

ON THE ROUGH

THE OFF-ROAD M... WITHIN A MAGAZINE

LITTLEBIG'UNS

As the trend for world championship trials bikes moves towards smaller machinery we take a look at four 150-250cc contenders. Test by *Charlie Harris* and *Rick Kemp*. Photos by *Tim Leighton-Boyce*.

Up to 200cc trials bikes are the in-betweeners, ridden by schoolboys and experts alike. So to some extent they could be considered to have a longer life than most other capacities. A B-class schoolboy can keep his mount through A-class and when he moves up to adult competition, he'll still have a competitive machine, providing there have been no astounding developments in the meantime. And the way things are going at the moment, these smaller

capacity bikes could oust the biggies as the choice of champions.

Our test quartet provides a good cross-section, the Honda TL200E for four-stroke fans, the good 'ol Yam TY 175 for a cheap start that you can ride to work as well, and a couple of representatives from Europe in the Fantic 200 and Bultaco 175.

HONDA TL200E

The Honda is built in this country by Colin Seeley

• HONDA TL200E • YAMAHA TY175 • FANTIC TRIAL 200 • BULTACO 175 •



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International, the engines being supplied by RSC in Japan and built specially for trials. The starting point is the XL185S motor and from the outside it looks standard, except that the decompressor cable is missing. On the inside, however, it's a different story. Displacement is now 197.7cc, achieved by increasing the bore size from 63 to 66mm, the stroke remaining at 57.8mm. There's a heavier crank flywheel to match and the camshaft has been changed. A new piston provides a lower 8.3 to 1 compression ratio.

Other changes include a tougher clutch and a special six speed gearbox. These motors are hand built to much tighter tolerances than would be found on a production machine and the outcome of it all is different power and torque characteristics, 12bhp at 6,000rpm and 14lb-ft at 4,500 where the stock XL produces 16bhp at 8,000 rpm and 10.8 lb-ft at 6,500rpm. So the overall effect is less power and more torque at the bottom end.

The frame is designed and built by Seeley's from Reynolds 531 tubing with a square section downtube. The fork is a leading axle Marzocchi unit and the rear end is supported by Girling gas dampers.

The frame geometry was originally based on a Bultaco steering-head angle and wheelbase, but after some development testing the swing arm was shortened. The only major design problem was getting a fairly tall wet sump motor in and keeping the seat height low. The result is a respectable 29½ inch seat height with the top of the motor and most of the carburettor disappearing up under the tank which itself rises steeply from the seat to the steering head. The rest of the package includes a very smart chrome exhaust system, not so smart VF mudguards, Renthal bars and the now almost mandatory Pirelli tyres.

The Honda's riding position is good, with the footrests slung right back just in front of the rear wheel rim. This affords maximum control when picking up the front wheel. Starting obviously requires more effort than the





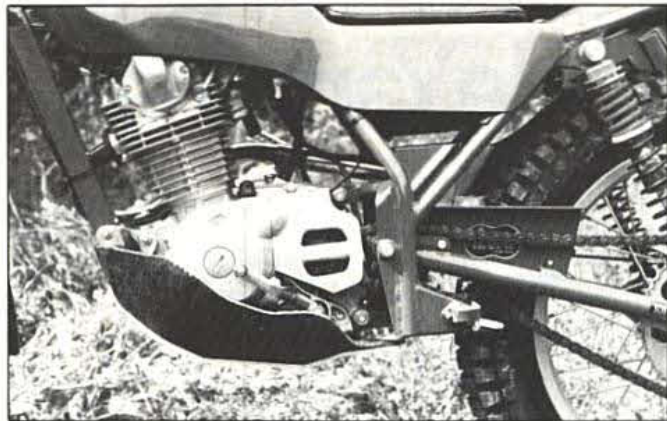
two strokes, particularly as the decompressor is no longer connected. It fires quickly enough with the CDI ignition but it needs full choke until the motor is really warm. The stronger clutch has a heavier, lightly grabby action compared to the standard model but as you only need to use it when starting the bike in gear it's not too much of a problem. Gear selection on the test bike was a bit stiff, but the bike was new, so this would probably ease up with a few more miles. The ratios

seem well chosen – well, the first four anyway, the top two really being road gears which we didn't have a chance to try.

