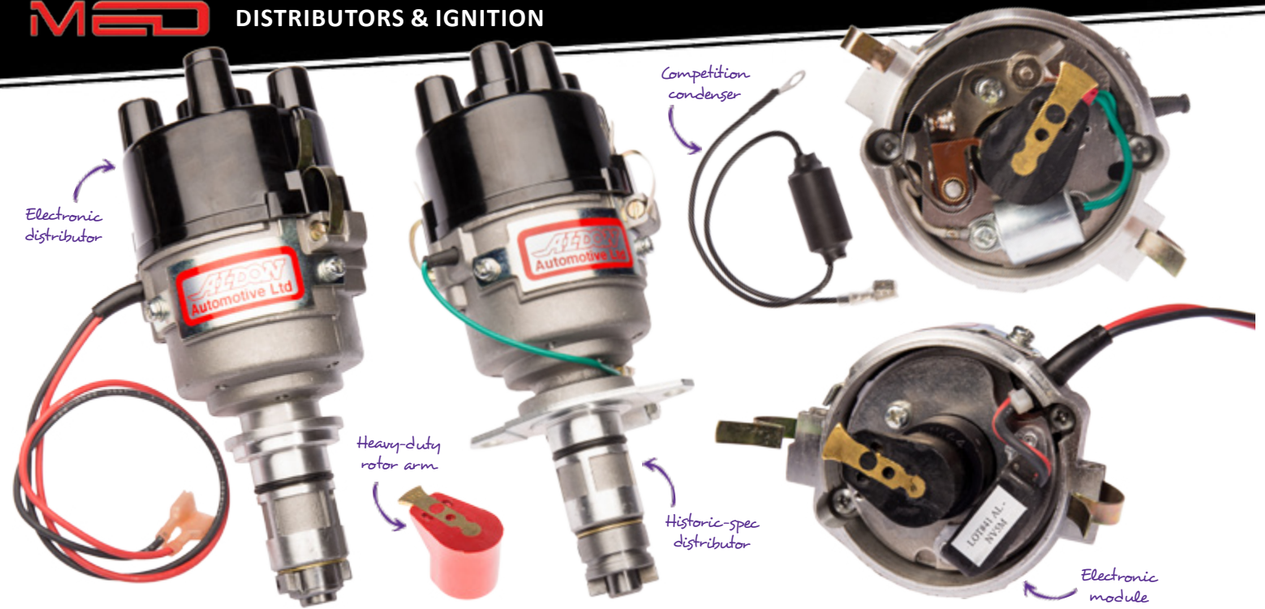
Live display of engine parameters



Two-dimensional ignition map

Easy-to-use mapping software with interpolation between RPM/load sites





If a more traditional style ignition system is preferred, we keep a range of high performance electronic ignition distributors from Aldon Automotive. These are built into brand new Lucas distributor bodies, with a choice of a 'Yellow' advance curve for performance road cars and a 'Red' advance curve to suit racing camshafts. There's two designs to suit either A-Series or the later A-plus engine blocks, all equipped with an electronic ignition module in place of the contact breaker points. You can be assured of a high quality product that updates the original-fitment distributor with ease.

As an alternative for FIA Appendix K racing cars where electronic ignition is not permitted, we keep a 'historic' version of the A-Series red distributor. This is equipped with high performance points and condenser.

We can also supply individual competition-grade external condensers, heavy duty rotor arms and distributor caps - all tested in strenuous race applications with top results. The competition condenser is physically much larger than the standard type and is particularly well suited to high rpm racing engines, where the standard units can fail prematurely.

Whilst upgrading the ignition system we would highly recommend installing a set of Magnecor HT leads. Magnecor's metallic inductance suppressed conductor will outlast the life of any engine. As such, these lead sets are not manufactured to be a frequent service item and are covered by a 10-year guarantee. These are available with black 7mm or blue 8mm diameter silicone insulation, numbered leads and high quality connectors and seals.

To make parts selection more straightforward, we can supply a complete ignition kit for road or race. This includes an Aldon Automotive electronic distributor, gold sports coil to suit and a set of Magnecor HT leads. Combine this with a set of new NGK spark plugs at service time and you'll have a complete high performance reliable ignition system.

