P&M

THE PERFECTED MOTORCYCLE

New Models for 1930

PRELIMINARY LIST

PHELON & MOORE LTD.

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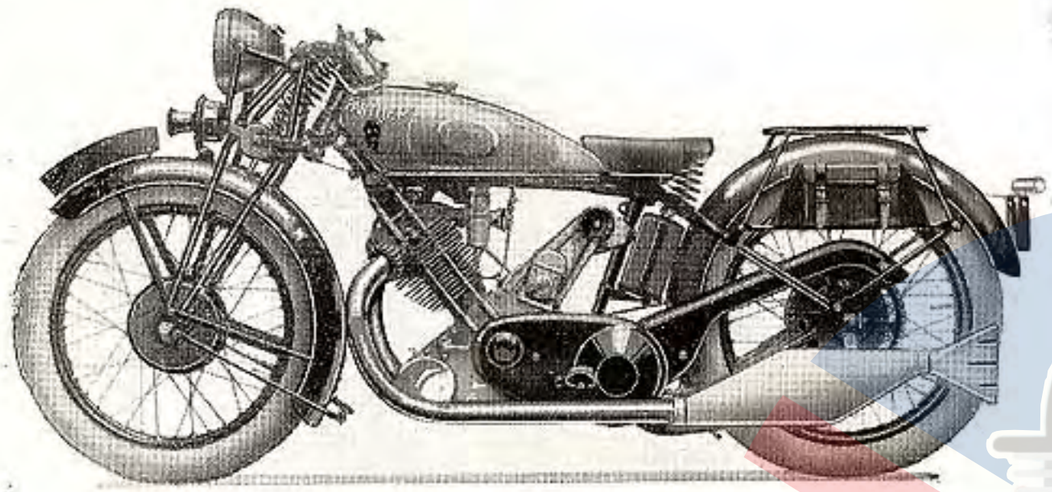
Works: Cleckheaton, Yorks.

O.H.V. Panther Model No. 85.



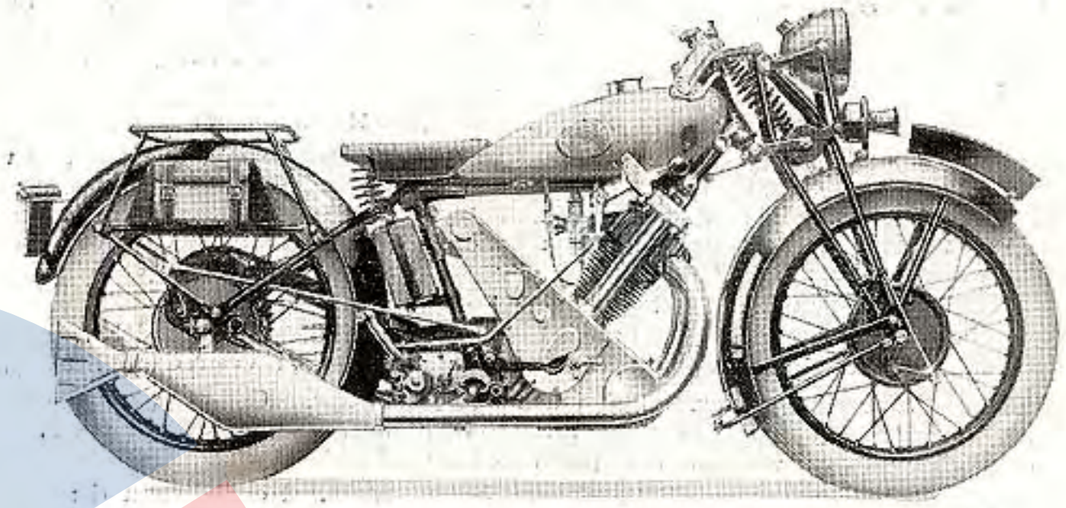
Specification of the Redwing Engine.