Once you've started coming to grips with chucking the Honda about, one thing niggles – the rear brake. The lever is placed very close to the kick-start shaft and if you bend it out it gets in the way of obstacles. The brake is the standard Honda unit turned round so the operating arm is up with the pivot in front of the wheel spindle and it's fairly ineffective. The front brake is good, though, and as it's a four stroke it can just get by with its poor back brake. Another moan concerns the throttle cable which we had to tape into the twist grip because it kept falling out.

The steering and general feel, as you'd imagine, is similar to the Buftaco, which means good. Being a four-stroke it requires a different riding technique, particularly in tight turns. At very low engine revs you can feel the power strokes, making full lock turns rather jerky and, with a hot engine, if you wind it on at the wrong time you run the risk of stalling. This problem is inherent to four strokes and is amplified by poor carburation. RSC in





The Honda comes with glass fibre engine shield as well as alloy sump plate.



Rear brake is a bit close to kick start shaft.



Front brake is good and speedo drive is adapted from the XL.

Japan are experimenting with different carbs but they haven't got it licked yet. The Honda puts out more torque at lower revs than the others, as you might expect, so it's good for blasting up climbs with little or no run in. You need the right gear, though, because if you spin out it's hard to get grip back again. Doubtless an experienced thumper pilot would disagree, but without the likes of Lejeune or Hatori to demonstrate the technique, those of us used to two strokes can easily come to grief. In all other respects, though, Messrs Harris and Boniface could coax the Honda through gravity-defying sections with the same ease as any of the two strokes.

Ground clearance is now slightly less than it used to

be, due to the addition of a glass fibre engine shield, but the existing 11½ inches is enough to cope with most things.

At £1,280, the Honda reflects its hand built origins and is basically a good machine let down only by details, some of which might be rectified in the future. Japan supplied five 250 motors, two of which were used in the Scottish Six Days, but these were just experimental and won't ever reach the production stage. It does, however, indicate their commitment to the sport so we can hope for better things in the future.

BULTACO 175

Bultaco's 175 looks slightly old-fashioned alongside the others, mainly because of the longer, more rounded petrol tank. In fact it's only a year since its introduction. The 175 is built for the British market only and, as Bultaco are a relatively small company, experiencing financial problems like the rest of European industry, they haven't built a totally new machine. Based on the 238cc Sherpa of two years ago, it shares the same frame and bottom half of the engine. The bore has been reduced to 60.9mm so, together with the old stroke of 60mm, the almost-square motor displaces 174.7cc. The specification also includes a 22mm Amal carburettor and contact breaker ignition.

The Bully motor is showing its age by being the only one to have chain primary drive, but in all other respects it's at no disadvantage, except that in terms of development it can't go any further. The factory expects to have a new

engine ready for next year which will be more like the motocross unit.

The frame has a single downtube with a duplex engine cradle suspended by Betor units front and back. The forks are designed by Betor but built by Bultaco. Bultaco have set handling standards for trials bikes for some time and, in this case, it comes from a 51¼ inch wheelbase with a seat height of 30 inches, the frame giving 12 inches of ground clearance. Efforts have been made to keep the weight down, particularly with the wheels which have chrome-lined hubs, but at 200lb dry it's not comparatively light.

The Bully has a high-mounted left-hand kick start, which is rather awkward to use but, having said that, Mr Boniface did manage to stall the bike, find neutral and start it again without putting his feet down (he does ride them all the time so he's allowed to be a bit flash). The motor runs very smoothly and picks up quickly, indicating good torque characteristics, but unfortunately no figures are available. The Sherpa accelerates well, making it easy to charge through sections if that's your way.

Power is always controllable and is transmitted to the turf by way of Pirelli tyres. Our test bike had competed in a few events so everything was bedded in. While this may have benefited the motor, however, the clutch and brakes didn't feel at their best. The clutch was difficult to feed out smoothly and the brakes were a bit harsh. The chromed hubs need looking after as, once they get scored or pitted, there's no option but replacement. As you'd

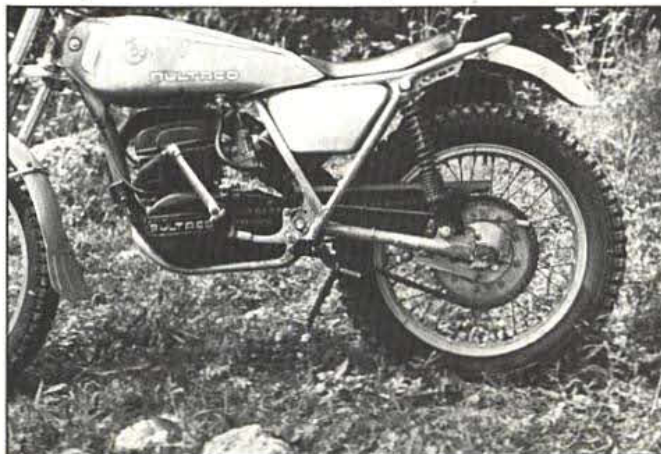
imagine with years of development, Bultaco have got the handling pretty well sorted, the sole criticism being that the steering is on the slow side. Fitting longer rear units has the effect of altering the head angle, a mod often carried out by riders to make the steering quicker, while moving the footrests further back allows the rider more scope for lifting the front end.