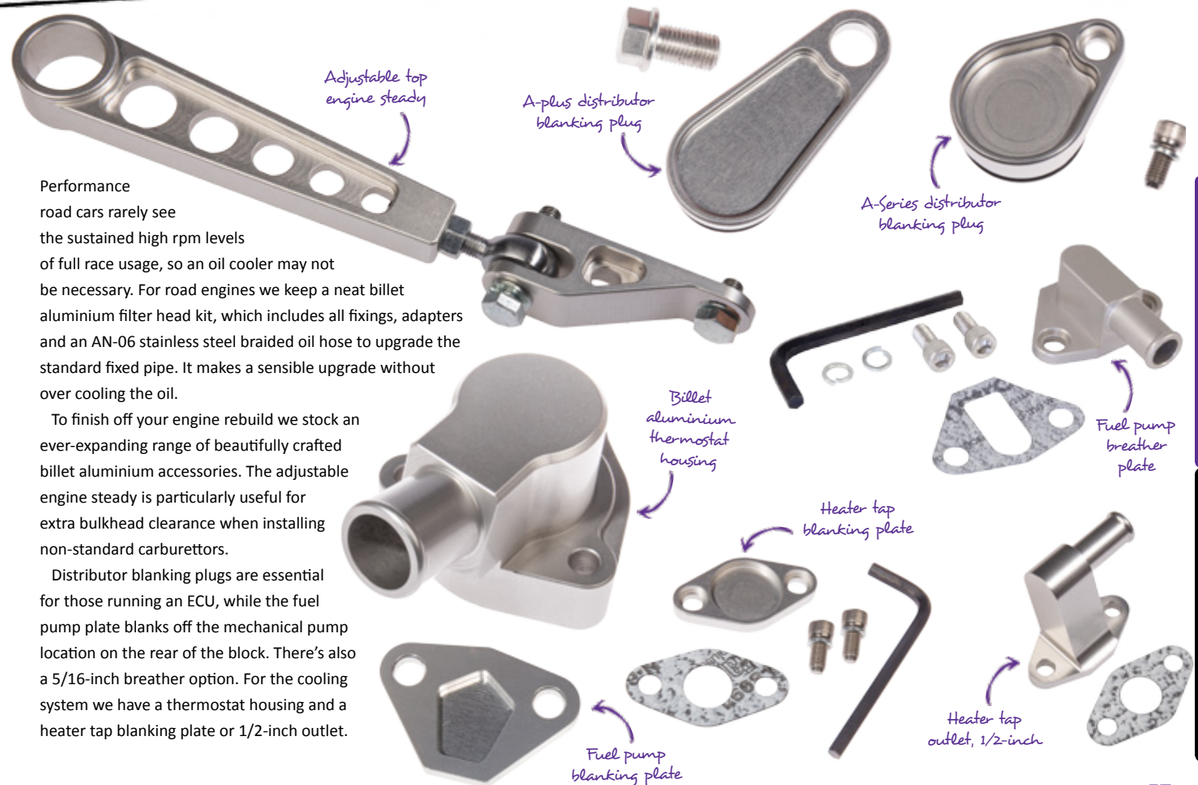
An efficient cooling system is essential for any high performance engine. We produce a wide range of cooling system components from thermostats to complete cooling solutions (right).

The MED racing coolant kit includes everything you need for a super-efficient cooling installation on a competition Mini. We can supply all parts of the kit separately if you do not need the full installation. The electric water pump conversion has been shown to give power gains of up to 5bhp with the mechanical pump removed.

Our radiators are made locally in the UK to extremely high standards and are the ultimate choice for any fast road or competition Mini. The classic hose kits are available for both 998 and 1275 Minis with a side-mounted radiator, with a vintage wrap effect. Please get in touch if you have any cooling system questions.

