ARROW
PRECISION

at the heart of the world's most powerful engines.

Then to Now (and beyond)

Arrow Precision was set up by David Arnold in1974. He saw the need for a small, quality engineering company that could deliver an excellent product and give great service. Working in the heart of the British Motor Industry, it soon became clear that there was a need for competition connecting rods. David oversaw the development of an excellent product and soon customers were requesting other items. The company has gone from strength to strength, now producing many high quality race car components. The name of Arrow has become synonymous with a wide variety of motor racing success stories.

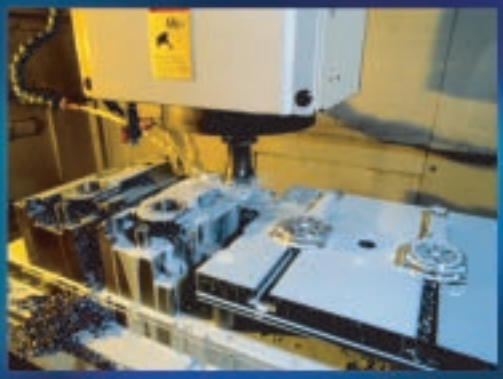
Ian Arnold, David's son, is moving the company forward, introducing new quality and production systems, purchasing new machinery and recruiting from one of the highest quality employee pools in the world. Turnover has trebled in the last six years, but Ian is still maintaining a firm grip on the companies founding principles, quality, service and cost.

Arrow Precision's future is firmly in the motorsport sector. Our experience with performance steel H and I section connecting rods has allowed us to develop ultra light titanium rods, one piece roller-bearing rods for use with split cranks and custom forged rods for cost effective production runs. Other stock products include nitride hardened cam followers, valve guides, flywheels, tappet shims, spring retainers and seats.

Family run, customer driven.

Arrow aim to forge a partnership with you, our client. This gives us a greater understanding of your needs and helps us create a product to match! You are continually pushing the boundaries of performance, and we can respond by using innovative production methods and a rolling development programme. We can help you stay ahead of the competition.

Come to us with existing rods or written spec, our design team will use the tensile and reciprocating load data to produce a comprehensive drawing of your connecting rod, including material specification and dimensions for your appraisal. Materials are sourced here in the UK. Nickel and chrome alloy steel is vacuum degassed (to ensure minimum inclusions) and from this, seven stock rod



forgings are produced. Every facet of the forging will be machined ensuring the removal of edges that are potential stress raisers. Each rod is rumbled and peened, further reducing potential weakness and giving the ultimate surface hardness and finish.

Commitment to quality

Adherence to ISO 9002 enables us to monitor materials and processes from beginning to end, guaranteeing a reliable, quality product. Arrow rods undergo thirty different machining operations with

continual recorded sample inspections. Our magnaflux unit tests each of our rods for flaws, and prior to despatch, a full sample inspection and 100% visual is undertaken. Connecting rods are most susceptible in the fastening system. Arrow Precision work closely with ARP to ensure correct bolt application. If used correctly (please see our hints and tips booklet) ARP fasteners will out-perform any bolt currently available in the world.

Arrow Precision manufacture components for World Rally, Le Mans, F3, Superbikes, Classic/Vintage, Touring car and many more. Our huge experience allows us to apply precision techniques in making a range of high quality automotive products and we have been privileged to manufacture for many of the major players in world motorsport. From 'custom' to production, from vintage to Le Mans, you need Arrow at the heart of your engines.

Standard Steel Rods

Steel connecting rods manufactured by Arrow Precision are anything but 'standard'. They will out-last those of the competition and out-perform them as well, representing excellent value for money. Arrow Precision Engineering designs strength in, and pays attention to the details, the only way to get a lightweight, robust rod and real quality. We manufacture from the highest quality steel, specified and purchased by us, from mills in the UK. Vacuum de-gassed nickel chrome alloy steel (Double-air-melt) has a very low sulphur content, .025%, which means fewer inclusions and faults. When forged, imperfections are reduced to an absolute minimum, ensuring excellent consistency in the seven standard forgings reaching our machine shop.