The best feature of the Bully is its gearbox — changes are very positive and you can always find the next gear with or without the clutch. It may be due to the fact that it's only got five ratios, so the box isn't overcrowded, but it's a joy to use. Of the five gears, only the first four can be used in anger, top being a road gear. Even so, the engine's power spread can cope,



The Bully's fork works well and the brake has a chromed alloy hub.

The motor is a bit dated but competitive in the right hands.



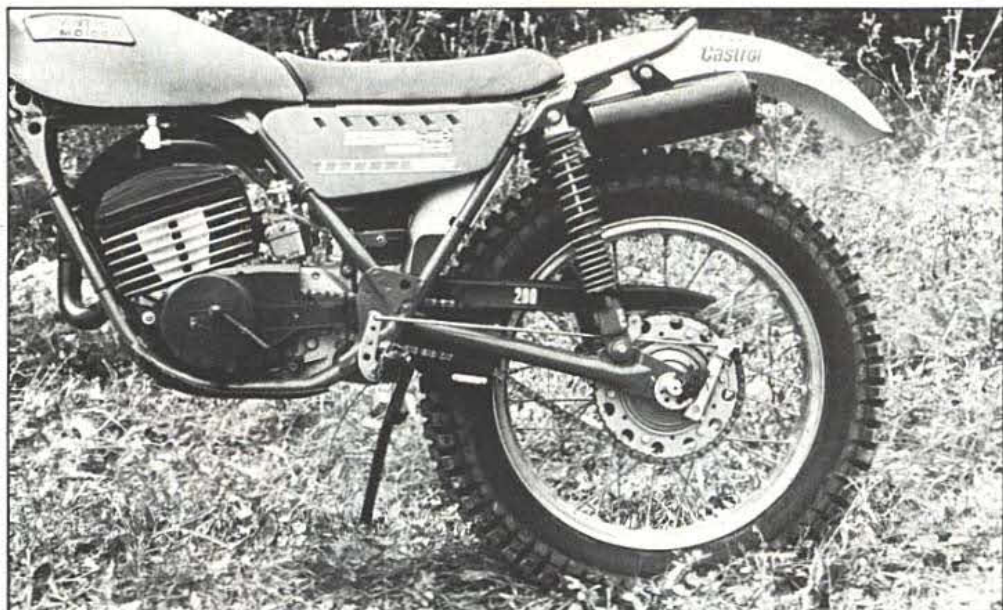
Although the 175 Sherpa is only a year old, it's nonetheless an underpowered 238 and, while enjoying some success in the hands of experienced riders, it and the rest of the range could do with a shot in the arm. Still, at £849 nobody can deny it's good value for money.

FANTIC TRIAL 200

Fantic are the newest Italian factory offering trials machinery. They're at present heading the new wave of European competition that's taking the British scene by storm, shortly to be followed by Italjet. They've come a long way from 50cc choppers and step-thrus in a short time and though the machinery they're offering comes in small capacities, power output isn't far short of the big stuff, the 200 developing 14.5 bhp. The Fantic is a tall bike – 13 inches of ground clearance – which reflects the type of sections they have on the continent, akin to riding up the Giant's Causeway with trick turns at the top.

The Trial 200 has only been available for just over three months in its present form, following the change to larger chain and sprockets. The route they've taken with the engine is to give it bags of power and then tame it with a heavy flywheel, the results being pretty impressive, all the more so when you realise the displacement is only just 156.9cc! Bore and stroke is 62 x 52mm, maximum power produced at 5,750 rpm and 13.6 lb - ft of torque at 5,500 rpm. Looking at the figures, you'd imagine the motor to be very peaky, but not so: the flywheel does its job well without killing bottom-end power. Engine design follows the conventional piston port pattern, but according to official Fantic sources they've their own radical ideas on port shapes and the use of materials, which is how they seem to get more power from fewer cubes. A relatively large 25mm Dellorto carb is used, yet neither this nor the high output made the Fantic any thirstier than the other. Fantic use Bosch electronic ignition which fired the mixture under all conditions.