This model has gained an enviable reputation during the past Season and is now fitted with a new Redwing engine 598 c.c. 87×100 m.m. Compression 7. B.H.P. 22 at 5,000 R.P.M. This engine has the combustion chamber, the head of the piston, the ports and the sparking plug hole polished to ensure maximum efficiency. Extra return springs are fitted on the rockers, specially strong valve springs, and the valve spring washers are made from nickel chrome stampings. The valves are made from K.E. 965 steel. A special cam is fitted and a K.L.G. 244 sparking plug. A special feature is pressure feed lubrication to the inlet guide. The head and cylinder are heavily finned. The exhaust pipes are $1\frac{7}{8}$ in. in diameter and attached to the cylinder by bronze finned nuts. This machine is delivered with a standard sparking plug, and a washer under the cylinder base which reduces the compression to 6'6—1. It should be driven for the first 500 miles at a speed not exceeding 45 m.p.h. and an abnormal oil supply. The engine should then be decarbonised, and any high spots removed from the piston. The engine can then be re-assembled without the compression washer and should be fitted with K.L.G. 244 plug.

NOTE :—Standard petrol is not suitable for a 7—1 compression.

General Specification identical with Model 50.

O.H.V. Panther Model No. 50.



SPECIFICATION.

ENGINE. 498 c.c. 84×90 m.m. Compression 5·4. B.H.P. 18 at 4,600 R.P.M. Interchangeable overhead valves with double springs and split cone cotters, operated by one-piece silver steel push rods. Bronze rocker box in which bearings for the rocker shafts are formed contains oil impregnated felt pad for lubrication. Push rods and tappets enclosed in a oil-tight telescopic tube. Aluminium piston with two compression rings and one scraper ring $\frac{1}{8}$ in. wide, $\frac{3}{4}$ in. hollow gudgeon pin clamped in connecting rod (non-floating). Double row roller big end, single row roller main shafts. Additional ball bearings in timing case cover for main shaft and cam shaft.

LUBRICATION. $3\frac{1}{2}$ pints of oil carried in sump cast with crankcase. Rotary double plunger pump, positive in action without any form of valves or springs is housed in the intermediary timing wheel. Oil drawn through quick-detachable wire gauze filter and delivered to piston at base of cylinder. All oilways internal. Indicator and regulator visible and controllable whilst riding. Filling orifice on timing case. Marked dipper rod in sump to denote oil level. Surplus oil is collected from the fly-wheels and returned from the crank case to the sump.

NOTE. The oil filling hole and the return channel from the timing case to the sump have been increased in size to enable the sump to be rapidly replenished in the coldest weather. Internal alterations to the crankcase, to equalise the pressure in the crank case, timing case and sump, have resulted in an extraordinary economy in oil consumption.

FRAME. All straight tubes. Front down frame member formed by four steel rods passing through the engine. Bottom bracket casting forms platform for gear box. Sidecar lugs incorporated in frame. The bottom bracket has been altered to give ample clearance for the back chain and the back fork ends have been simplified to render the back spindle nuts fully accessible.

GEAR BOX. Special P. & M. Sturmey-Archer three speed gear box and clutch with provision for speedometer drive. Ratios 4·5, 6·6 and 13·3 to 1. P. & M. 4 speed can be fitted (*see extras*). Provision is now made for speedometer drive, the return spring has been enclosed and an improved stop spring fitted which is additional to a new internal stop. The open operation shaft bush is now capped off to prevent oil leakage. Ratios 4·5, 5·4, 8 and 12 to 1.

STANDS. The back stand has now been replaced by a drop forged central spring up stand. The ease of operation of this stand is unique, as the back wheel is only lifted just clear of the ground. Slip-on tubular extensions are supplied in the toolbag if it is desired to lift the machine higher for the removal of the back wheel.

MAGNETO. B.T.H. gear driven through universal fibre coupling and fixed on top of crankcase. **DYNAMO DRIVE.** Double sprocket formed on magneto drive shaft, the universal coupling eliminating all strain on the magneto bearings. **DECOMPRESSOR.** Ensures easy starting by bringing an additional cam into action which reduces the compression by about half. **CARBURETTER.** Amal Sports two lever with flanged airtight fixing. Twist grip throttle. A separate

adjustable throttle stop is fitted to enable the slow running position to be set accurately.