We can manufacture H beam and I beam section rods and are happy to talk to anyone with an interest in purchasing the best there is . . . . . Our steel rods have been successful in World Rally cars, Le Mans series, F3, Touring Cars, F3000 and used by British Luxury and Sports Car manufacturers.

Arrow. . . aimed at the heart of your engine.

- **Genuine High Quality**
- **Excellent Value**
- **Double air-melt steel**
- **Client Control**
- **Fully machined**
- **Hardened and Tempered**
- **Balanced End to End to within a Gram**
- **100% Magnaflux Tested**
- **Laser Etched**
- **ARP Fasteners**
- **6 Weeks Delivery**

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web: www.arrowprecision.co.uk
email: enquiries@arrowprecision.co.uk

Certificate No. 91356

MOTORSPORT INDUSTRY ASSOCIATION

Titanium Rods

Titanium connecting rods are a massive 30% lighter than their steel equivalent but just as strong, making them the ideal choice for an engine designer or builder going for minimum weight but maximum performance. These rods are aimed mainly at small, short stroke, high revving engines such as motorcycles. In general they need a higher level of maintenance than steel rods but are capable of withstanding incredible stresses and strains. The benefits can be enormous where every gram counts!

We can manufacture H beam and I beam section rods and are happy to talk to anyone with an interest in purchasing the best . . . . Our Titanium rods are used particularly in World and British Superbike Racing and most recently in the new Honda VTR1000 SP2. We have also manufactured rods for use in Kawasaki's, Yamaha's, Suzuki's,Ducati's and Norton's. But it's not just motorcycles we recently produced a set of four rods for a Hilman Imp!

Arrow. . . aimed at the heart of your engine.

- **30% Weight saving**
- **6AL-4V Titanium forgings**
- **Full client control**
- **Fully machined**
- **Thermal molybdenum coated**
- **Balanced end to end to within a gram**
- **Laser etched**
- **ARP fasteners**

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Classic & Vintage rods

Arrow's production of classic and vintage connecting rods is growing fast. Individuals & car/motorcycle clubs make use of our expertise and have us make their replica rods from our unique long forging which caters for any connecting rod application. Each component is treated with the same care and respect as our modern day race engine components.

As the owner of a vintage or classic car you will want control over the manufacturing process. Bring us a pattern or manufacturers original spec and we can produce a drawing, which will include material spec, any bushing requirements, special machining needs and of course dimensions and fastener types. A tensile and reciprocating load analysis will have been carried out and the design will be produced with the help of our unique CAD software. Once you have ensured the spec meets with your requirements and or the original specification of the vehicle, your order will be scheduled in our machine shop and a firm delivery date issued. Our planning engineer will then write the machine plan including the selection of raw materials. We manufacture from the highest quality steel, specified and purchased by us, from mills in the UK. Nickel chrome alloy steel (EN24) is forged; imperfections are reduced to an absolute minimum, ensuring excellent consistency in the seven standard forgings reaching our machine shop.

We can manufacture H beam and I beam section rods and are happy to talk to anyone with an interest in purchasing the best there is . . . Our steel rods are now performing beautifully in Bentley, Bugatti, Lagonda, Masaerati, Oldsmobile, Sunbeam, Healey, Alfa Romeo, Manx Norton, Porsche and many more. Whatever your vehicle we can make the rod for you.

Arrow. . . aimed at the heart of your engine.

- **Six Week Delivery**
- **Custom Orders**
- **EN24 Forged Steel**
- **Unique Long Forgings**
- **Fully machined**
- **Hardened and Tempered**
- **Balanced end to end**
- **100% Magnaflux Tested**
- **Laser Etched**
- **ARP Fasteners**

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Non Split or One-Piece Rods

We have been making 'One piece' or 'Non-split' connecting rods for clients using split crank applications since 1994. Great success has meant satisfied clients return time and again and in H or I section they represent excellent value for money. They will not only out-last those of the competition, but out-perform them as well!