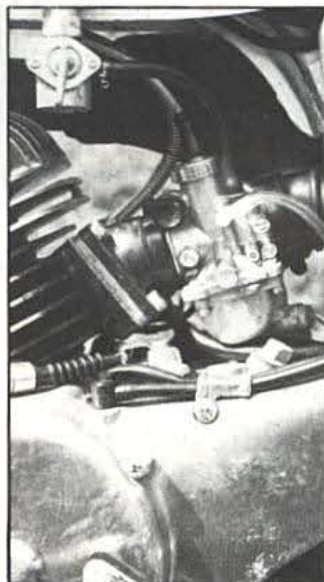
The Fantic has a full



The Fantic is high in stature and high on grip thanks to the Betor shocks and new Pirelli tyres.



The front end is Marzocchi but Fantic alter the damping.



The Yam is the only one to use a reed valve and oil injection.

The back end of the Yam is too soft and the Dunlop doesn't grip like the Pirelli.



duplex cradle frame, heavily gusseted round the steering head and swing arm pivot, finished in red to match the one gallon plastic tank and side panels. The front fork is by Marzocchi but Fantic alter the damping to suit and the rear end is held up by Betor units with five positions of preload adjustment. A nice touch is the matching rear sprocket and chain and the Regina chain has gold side plates. At 51½ inches, the Fantic's wheelbase is the longest, but it's in proportion with a seat height of 31½ inches. This is another pointer to the way things are moving: full sized bikes but smaller motors.

The Dellorto carb has the standard flick-on-flick-off choke so, thankfully, the motor warms up quickly. Everything about the Fantic feels light – clutch, brakes, throttle and steering. This could make it a difficult bike for the novice to ride – the fast steering, particularly, could cause some trouble. But, for an expert, it's a very useful machine. Harris was waxing lyrical about it being an extension of his thought processes – you think about it and the bike does it.

It's remarkable the way this little motor spins from low revs, like a turbine. There's a slight surge of power at about three quarter throttle but it isn't fierce and, once you know it's there, you can easily take it into account. Even though it's relatively high, the Fantic is well balanced and feels less than its 191lbs weight.



league as the others, though, having remained virtually the same for the last five years. But its one great virtue is as a beginners' bike. It comes complete with lights and a 12 month factory warranty, so it's about the only trials bike you'll see in regular use on the road and green lanes. At £740 it's also the only trials bike that represents value for money in trial bike terms. Don't be put off by its tame exterior, though, you can still be club champion with one.

The Yam's motor has always been one of its strong points. It's virtually unburnst-able and will run for ages without attention. Two

aspects make it different from the rest: reed valve induction and Autolube. The latter may be cause for concern to some, but if you're *that* worried, it's a simple task to remove the whole thing and run on premix. The motor displaces 171cc with its 66 x 50mm bore and stroke and, running on a 5 to 1 compression, it produces 12 bhp at 7,000 rpm and a modest 12 lb ft of torque at 6,000 rpm, but the reed valve helps the bottom end power. The juice is supplied by a 22mm Mikuni carb and ignition is by coil and breakers. The six-speed gearbox is driven via a wet multiplate clutch.

The TY uses a duplex cradle frame which is more than enough for the job. Its forks are Yamaha's own and, while being tough enough, have little in the way of rebound damping. The rear units are Kayaba with five spring preload positions which are on the lightweight side. The TY is a small machine with a 49.8 inch wheelbase and a 29 inch seat height but it still manages just under 12 inches of ground clearance.

