

courtesy of Bike Magazine

MOTOR



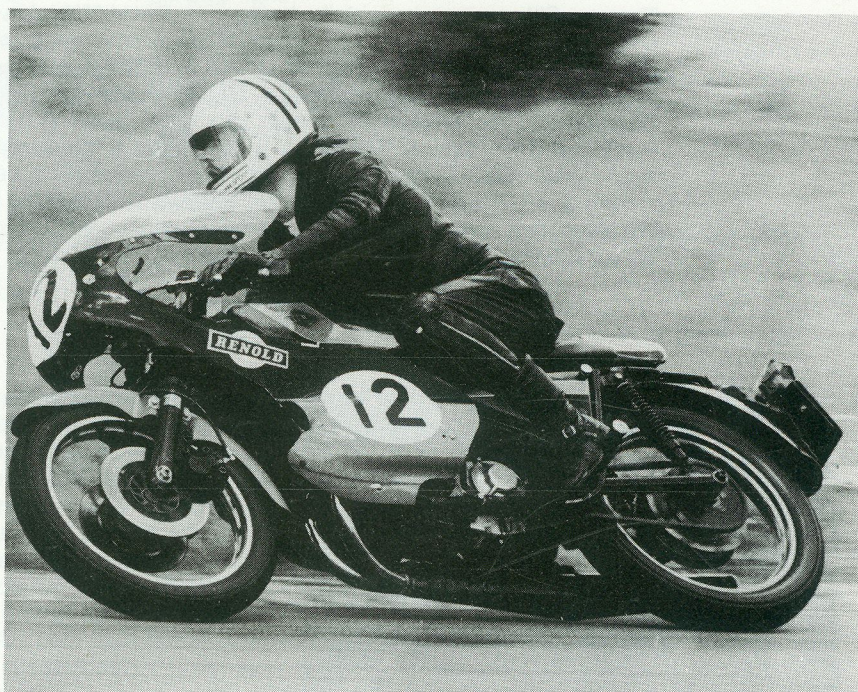
RESEARCH & DEVELOPMENT
PROTOTYPE & SMALL
BATCH MANUFACTURE

SPECIALIST
ENGINEERING
SERVICES

CYCLES

**700S – The enthusiasts
motor cycle**

- * 660 cc 48 bhp 310 lb wt
- * Superb handling and brakes
- * Good power-weight ratio
- * Good Fuel Consumption
- * 100 mph plus performance
- * Good low-speed torque
- * Designed by motorcyclists for easy maintenance, high point-to-point performance and enjoyment by motorcyclists



The Silk 700S Production Racer Sponsored jointly by FURMANITE and Silk. Ridden by Alan Jackson at Croft in 1976.

Two models are available – the Sports Tourer and the Production Racer



The story of the Silk 700S

George Silk and Maurice Patey originally overhauled and tuned vintage motor-cycles, but became convinced of the need for a new, high-quality British motor-cycle. The "Silk Special", with a reconditioned Scott engine, was produced in small numbers to develop and prove the basic concept of the motor-cycle, while a new engine was being designed and developed. The Silk 700S is British, and has unique qualities of light-weight and superb handling, road holding, performance and fuel economy.

Silk Engineering recently became part of the Furmanite International group of companies. The association will bring to us all the benefits of management, engineering and production skills which a rapidly expanding international company can provide.

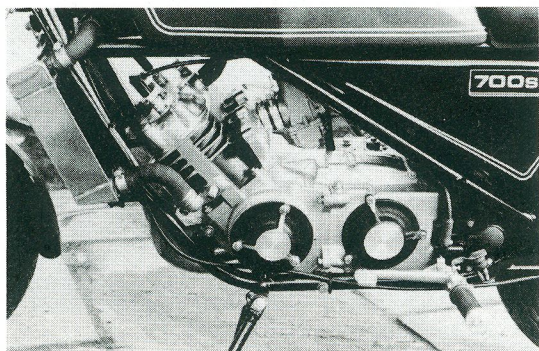
We have produced a machine which is designed by enthusiasts for enthusiasts, with character in the tradition of the great classical British motor-cycles with the advantages of light weight and low maintenance.

The Silk 700S has a unique place in the British motor-cycling scene. Production quantities are limited—we are not a mass-production company. Our policy is to develop the bike progressively so that it retains both its character and its unique appeal.