There are two main types of non-split rod available, each requiring different materials and heat treatment processes. If your design has liners in the big end and a bronze floating small end, our standard En24 forgings will be used. For an unlined version carburised steel is required and the con rod is heat treated only in the necessary areas to 62 rockwell C. This design has greater benefits; it's; as strong as a lined rod but 20% lighter. All our rods are manufactured from forgings; imperfections are reduced to an absolute minimum, ensuring excellent consistency in the forgings reaching our machine shop.

We have produced many kinds of 'non-split' rod in both H and I beam sections, and would be pleased to talk to anyone with an application in mind. If you have any questions you would like to put to us or would like to talk about costings, don't hesitate to contact us at the number below.

Arrow. . . aimed at the heart of your engine.

- **Excellent value**
- **Full Client Input & Control**
- **Fully machined**
- **Tried and tested**
- **Balanced end to end**
- **100% Magnaflux tested**
- **Laser etched**
- **Six week delivery**

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MOTORSPORT INDUSTRY ASSOCIATION

Forged Rods

Arrow have the ability to produce high quality connecting rods in large numbers, and where cost is a consideration we would recommend our own forged type rods. We still use only the highest quality nickel chrome alloy steel (EN24). Forged rods are machined only in the critical areas, thus reducing the machining time and therefore the cost per unit.

These rods are specially forged for each application so production runs of over five hundred are recommended for this method of manufacture. Producers of high performance production cars and motorcycles use Arrow Precision forged rods. These rods can't be balanced and used at the top end of performance, but the material and dimensional accuracy is far above any other forged rod on the market. If you have a need for a high quality rod in a production line environment then talk to us first!

Arrow. . . aimed at the heart of your engine.

- **Genuine High Quality**
- **Forged EN24 Steel**
- **Full Client Control**
- **ARP Fasteners**
- **Made in England**
- **Bronze Bushes available**

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MOTORSPORT INDUSTRY ASSOCIATION

Cam Followers

Arrow Precision has been manufacturing cam followers for more than a decade. Our depth of experience and controlled manufacturing processes have ensured a product with an ever-growing reputation in the field of motor sport. We also offer a custom design service with a maximum turnaround time of six weeks.

We use only the highest quality steel; this is specified and controlled by Arrow, from mills in the UK. We have also made the decision to buy the whole years supply in one batch this has eliminated any inconsistencies in the product due to material deviation.

The Nitride heat treatment process offers several advantages over carburised treatments such as excellent levels of hardness and retainment of dimensional accuracy. The Nitrided component is resilient to softening and will retain its surface hardness up to temperatures of 500 degrees C, where on cooling the whole component will revert to its original hardness. These components are less easily heat damaged by temporary lubrication failure than their carburised counterpart. Nitride hardening improves fatigue strength and a mean hardness of 750-950 HV is achieved by using custom baskets allowing the component to be uniformly exposed to the process.

Arrow's cam followers are renowned for their durability and strength and are used in Le Mans series, World Rally, Touring Car, F3 and F3000 plus a host of others. If you would like to talk to us about your requirements don't hesitate to contact us at the number below.

Arrow. . . aimed at the heart of your engine.

- **Genuine High Quality**
- **Nitride Hardened**
- **High Dimensional Accuracy**
- **Material direct from the Mill**
- **Delivery on time**
- **Custom Orders**
- **Stock Items**

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MOTORSPORT INDUSTRY ASSOCIATION

Other products

- Genuine High Quality
- 30 years experience
- High Dimensional Accuracy
- ISO 9002 approved
- Delivery on time
- Attention to detail

Arrow Precision make a wide range of components for the motorsport industry. In the last 30 years they have gained an enviable reputation for innovation, reliability and cost effectiveness. Based on the knowledge gleaned over that thirty years our team of experienced engineers can problem-solve on your behalf and then apply dedicated manufacturing techniques to the production of various components. We have been privileged to manufacture for some of the leading engine builders in motorsport.