MED racing coolant kit

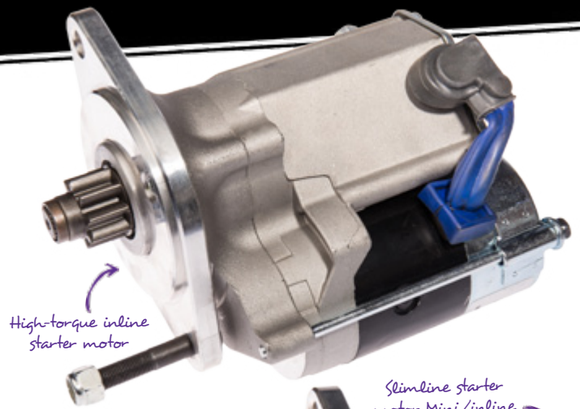
Setrab oil coolers are the most efficient on the market, made in Sweden and ideal for all competition engines. In testing on our historic 1293cc race engines we have found oil temperature reductions of up to 10-degrees C compared to the budget oil coolers. The MED Race Oil Cooler kit includes all you need to install the high quality Setrab cooler, including a high-flow billet aluminium filter head and nylon-braided AN-08 oil hoses. Alternatively we also keep 'budget' 13-row cooler kits with stainless steel braided hoses, to fit with the standard-fitment filter head. These kits are still an effective way to reduce oil temperatures on competition engines, but the Setrab kit is the ultimate solution!

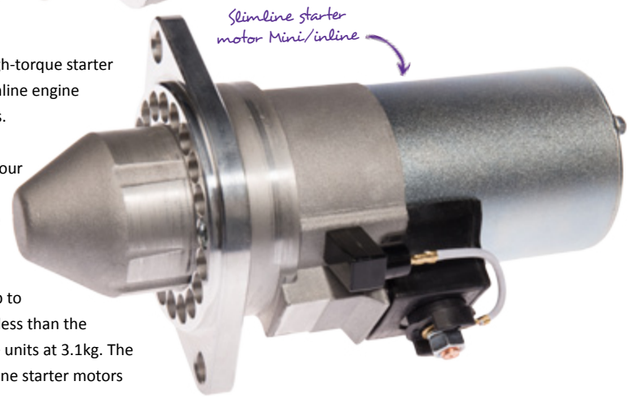


Performance road cars rarely see the sustained high rpm levels of full race usage, so an oil cooler may not be necessary. For road engines we keep a neat billet aluminium filter head kit, which includes all fixings, adapters and an AN-06 stainless steel braided oil hose to upgrade the standard fixed pipe. It makes a sensible upgrade without over cooling the oil.

To finish off your engine rebuild we stock an ever-expanding range of beautifully crafted billet aluminium accessories. The adjustable engine steady is particularly useful for extra bulkhead clearance when installing non-standard carburettors.

Distributor blanking plugs are essential for those running an ECU, while the fuel pump plate blanks off the mechanical pump location on the rear of the block. There's also a 5/16-inch breather option. For the cooling system we have a thermostat housing and a heater tap blanking plate or 1/2-inch outlet.



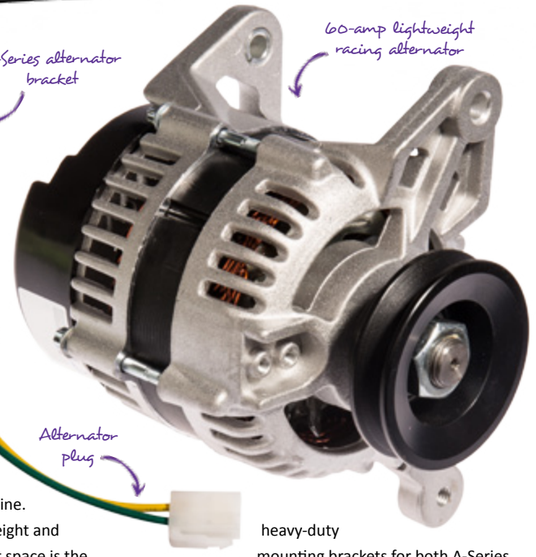


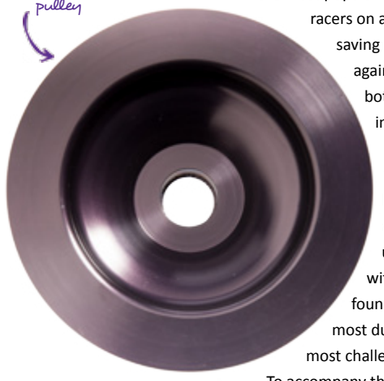
As engine performance increases, so does the demand on its ancillary components. We stock a range of competition starter motors and alternators that make an excellent upgrade for any high performance road or competition A-Series engines.