SUPERB HANDLING

Traditionally, the 2-stroke had the advantages of lightness, compactness, simplicity and mechanical quietness; but it suffered from a reputation for difficult starting, sparkplug troubles, blue exhaust smoke, rapid bore wear and seizure. Later versions of the 2-stroke, using the "loop scavenge" principle, produce very high power but suffer, at the same time, from lack of torque at low speeds so that six gears are necessary, and the fuel consumption is high.

The new Silk engine was initially designed by David Midgelow, C.Eng., M.I.Mech.E. and George Silk, to emphasize the advantages and minimise the disadvantages of the 2-stroke, and was then referred to Dr. G. Blair, B.Sc., Ph.D., C.Eng., M.I.Mech.E., M.S.A.E. at Queen's University, Belfast, for the porting to be optimised, and the performance to be calculated by computer. Our new, patented, "Velocity Contoured" charge/scavenge system is a major factor in achieving abundant low speed torque and good fuel consumption. Maximum horse power is produced at 6,000 r.p.m., but maximum torque occurs around 3,000 r.p.m., giving real "kick-in-the-back" acceleration throughout the speed range and requiring only a simple four-speed box. The fuel consumption is outstanding for a 700 c.c. bike, by any standard. The compact design of the all-aluminium engine makes the best of the power/weight and power/volume advantages of the 2-stroke.



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Water-cooling has a number of advantages and other manufacturers are now introducing it for their higher-powered machines. It controls the hotspots, giving more uniform and better controlled combustion, thus reducing unwanted exhaust emission and provides better cooling round the spark plugs, thus helping to overcome one of the 2-stroke's problems. It emphasises the 2-stroke's inherent mechanical quietness. Although there is the added bulk of the radiator, the actual engine itself can be much smaller, lighter and more accessible. Finally, the whole system is so well matched that, with such a small engine, the header tank can be mounted above it, using thermo-syphon cooling and avoiding the complication of water pumps and thermostats.

Simplicity, leading to reliability and ease of maintenance, has been our aim throughout.

SPECIFICATION

THE ENGINE

Type and dimensions

Inclined twin-cylinder piston-port two-stroke, water-cooled, pressure-pump lubricated. Patented "Velocity Contoured" charge/scavenge system for low-speed torque and good fuel consumption. Bore and stroke 76 mm x 72 mm, 653 c.c.

Engine construction

Separate cast-aluminium head, block and crankcase, with integral water cooling. Centricast iron dry liners, jig-machined for accurate porting. Two-piece crankcase, horizontally split for rigidity and avoiding oil leaks. Pressed-up counter-balanced crankshaft, running in 4 caged needle-roller bearings. Forged con-rods with floating gudgeon pins and caged needle-roller big-ends. Specially designed ported-skirt pistons.

Lubrication

Crankshaft-driven Silk micrometering duplex pressure pump meters oil according to rpm and throttle opening, through pressure-retaining non-return valves. Approximate rate of oil usage better than 300 miles per pint. Separate 3¼ pint oil tank.

Ignition

"Lumenition" transistorised ignition, with centrifugal advance/retard and dual coils.

Carburation

Latest-type Amal Concentric Mk. II carburettor, with an intake filter.

Exhaust system

Siamesed expansion type with specialist-designed silencer.

THE TRANSMISSION

Primary chain

7/16" Renold Duplex chain in enclosed oil bath. Speed reduction 24:49.

Clutch

Specially designed robust multi-plate clutch, using standard clutch-plates, running in enclosed oil bath.

Gearbox

Rigid casting assemblies flange-mounted on to the crankcase, with rigid cast covers, multiple-bolted to eliminate oil leaks.

Robust heavy-duty close-ratio gears:

1st 2:29; 2nd 1:59; 3rd 1:21; Top Direct.

Final drive

Totally enclosed 5/8 x 1/4" roller chain, grease packed.

Adjustment by eccentric in swinging-arm fulcrum.

Standard gearing: 19-tooth gearbox sprocket, 36-tooth wheel sprocket with "Cush-Drive".

"AS SMOOTH AS A SILK"

The bicycle frame

Lightweight duplex frame, triangulated for strength and rigidity at steering head and swinging-arm pivot points. Manufactured in aircraft-grade tubing by Spondon Engineering and race proved. Complete engine and gearbox removal by taking out ten bolts, without dismantling.

Steering head and front forks

Twin Timken tapered-roller steering head bearings, pre-packed with grease and sealed. Race proved hydraulic-damped front forks. Full gaiters.