Why choose Arrow Precision components? Parts manufactured include valve guides, spring seats, retainers, shims and fly-wheels. Every item is treated with the same care and attention to detail as our connecting rods and cam followers. The in house laser etching facility allows us to identify components with your company logo or part numbers without harming the integrity of the item in any way. If you have a need for quality components manufactured to strict tolerances, and you have delivery times that must be achieved, then talk to Arrow.

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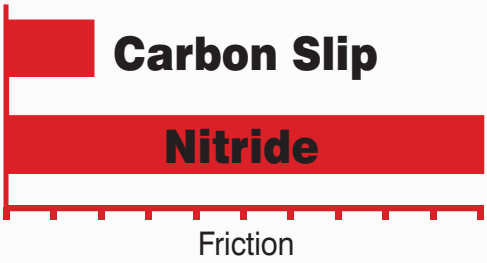
MOTORSPORT INDUSTRY ASSOCIATION

Carbon Slip Coating + Arrow Cam Followers

- Maximum resistance to wear
- Excellent load-bearing capacity
- Low coefficient of friction
- Greater reliability,
- Longevity and performance
- Cost effective



- Four times the friction with a standard Nitrided Cam Follower
- Constant 1100 Vickers with only a four micron thickness

Shown: Cam follower on the right is Carbon Slip coated

new for 2021

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MOTORSPORT INDUSTRY ASSOCIATION

Stock Connecting Rods

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Part Number	Description	B/E Dia	G/Pin Dia	Centres	B/E Width	S/E Width	Bolt Size	Qty in Set
Arrow 100*	Ford 4.826 Narrow Pin	52.900	13/16	122.580	23.670	23.670	3/8 UNF	4
Arrow 101*	Ford 4.826 Wide Pin	52.900	13/16"	122.580	26.900	26.900	3/8 UNF	4
Arrow 102*	Ford 4.926 Narrow Pin	52.900	13/16	125.120	23.670	23.670	3/8 UNF	4
Arrow 103*	Ford 4.926 Wide Pin	52.900	13/16	125.120	26.900	26.900	3/8 UNF	4
Arrow 104*	Ford 5.230 Narrow Pin	52.900	13/16"	132.842	23.670	23.670	3/8 UNF	4
Arrow 105*	Ford 5.230 Wide Pin	52.900	13/16"	132.842	26.900	26.900	3/8 UNF	4
Arrow 106	2Lt 1600 vauxhall	52.000	21.000	143.100	26.360	22.000	3/8 UNF	4
Arrow 107	Mini Cooper 1275	44.980	13/16	146.050	26.950	22.300	5/16 Waveloc	4
Arrow 108	Metro	48.150	13/16	146.050	26.200	22.200	5/16 Waveloc	4
Arrow 118*	Ford Pinto 5.0"	55.000	24.000	127.000	25.900	25.900	3/8 UNF	4
Arrow 119*	Ford Pinto 5.060"	24.000	24.000	128.525	25.900	25.900	3/8 UNF	4
Arrow 122	Clio 16 V	51.600	21.000	144.000	24.950	24.950	3/8 UNF	4
Arrow 125*	Ford 4.8 Narrow Pin	52.900	13/16"	121.920	23.670	23.670	3/8 UNF	4
Arrow 126*	Ford 4.8 Wide Pin	52.900	13/16"	121.920	26.900	26.900	3/8 UNF	4
Arrow 129	VW Golf 1.8	50.600	20.000	144.000	24.940	24.940	3/8 UNF	4
Arrow 132	Zetec	49.900	13/16	136.180	24.330	24.330	3/8 UNF	4
Arrow 133	DFV Short	52.900	15/16	132.800	22.000	24.300	3/8 UNF	8
Arrow 134	Vauxhall Corsa	46.000	18.000	129.750	21.875	18.000	5/16 UNF	4
Arrow 136	Peugeot 306	53.700	23.000	152.000	24.210	19.140	3/8 UNF	4
Arrow 137	6R4 Metro	53.970	7/8"	143.764	21.450	24.200	3/8 UNF	4
Arrow 138	Jaguar 3.8 / 4.2	56.720	7/8"	196.850	29.975	27.380	3/8 UNF	6
Arrow 145	RS 2000	53.900	13/16	149.250	25.660	21.040	3/8 UNF	4
Arrow 146	MGB 1800	51.340	13/16"	165.100	25.325	25.325	3/8 UNF	4
Arrow 147	Ford 1600 CVH	50.910	13/16"	132.000	24.300	24.300	3/8 UNF	4
Arrow 152	Climax 45 Degree	51.340	3/4"	120.650	25.300	22.200	3/8 UNF	4
Arrow 155	Peugeot 1.9 16v xu9	53.700	21.000	143.000	24.200	22.400	3/8 UNF	4
Arrow 156	Hillman Imp	44.980	11/16	104.725	25.180	24.000	5/16 UNF	4
Arrow 157*	Zetec Bushed	49.900	13/16	136.175	24.325	24.325	3/8 UNF	4
Arrow 158	TR3	56.725	7/8	158.675	29.825	26.840	3/8 UNF	4
Arrow 159	TR4	56.725	7/8	158.750	29.900	26.800	5/16 UNF	4
Arrow 160	TR6	51.340	13/16	146.050	22.760	22.760	5/16 UNF	6
Arrow 161	Subaru	55.000	23.000	130.450	21.400	21.400	3/8 UNF	4
Arrow 162	Mitsubishi	48.000	22.000	149.950	26.370	26.370	5/16 UNF	4
Arrow 163	Nissan GTI-R S220	51.000	22.000	136.250	22.750	22.750	3/8 UNF	4
Arrow 164	Rover K	51.680	18.000	133.100	22.500	15.000	5/16 UNF	4
Arrow 165	VW Golf 2.0Ltr	50.610	21.000	159.000	24.950	24.950	3/8 UNF	4
Arrow 166	Fiat Punto	48.638	22.000	128.500	25.425	25.425	3/8 UNF	4