The high-torque Mini starter motor uses a gear reduction design to offer fast cranking speeds whilst drawing minimum current from the battery, starting the engine efficiently regardless of temperature. These characteristics make the high-torque units especially suitable for classics and competition cars where infrequent use demands a high performance starter motor.

The high-torque units are available for both pre-engaged flywheel ring gears and the earlier inertia type. We also supply a high-torque starter motor for inline engine applications.

The latest addition to our range are the slimline starter motors, weighing up to 20 percent less than the high-torque units at 3.1kg. The 1.6Kw slimline starter motors are most popular with racers on a weight saving mission, again available for both pre-engaged and inertia starters, plus inline.





To save yet more weight and free up under-bonnet space is the lightweight racing alternator. This is a direct replacement for the original units rather than a generic alternator with an adapter bolted on. We have found these 60-amp alternators to be the most durable on the market, coping with the most challenging race applications.

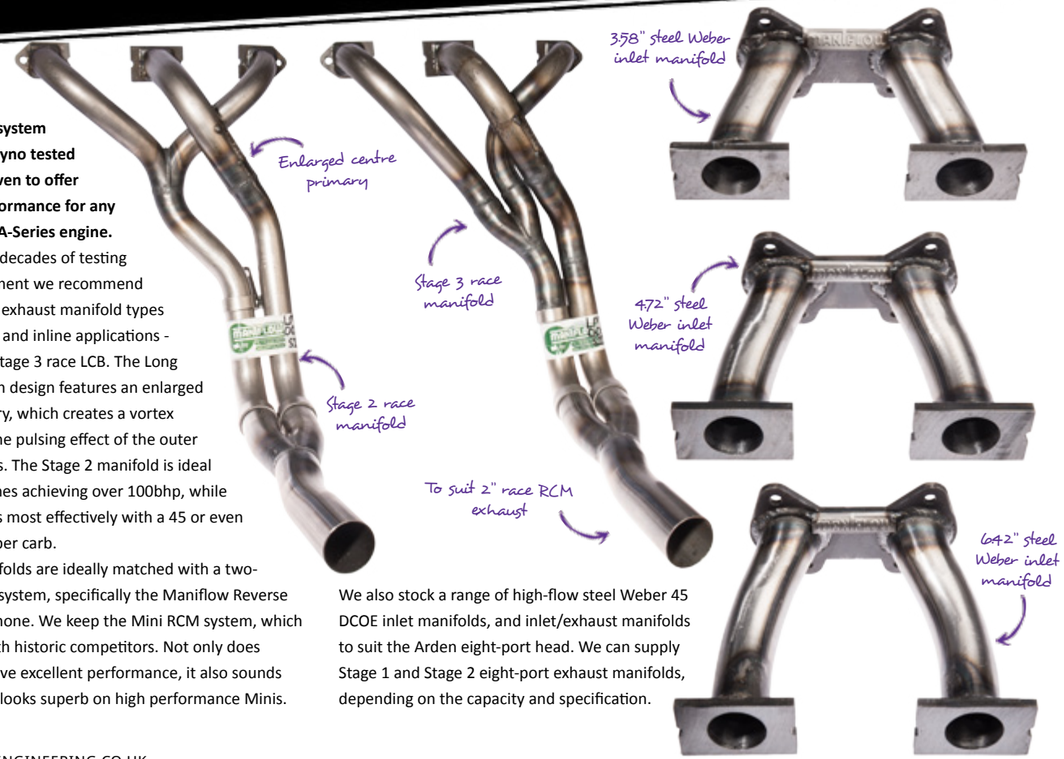
To accompany the alternators we produce our own heavy-duty mounting brackets for both A-Series and A-plus engines. The standard brackets can be a weak point, often cracking under more strenuous loads, so we would consider the uprated brackets a must for any race engine.

Another upgrade to consider is the 100mm MED alternator pulley. This avoids overcharging through excess shaft speed, slowing the internals down for improved reliability on high-rpm race engines.