SADDLE. Lycett Aero. Height from ground 26 ins. The saddle is hinged from a lug brazed on to the top tube and the springs have an independent support fixed to the frame at the back. Although the saddle is extremely low, there is ample clearance for the maximum movement.

CHAINS. Coventry. Front ½ in. × ·305. Back ⅝ in. × ¼ in.

FRONT FORKS. Special P. & M. Brampton with shock absorbers. The girders have been lengthened to increase the ground clearance and the clearance between the steering damper and the front mudguard. The steering has been further improved so that the machine is rock steady at maximum speeds and backwheel road adhesion is secured. The lamp lugs are incorporated as an integral part of the fork. The damper is now regulated by a handsome vulcanite knob.

HANDLEBARS. The shape of these has been improved. The handlebar, complete with all controls, can be Chromium plated, if desired (*see extras*).

HUBS. Front taper roller. Back journal ball bearings. Complete water and dust excluding covers are fitted to both hubs. Brake lever on the back hub pivots on the reinforced anchor plate. **TYRES.** 26×3·25.

TANK. Saddle type recessed at back for nose of saddle. Holds two and a half gallons. The tank has been altered so that it can be removed without touching the saddle which now fits more snugly without the possibility of damage. A new type quickly detachable splash proof filler cap is fitted which gives a clear opening into the tank of 2½ ins. Finished as standard in two shades of green. Nickel finish optional, no extra charge. For chromium finish see extras.

CHAINGUARD. This has now been improved by being made in two pieces to facilitate removal and provide accessibility.

FOOTRESTS. These are adjustable through a complete circle and are made in two pieces to enable simple and cheap replacements in the event of damage.

CARRIER. This is quickly detachable and leaves the mudguard fully supported and the toolbags in position.

TOOLBAGS. Two exceptionally large toolbags are fitted, which are attached to strong brazed on lugs. There are therefore no clips.

STANDARD EQUIPMENT. Detachable Carrier. Steering damper. Knee grips. Front and central stands. Adjustable handlebars. Dynamo drive sprocket. Grease gun lubrication. Number plates. Tyre Pump. Two Toolbags. Toolkit.

CONSUMPTION. Petrol, 90 M.P.G. Oil 1,500 M.P.G.

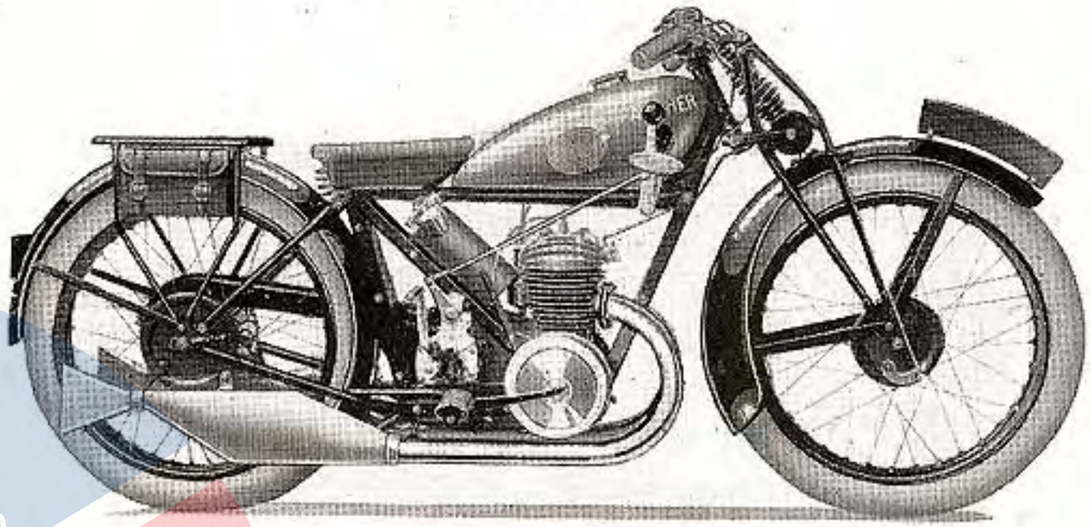
ELECTRICAL EQUIPMENT. The Miller headlamp is 7 ins. diameter and fitted with diffused glass, parking bulb, handlebar control dimming switch in connection with the Philip Duplo bulb. A car sized illuminated ammeter (2½ ins. in diameter) is fitted on top of the lamp and the car type switch is also most conveniently placed. The stamped steel brackets are bolted direct to the special fork lugs. The 30 Watt Miller dynamo is driven by a silent Duplex roller chain enclosed by an aluminium guard. The drive is taken from the timing case and is entirely independent of the magneto drive. Automatic oiling from the crankcase is provided for the dynamo chain which is readily adjusted by turning the dynamo, the armature shaft being eccentric in the case. **ACCUMULATOR.** Is the well-known Exide solidly supported vertically on a steel table which is fixed to a bracket brazed on to the frame tube, instantly detachable for filling with acid, etc. **HORN.** Rigidly mounted below the lamp on the front mudguard. Switch button incorporated with the dimming switch on the handlebars. **REAR LAMP.** Extends along the top of the back number plate, giving a central red light and fully illuminating the numbers. The bulb holder is instantly detachable for use as an inspection lamp. **GENERAL.** The wires where they are visible leading to the lamp are enclosed in a woven loom cable. The dynamo, accumulator, and rear lamp do not project from the machine. The whole equipment is, so to speak, part of the general lay-out. Complete reliability, long life and silence can be guaranteed.