A regularly up-dated list is available from our website at www.arrowprecision.co.uk

Rod Requirement Fax Form

Arrow Precision Engineering Ltd
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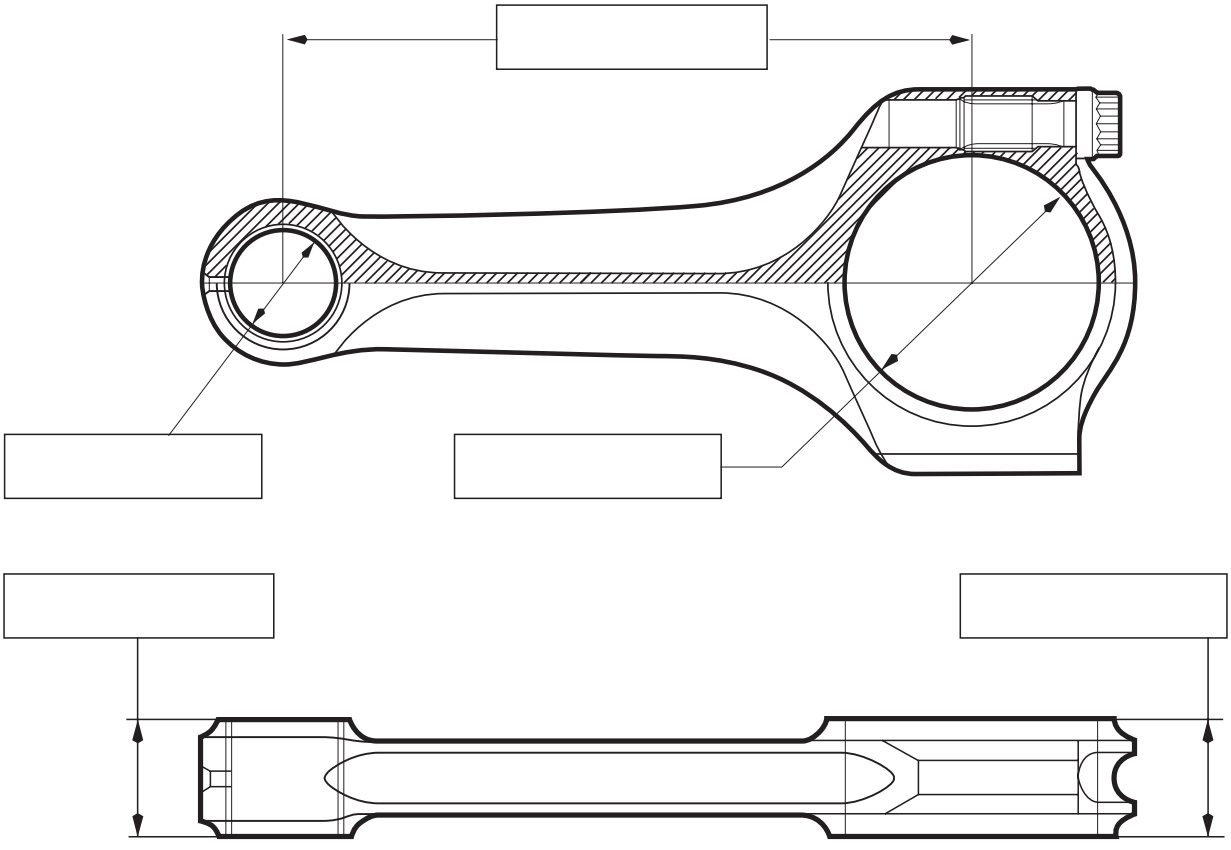
email: enquiries@arrowprecision.co.uk