Maniflow's racing inlet and exhaust system designs are dyno tested and race proven to offer the best performance for any competition A-Series engine.

After many decades of testing and development we recommend two different exhaust manifold types for both Mini and inline applications - Stage 2 and Stage 3 race LCB. The Long Centre Branch design features an enlarged centre primary, which creates a vortex to simulate the pulsing effect of the outer two primaries. The Stage 2 manifold is ideal for race engines achieving over 100bhp, while Stage 3 works most effectively with a 45 or even 48 DCOE Weber carb.

These manifolds are ideally matched with a two-inch exhaust system, specifically the Maniflow Reverse Cone Megaphone. We keep the Mini RCM system, which is popular with historic competitors. Not only does this system give excellent performance, it also sounds fantastic and looks superb on high performance Minis.



We also stock a range of high-flow steel Weber 45 DCOE inlet manifolds, and inlet/exhaust manifolds to suit the Arden eight-port head. We can supply Stage 1 and Stage 2 eight-port exhaust manifolds, depending on the capacity and specification.

Owning the most powerful engine on the grid could all be in vain if your car doesn't handle to its full potential, so we have developed a superb range of competition suspension components.

Developed over many seasons of circuit racing, Quantum dampers have proved to be the best single-way adjustable damper on the market. A single-clicker adjuster provides quick and easy adjustment of low-speed damping. The solitary adjuster has 24 positions and affects bleed across the piston in both compression and rebound, to keep adjustment straightforward. These no-compromise dampers are gas pressurised and fully serviceable.

We also stock both 'red' and 'yellow' compound rubber cones to uprate the soft standard types. These simple rising rate rubber springs are tried-and-tested to give even the most advanced coil-over setups a run for their money.

The MED lower arms are on-car adjustable for extremely precise front camber setup. They feature high quality Dunlop rod-ends and a durable black phoshate coating. Likewise, our unique design of heavy-duty front tie-rods allow you to perfect caster angle and further improve handling. Machined from EN24T steel billet, the taper beam design strengthens the tie-rod at the weakest point where it joins the tie-rod.

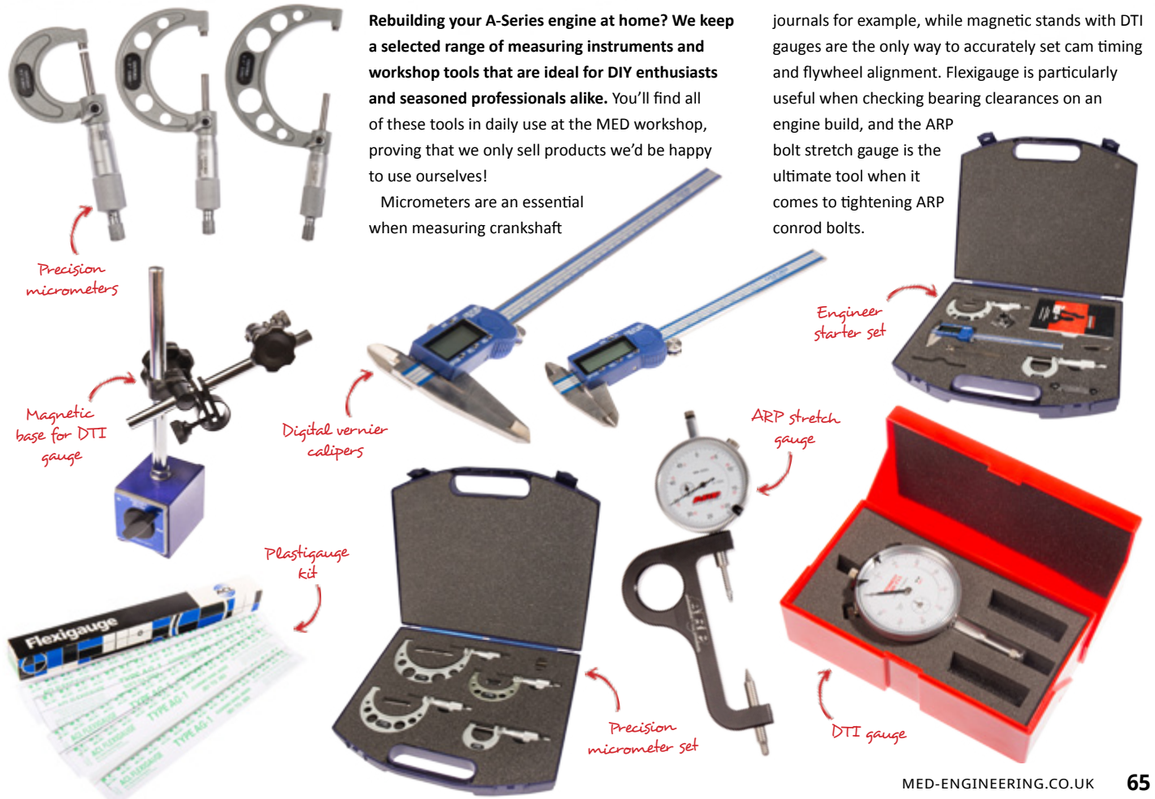
The MED height adjusters feature CNC-machined and anodised billet aluminium spring platforms with stainless steel adjusters and extension tubes for the rear radius arms. The overall diameter has been increased, giving the rubber cone more support, while a change in both draft angle and outer edge radius now gives a more even progression and overall strength.