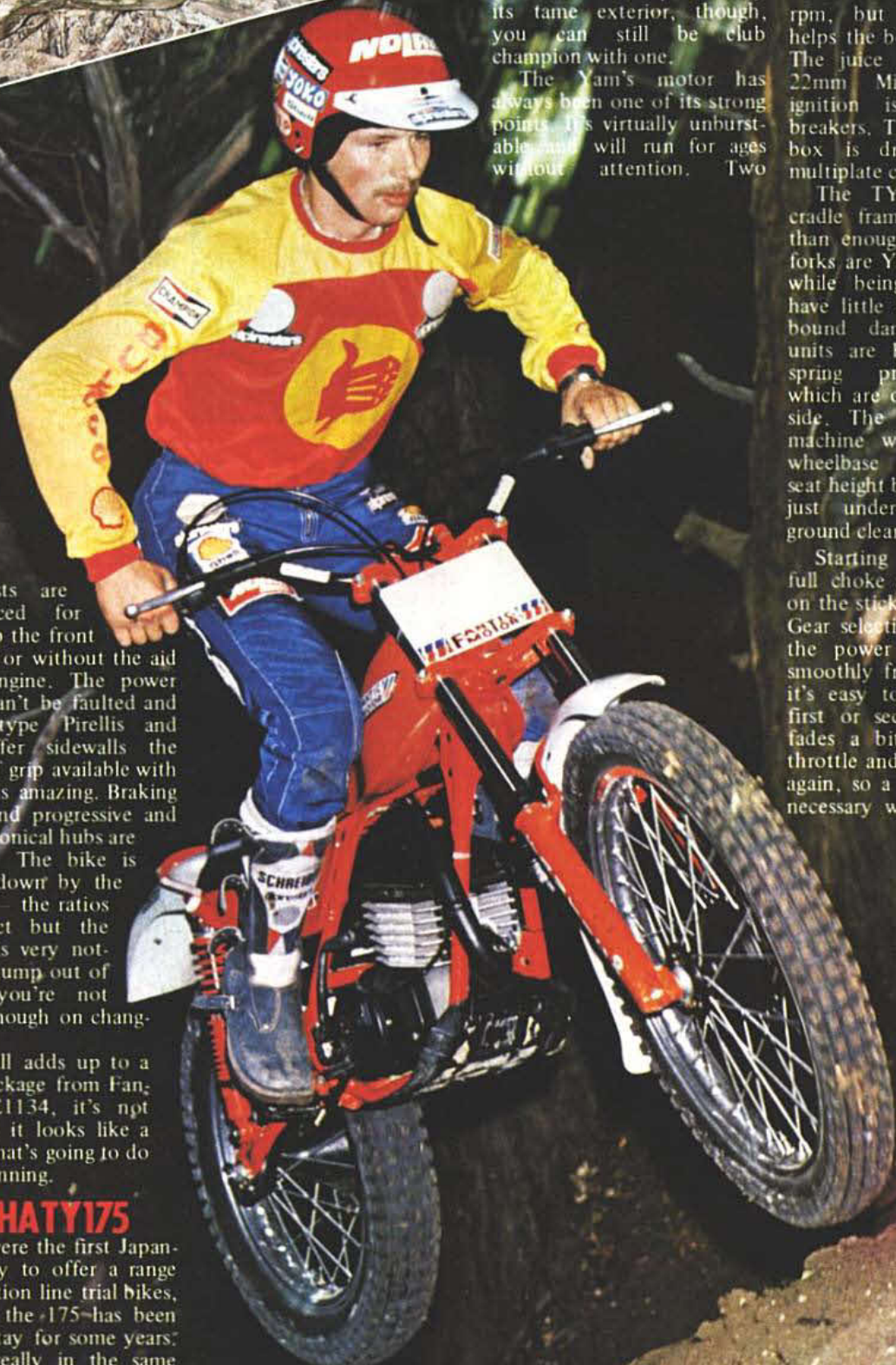
Starting is no problem: full choke and a quick prod on the stick and you're away. Gear selection is positive and the power comes in quite smoothly from low down so it's easy to trickle along in first or second. The power fades a bit at around half throttle and then comes back again, so a bit of thought is necessary when selecting the

Footrests are well placed for picking up the front end, with or without the aid of the engine. The power delivery can't be faulted and with 'C' type Pirellis and their stiffer sidewalls the amount of grip available with this bike is amazing. Braking is good and progressive and the alloy conical hubs are light too. The bike is only let down by the gear box - the ratios are perfect but the selection is very notchy. It'll jump out of gear if you're not positive enough on changes.

So it all adds up to a potent package from Fantic. At £1134, it's not cheap but it looks like a machine that's going to do a lot of winning.

YAMAHA TY175

Yamaha were the first Japanese factory to offer a range of production line trial bikes, of which the 175 has been the mainstay for some years. It's not really in the same



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Honda looks pretty, but is let down by details.



You can't beat the Yam on price.

right gear for the job. Here again the choice is really limited to four, the top two being too tall to be of much use off road. The suspension is definitely showing its age, though – if you lift the front end there's a resounding clang as the forks top out. The back end's rather soft, too. In comparison, the Yam is shorter, so the rider needs to shift his weight around, especially to keep the front down on long climbs.