Please fill in all the boxes to ensure we have the relevant information

Customer Name
Date
Contact number
Engine description
Number of cylinders
Stroke
Maximum rpm
Weight of Piston (Inc pin & rings)
Connecting rod centres
Shell type
Special Instructions



On completion please fax to Arrow Precision Engineering Ltd. on +44 (0)1455 233545

Stock Cam Followers

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Part Number	Description	Outside Diameter	Length	Stem Yes/No	Stem length or . .	. . . Pad Thickness	To Suit Bore
BDA-NS/104	Cam Follower	30.4600	22.830	No		4.390	1.12
BDA/101	Cam Follower	1.1995	0.900	Yes	0.744	23.670	1.2
BDG-WS/105	Cam Follower	31.7400	22.840	Yes	19.660	3.600	
BDG/103	Cam Follower	1.2496	0.900	No		1.168	1.25"
CF101	Toyota	27.9	21.615	Yes		3.56	28.0
CF102	Climax	38.09	26.67	No		5.59	1.500
CF107	Sierra Cosworth	34.9750	28.760	Yes	17.160		35
CF117	RS 2000	31.9800	27.000	Yes	14.500	3.000	32
CF120	BMW M3	37.4700	25.000	No		3.300	
CF124	Bristol	19.9700	45.000	No		10.300	20
CF125	Ferrari	32.9700	28.000	No		47.00	33
CF127	Opel Manta	36.9700	25.000	No		2.500	37
CF133	VW Audi 8V/16V	34.9700	26.300	Yes	14.700		35
CF134	Astra 16V	31.9700	26.100	Yes	14.900		32
CF135	BMW M3 16V	37.4700	27.940	No		4.500	
CF136	Peugeot 16V	34.97	28.76	Yes	12.8		35
CF137	Clio 16V	32.9700	26.100	Yes	14.000		33
CF138	Ford Zetec	28.3700	26.100	Yes	14.900		
CF139	Peugeot '97 Grp A	31.97	25.95	Yes	11.75		32
CF147	Peugeot MI 16	31.9700	26.100	Yes	12.800		32
CF148	Suzuki Swift 16V	30.9700	24.500	Yes	14.500		31
CF151	Mazda 16V	29.9700	25.000	Yes	16 000	3.000	30
CF155	Kawasaki	32.97	24.54	Yes		2.5	33
CF160	Mini	20.6100	33.000	No			(3/16)
CF162	Sierra Cosworth	1.3769	1.035	No		0.134	35
CF163	Suzuki Swift 16V Ext	30.97	24.5	Yes	16.5		31
CF164	VW Golf 8V/16V	36.9800	26.300	No		3.900	37
CF165	Renault 2.0 V6 F2	29.97	22.5	No		4.0	30
CF177	VW audi 8V/16V	34.9700	26.300	No		3.900	35
CF179	Audi A4 20V	23.97	24.2	Yes	19		24.0
CF181	Toyota MR2 Corolla	30.97	26.5	No		5.0	31
CF191	Lotus Twin Cam	1.3750	0.876	No		0.255	1 3/8
CF201	6R4 Metro	36.48	23	No		4.27	36.5
CF203	Audi A6 (2.8 ltr V6)	33.47	25.8	Yes	19		33.5
CF212	BMW M12	36.98	25	No		3.3	37
CF219	PSA 1.6L 16v Kit Car	28.36	32.5	Yes	16.4	3.00	28.40
CF221	Dolomite Sprint	33.38	27.00	No			
CF223	BMW M3 16V	37.47	27.94	No		6.0	37.5
CF233	Lotus Twin Cam O/S	34.97	22.23	No		5.72	35