Model No. 60.

598 c.c. 87 × 100 m.m. Compression 6. B.H.P. 20 at 4,600 R.P.M.

The machine is precisely the same throughout as the No. 50 Model but the lower of the two compression rings on the large piston acts as a scraper ring. With the exception of the piston, cylinder and flywheels all parts are interchangeable.

Model No. 25.



The range of light Panthers are known as the machines with the steel backbones and are famed for rigidity and strength. Their success has prompted a competitor of ours to make a clumsy copy of the model we originated.

SPECIFICATION.

FRAME. The main frame member, running from the handlebars to the saddle is a steel drop forging. Bolted to this member is a duplex steel jointless cradle, in which the engine and gear-box are housed. This unique construction eliminates all lugs and brazed joints and although light is of immense strength.

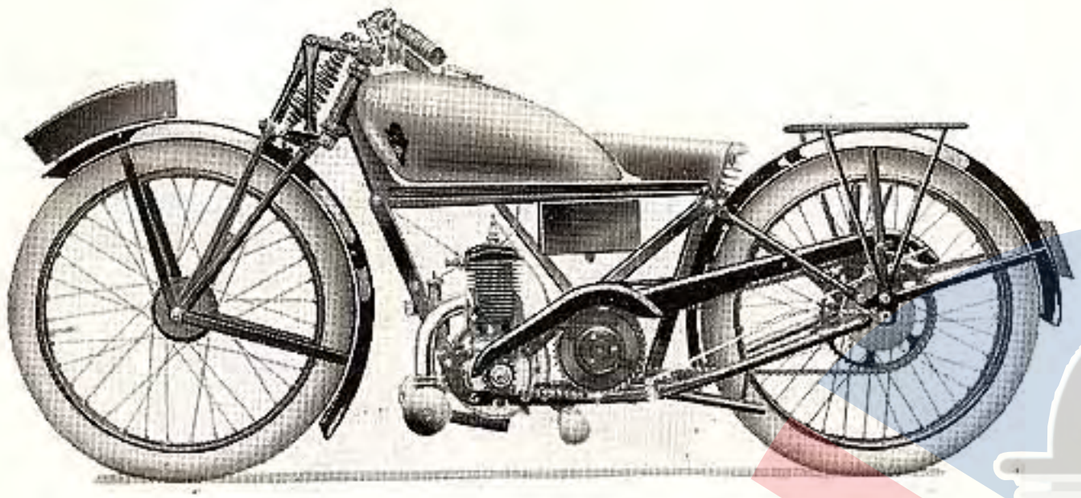
ENGINE. Villiers 247 c.c. two stroke super sports with quickly detachable aluminium combustion head. Bore 65 m.m. Stroke 70 m.m. Twin exhaust ports. Full roller bearing big end. Aluminium alloy piston with fully floating gudgeon pin. Extra long bronze gas tight main bearings.