The tyres fitted are Japanese Dunlops which lack the grip of the Pirellis. We also experienced two compression punctures with the rear wheel. Where the Yam *does* score is in the braking department: it's still got the best stoppers in the business. The brake plates have double ridges around the edge that keep



The Sherpa is a good performer for the price.

most of the dirt out and, if water does get in, it soon drains out again.

As a beginners' bike the Yamaha TY175 has no rivals. It's cheap, it will do more than one job and, if you decide trials is not for you after all, there's always a

market for a good second-hand TY.

CONCLUSIONS

The Fantic's expensive but reflects the state-of-the-art in the world championships at the moment with its small, high-performance engine and

very precise handling. If you're within spitting distance of the big time then this is the machine to have. The Honda's the most expensive, mainly because it's hand built in small quantities. If it's a four stroke you're after then it's the only game in town. It can certainly do the job but it's let down over details like the poor rear brake and poor carburation. The Bultaco's good value and in the right hands is still competitive but a bit overweight. The motor's rather dated. The Yamaha's the ideal bike for the novice and, being so well equipped, represents outstanding value; should you decide to stick with it, John Shirt supplies frame kits and other mods to make it more competitive.

	HONDA TL200E	YAMAHA TY175	FANTIC TRIAL 200	BULTACO SHERPA 175
Price inc VAT:	£1280	£740	£1134	£849
Warranty:	Sale of Goods Act	12 months unlimited	Sale of Goods Act	Sale of Goods Act
Engine:	Ohc single	Reed valve 2-stroke single	2-stroke single	2-stroke single
Capacity:	197cc (66x57.8mm)	171cc (66x50mm)	156.9cc (62x52mm)	174.7cc (60.9x60mm)
Lubrication:	Wet sump	Autolube	Petrol	Petrol
Comp. ratio:	8.3 to 1	5.8 to 1 (corrected)	10.5 to 1	10 to 1
Carburetion:	22mm Keihin	22mm Mikuni	25mm Dellorto	25mm Amal
Ignition:	Capacitor discharge	Magneto	Bosch electronic	Magneto
Max power:	12.1bhp at 6000rpm	12bhp at 7000rpm	14.5bhp at 5,750rpm	n/a
Max torque:	14.3lb-ft at 4500rpm	10lb-ft at 6000rpm	13.6lb-ft at 5,500rpm	n/a
Primary drive:	Gear	Gear	Gear	Chain
Clutch:	Wet multiplate	Wet multiplate	Wet multiplate	Wet multiplate
Gearbox:	6 speed	6 speed	6 speed	5 speed
Final drive:	5/8x1/4in chain	1/2x5/16in	1/2x5/16in chain	5/8x1/4in chain
Fuel capacity:	7.5 pints	1 gallon	1 gallon	1.1 gallons
Electrics:	none	6v 4ah battery, headlamp, tail-lamp	6v 35w alternator, optional headlamp	none
Frame:	Single downtube	Duplex cradle	Duplex cradle	Single down tube
Suspension:	Marzocchi leading axle fork (f) Swing arm with Girling units (r)	Telescopic fork (f) Swing arm with 5-pos preload Kayaba units (r)	Leading axle telescopic fork (f) Swing arm with 5-pos preload Betor units (r)	Leading axle telescopic fork (f) Swing arm with 5-pos preload Betor units (r)
Brakes:	Drum/drum	Drum/drum	Drum/drum	Drum/drum
Tyres:	Pirelli trials 2.75x21 (f) 4.00x18 (r)	Dunlop trials 2.75x21 (f) 4.00x18 (r)	Pirelli trials 2.75x21 (f) 4.00x18 (r)	Pirelli trials 2.75x21 (f) 4.00x18 (r)
DIMENSIONS:				
Wheelbase:	50.5ins	49.8ins	51.5ins	51.5ins
Seat height:	29.7ins	29ins	31 1/2ins	30ins
Handlebar width:	33ins	32.5ins	33ins	33ins
Ground clearance:	12ins	11 1/2ins	13ins	12ins
Dry weight:	182lb	178lb	191lb	195lb
Manufacturer:	Colin Seeley International, 2-12 Maxim Rd., West Street, Erith, Kent	Mitsui Machinery Sales, Oakcroft Road, Chessington, Surrey	Barron Eurotrade Ltd., High St., Hornchurch, Essex	Comerfords Ltd., Portsmouth Rd., Thames Ditton, Surrey