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Cam Follower Requirement Fax Form

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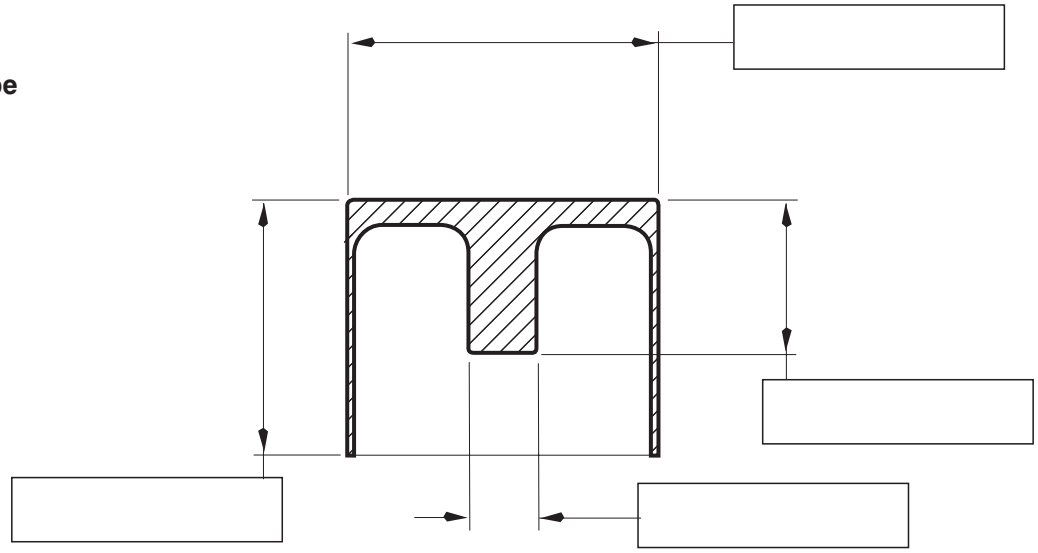
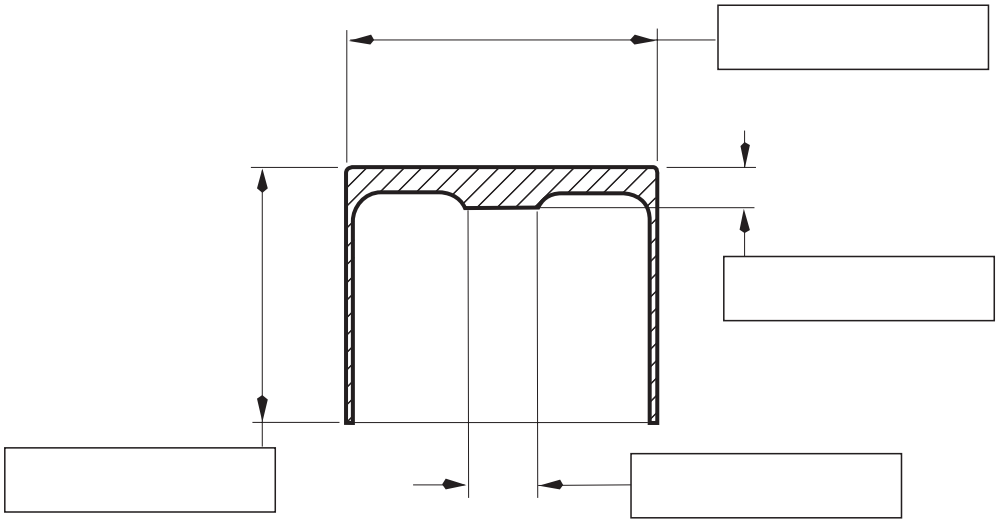
Please fill in all the boxes to ensure we have all the relevant information