CARBURETTER. Villiers special carburetter with hand control for variable jet adjustment and air filter. **IGNITION.** Villiers (flywheel) magneto. **GEAR BOX.** Sturmey-Archer three-speed with Ferodo inset clutch operating from handlebar. The box is rigidly bolted to the frame cradle. Bottom fixing Ratios 5, 8½, 16 to 1. Gate control at side of tank. **FORKS.** Special Brampton forks fitted with shock absorbers **SILENCERS.** The twin exhaust ports lead into two large size pipes to which are fitted full size Panther silencers of large capacity with fish tails suitably baffled to ensure silence without overheating. All parts detachable for ease of cleaning. **TANK.** Handsome fully rounded welded steel petrol tank. Heavily nickel plated. Holds two and a half gallons and is fitted with new type quickly detachable splash proof filler cap which gives a clear opening into the tank of 2½ ins. **OIL TANK.** Welded steel—holds three pints and incorporates an adjustable sight feed fitted under saddle. **LUBRICATION.** Entirely automatic, the oil being forced from the tank through the sight feed by pressure from the crankcase. Grease gun lubrication to all the bicycle parts. **WHEELS.** Wired on 26×3 ins. Dunlop cord tyres. **TRANSMISSION.** ½ in. × ·205 chains. Full guard to front chain. **BRAKES.** Internal expanding 6 in. back and 5 in. front. Rear brake pedal mounted independently of footrest tube. P. & M. instantaneous hand adjustment to both brakes. **STAND.** P. & M. Central spring up stand, raised or lowered without handling. **FOOTRESTS.** Fitted with rubber pads and fully adjustable. **HANDLEBARS.** Fully adjustable for height and angle. **SADDLE.** Lycett Aero. Bolted direct on to frame.

The following comprehensive equipment is standardised:—

Twist grip throttle, steering damper, shock absorbers, 2 toolbags, carrier, knee pads, complete front chain cover, valanced front mud guard, Villiers direct electric lighting with 6 in. headlamp and rear lamp, bulb horn licence holder, number plates, toolroll and tools, grease gun, tyre inflator.

NOTE. The machine is fitted with 26×3 in. wheels and 5 in. mudguards.



Model No. 20.

The specification of this model differs only in detail from the 247 c.c. Model as follows:—

Frame and forks of smaller dimensions but similar design.

ENGINE. 196 c.c. 2-port with cast iron piston and non-detachable head.

LUBRICATION. Petroil system. Castrol oil caddy neatly fitted under petrol tank.

SADDLE. Lycett Aero small size.

BRAKES. 5 in. Front and rear.

WEIGHT. 165 lbs.

EQUIPMENT. Toolbag complete with tools and toolroll. Tyre inflator. Grease gun.

Model No. 15.

Special as Model 20 with following alterations:—

ENGINE. 147 c.c.

GEAR BOX. Two speed Albion.

TYRES. Dunlop 24×2·375. Wired-on.

BRAKES. Front 3½ in. Back 5 in. Finger adjustment to both.

WEIGHT. 145 lbs.

EXTRAS.

O.H.V. Models.

	£	s.	d.
Electrical equipment including illuminated ammeter, handlebar dimmer, combined rear and inspection lamp, horn, and silent duplex roller chain dynamo drive			
Extra for Bosch Horn			
Tank Speedometer, Gearbox drive, non trip			
" " " " trip			
P. & M. 4 Speed Gear			
Aluminium front Chain Case			
Leg Shields			
Licence Holder			
8 day Clock mounted on Steering Head			
Aluminium Number Plates			
Twist Grip Ignition			
Chromium Plated Handlebars and Controls			
" " Exhaust system complete			
" " Tank			
" " Gear Lever and gate, and Brake Rod			
Comprehensive Insurance			
Panther Mascot (model of animal in natural colours for fixing to handlebar)			

Villiers Models.

	£	s.	d.
4½ in. Villiers direct lighting			
4½ in. Villiers Dynamo lighting			
6 in. Villiers direct lighting			
6 in. Villiers Dynamo lighting (for Model 25).			
Legshields			
Bulb Horn			