Rear suspension

Rigid swinging-arm pivoting on substantial Tufnol bushes. Grease-nipple lubricated to provide adequate supplies of grease to expel road dirt and water, to ensure long-life and accurate road holding and steering. Girling suspension units, readily adjustable to suit load.

Brakes

Single 10" disc Lockheed hydraulic front brake. Finned light-alloy calliper. Disc in cast-iron for optimum braking in dry or wet conditions. Robust light alloy handlebar-mounted master cylinder. 7" light alloy drum rear brake.

Wheels

Aluminium alloy rims. Rustless spokes. Avon Roadrunner tyres. Sizes: Front, 3.60 x 18; Rear, 4.10 x 18. Quickly detachable rear wheel.

Fuel tank

Stove enamelled aluminium tank, approx. 4 gals. Snap action filler cap. Reserve tap.

Electrical equipment

12V negative earth system.

Crankshaft-driven 150W alternator with rectifier and battery.

Special Lucas 7" quartz-halogen headlamp, with built-in parking light.

Display unit includes speedometer, rev counter, ignition switch, ammeter, light switch, headlamp highbeam indicator, flashing indicator warning light. Amber flashing indicators front and rear. Large area combined stop-and-tail light reflector.

Horn.

General

Nuts and bolts are stainless steel; standard threads are UNF or UNC.

Customer Options

Wheels: Compagnolo magnesium alloy or polished aluminium alloy rims.

Front brake: Single disc standard. Alternatives are hydraulically operated twin disc or compagnolo hydroconic.

Handlebars: To suit customer preference.

Display Unit: Alternative Clock, Rev-counter, Temperature gauge.

Sidecar

attachments: If required.

Colour scheme: Gold linings on choice of:-

Metallic Green
Metallic Blue
Red
Black.

Low Maintenance Costs

The whole motor-cycle has been designed by practical motor-cyclists for simplicity, reliability and long life leading to minimal maintenance costs.

Simplicity

Two cylinders, one carburettor, one silencer, no valves, no contact-breaker. Only engine adjustment required is to the single carburettor.

Approximately 1000 miles between topping-up with oil.

Eccentric adjuster for final drive chain—simple adjustment and perfect wheel alignment.

Engine and gearbox removal without dismantling. Quick detachable rear wheel.

Only one service tool necessary—for clutch nut.

Spanners to fit all other nuts are included in comprehensive tool kit.

Long Life

Mechanical design for 80 hp and 9400 rpm with large dimensions and bearings—big reserve factors and low wear.

Water-cooled engine, with cast-iron liners and moderate rpm—target of 60,000 miles before major overhaul.

Well-proven clutch with improved operation, using standard clutch plates.

Well-proven gearbox with improved materials and manufacture.

Large bearings to take chain load directly—no distortion.

Enclosed chains—five times longer life than exposed chains.

Light weight—all parts more lightly loaded.

Smooth—no failures due to vibration.

We reserve the right to vary this specification without notice

HIGH POWER/WEIGHT RATIO

Dimensions

Wheelbase: 56" (142 cm). Overall length: 84" (214 cm).

Ground clearance: 8" (20 cm). Weight: approximately 310 lb. (140 kg).

Fuel capacity: 4 gallon (18 litre). Oil capacity: 3¼ pint (1.85 litre).

Approximate performance

Speeds at 6000 rpm :

Top 111 mph (178 kph).

3rd 92 mph (147 kph).

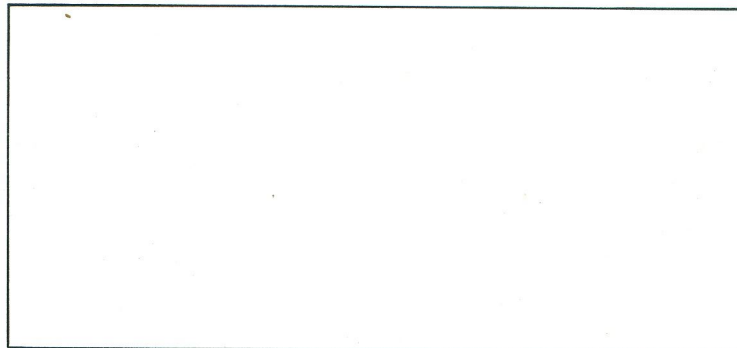
2nd 70 mph (112 kph).

1st 48 mph (77 kph).

Fuel consumption—Average touring: approximately 55 mpg (19 km/litre).

Oil consumption—Average touring: better than 300 miles/pint (850 km/litre).

Your nearest agent is:



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