Customer Name	
Date	
Contact number	
Engine description	
Number of Valves	
Type of Cam Follower	**Pad Type** ☐ **Stem Type** ☐
Special Instructions	

Stem Type



Pad Type



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Connecting Rod Production

Arrow Precision manufacture components of exceptional quality in an industry known for its exacting standards. Those components will out-last those of the competition and out-perform them as well, representing excellent value for money. Arrow Precision Engineering designs strength in, and pays attention to the details, the only way to get a lightweight, robust rod and real quality.

We manufacture from the highest quality steel, specified and purchased by us, from mills in the UK. Vacuum de-gassed nickel chrome alloy steel (Double-air-melt) has a very low sulphur content, .025%, which means fewer inclusions and faults. When forged, imperfections are reduced to an absolute minimum, ensuring excellent consistency in the seven standard forgings reaching our machine shop.

Before the machining process can begin a detailed drawing of the connecting rod is sent out for your approval. A tensile and reciprocating load analysis will have been carried out and the design produced with the help of our unique CAD programme, drawing details include material spec, bushing requirements, special machining needs and of course dimensions and fastener types. Once you have ensured the spec meets with your requirements, your order will be scheduled in our machine shop and a firm delivery given and achieved. Our engineer will then write the machine plan including the selection of raw materials.

From as few as one to hundreds of quality rods can be produced using flexible manufacturing lines and unique processes.

During production all facets of the forgings are machined to ensure symmetry and balance, but also to remove any potential flaws. Having been split, the big end is then torqued up using slave bolts. We work closely with our fastener supplier ARP, to ensure the correct bolt is selected for each design, and point out the importance of attaining correct stretch in each fastener (Please see our hints and tips booklet).

Once the CNC operations are completed,the rod is rumbled and peened to ensure uniformity of finish and surface hardness, the correct bolts are then fitted. The rods are finish ground and balanced end to end, to within a gram.

On each operation a recorded sample inspection is carried out. Our magnaflux crack detection unit will test all our rods in our specially constructed dark room. Prior to despatch a full sample inspection and 100% visual will be processed. The adherence to ISO 9002 enables us to monitor all materials and processes from beginning to end, guaranteeing an excellent product.

Finally and uniquely, every rod produced is laser etched with the company logo, but more importantly, a date of manufacture, a part designation and a set number. Many manufacturers mark their products with a stamp, not only can this be hard to read and can also harm the integrity of the item. Just another reason to buy Arrow Precision.

We can manufacture H beam and I beam section rods and are happy to talk to anyone with an interest in purchasing the best there is . . . . . Our steel rods have been successful in World Rally cars, Le Mans series, F3, Touring Cars, F3000 and used by British Luxury and Sports Car manufacturers.

Arrow. . . aimed at the heart of your engine.

- **Genuine High Quality**
- **Excellent Value**
- **Double air-melt steel**
- **Client Control**
- **Fully machined**
- **Hardened and Tempered**
- **Balanced End to End to within a Gram**
- **100% Magnaflux Tested**
- **Laser Etched**
- **ARP Fasteners**
- **6 Weeks Delivery**

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MOTORSPORT INDUSTRY ASSOCIATION

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