Combine our dampers, rubber cones and adjustable ride height platforms with a set of adjustable tie-rods and lower arms for the ultimate competition setup. These have been tested to the extreme on circuit racers worldwide, with multiple wins already achieved in both the Mini Se7en and Miglia series.

To complement our range of motorsport-grade suspension components, we also stock lightweight racing wheels to suit both historic Minis and hillclimb/Mini Miglia.

The Rose Petal is a timeless classic, originally launched 10 years ago to replicate the original 1960s lightweight racing wheels. Available in 4.75x10-inch, this is a favourite with both road car owners and FIA Appendix K racers. It will fit without the need for wide arch extensions.

The MED Miglia wheel, on the other hand, is designed for more highly modified Minis. The 7x10-inch split-rim wheel is fully rebuildable, with a superb polished outer rim and CNC-machined billet aluminium centre with MED logo. These motorsport wheels are the perfect match for slick racing tyres but have been the finishing touch for many show-worthy customised Minis too.



Rebuilding your A-Series engine at home? We keep a selected range of measuring instruments and workshop tools that are ideal for DIY enthusiasts and seasoned professionals alike. You'll find all of these tools in daily use at the MED workshop, proving that we only sell products we'd be happy to use ourselves!

Micrometers are an essential when measuring crankshaft journals for example, while magnetic stands with DTI gauges are the only way to accurately set cam timing and flywheel alignment. Flexigauge is particularly useful when checking bearing clearances on an engine build, and the ARP bolt stretch gauge is the ultimate tool when it comes to tightening ARP conrod bolts.

Our bespoke breather system includes an under-wing catch tank, fixtures, fittings and a special vintage wrap effect silicone hose. The kit is designed for competition Minis, with the catch tank mounted neatly under the inner wing.

High performance A-Series engines tend to run higher crankcase pressure and benefit from larger breathers to avoid damage to oil seals and gaskets. This kit allows the engine to breath more effectively, catching any oily residue in the process. Most race circuits frown upon open breathers; in many cases an oil catch tank is mandatory.

The MED kit connects the transfer housing breather outlet to the rocker cover, then the rocker cover to the catch tank via a 25mm hose. Choose from a polished and engraved aluminium rocker cover or a powdercoated black steel type.

For fans of FIA Appendix K racing, the historic bullet mirrors are a high quality easily adjustable unit, as featured on our Works Mkl Mini. To complete the look, we produce laser-cut aluminium brackets for the doors, anodised in black or silver.

The MED fleece is made from 300gsm super anti-pill material to prevent any bobbling, the seams and hems twin needle stitched to give extra strength and durability. We wear these every day in the workshop but they're also ideal for keeping warm in the race paddock or at classic car shows. For summer is the MED rally T-Shirt, the printed design of a historic rally engine on twin split Weber carbs. Finally the MED polo shirt - a smart alternative with our logo professionally embroidered up front. Cut vinyl decal packs of our logo are available in various sizes too.

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