

All Communications to be Addressed to the Firm.

The HARLEY-DAVIDSON MOTOR CO. *Ld*

Harleyson House



74 Newman St.

LONDON W¹

TELEPHONE

Museum 4070 (2 LINES)

ALL CODES USED

TELEGRAMS

Harley Davidson Ox London

13th February 1926

Dear Sir,

We have pleasure in enclosing herein as desired,
a copy of our latest catalogue. Should you desire to
place an order we shall be pleased to give your
requirements every attention.

Yours faithfully,

THE HARLEY DAVIDSON MOTOR CO. LTD.

A handwritten signature in dark ink, appearing to read "J. A. M. J.", with a long horizontal flourish extending to the right.

JAM/IP
(Encl)

(Sales Dept)



The
Harley-Davidson
Motor Co.^{Ltd}

HARLEYSON HOUSE
74 NEWMAN ST.
LONDON. W.
ENGLAND

Telephone
Museum 4070 (4 lines)

Telegrams
Hardevmocoyl O/L London



Machine prices plus - 15% advance
Sidecar " " - 15% " plus £1
Acetylene lighting set
and mechanical horn £8 . 7 . 6 plus 15%
Speedometer - - £5 . 10 . 0 " 15%

The Harley-Davidson 7-9 H.P. Engine

Its Design and General Features

The design of the Harley-Davidson engine has been standardized for years, and the only changes have been refinements of detail from time to time. The Harley-Davidson engine is very accessible; it is a simple matter to get at any parts when adjustments may be necessary after long periods of service. The cylinder, cylinder head, and valve chamber from a one-piece casting of an unusually fine grade of iron compounded to special formula. The engine is what is known as an "L" head, or pocket valve type with an overhead inlet valve. This construction insures the smallest combustion wall area possible in an engine of the "L" head type. In an engine of this design, in which the inlet valve is placed directly over the exhaust valve, the exhaust valve is kept cool by the incoming charge of cold gas. When the inlet valves are placed in any other position the exhaust valves, of course, are working under a higher temperature, which is not desirable for such large valves, making them more subject to pitting or warping.

The exhaust valve seats directly on the cylinder casting, and the inlet valve is carried in a cage which is held in place by a simple lock nut construction.

A refinement in the inlet housing is the hardened steel guide screwed into the cast iron body of the housing. This insures longer wear. It can easily be replaced if necessary.

The cylinder bore is carefully ground to a fixed standard, to .001 of an inch; it is taper ground being .003 inch smaller at the top than at the bottom. This is to allow for expansion of the top of the cylinder, due to the heat of combustion while the engine is running. The pistons, likewise, are taper ground, being a trifle smaller at the top than at the bottom.

This fine workmanship, adhered to year after year, has helped to build up the reputation the Harley-Davidson organization enjoys for maintaining such a remarkably high standard of quality. Perfectly finished cylinders and accurately fitted pistons, and rings, insure a sweet running engine—an engine which will run as it should run, without smoking or using an excess amount of oil.

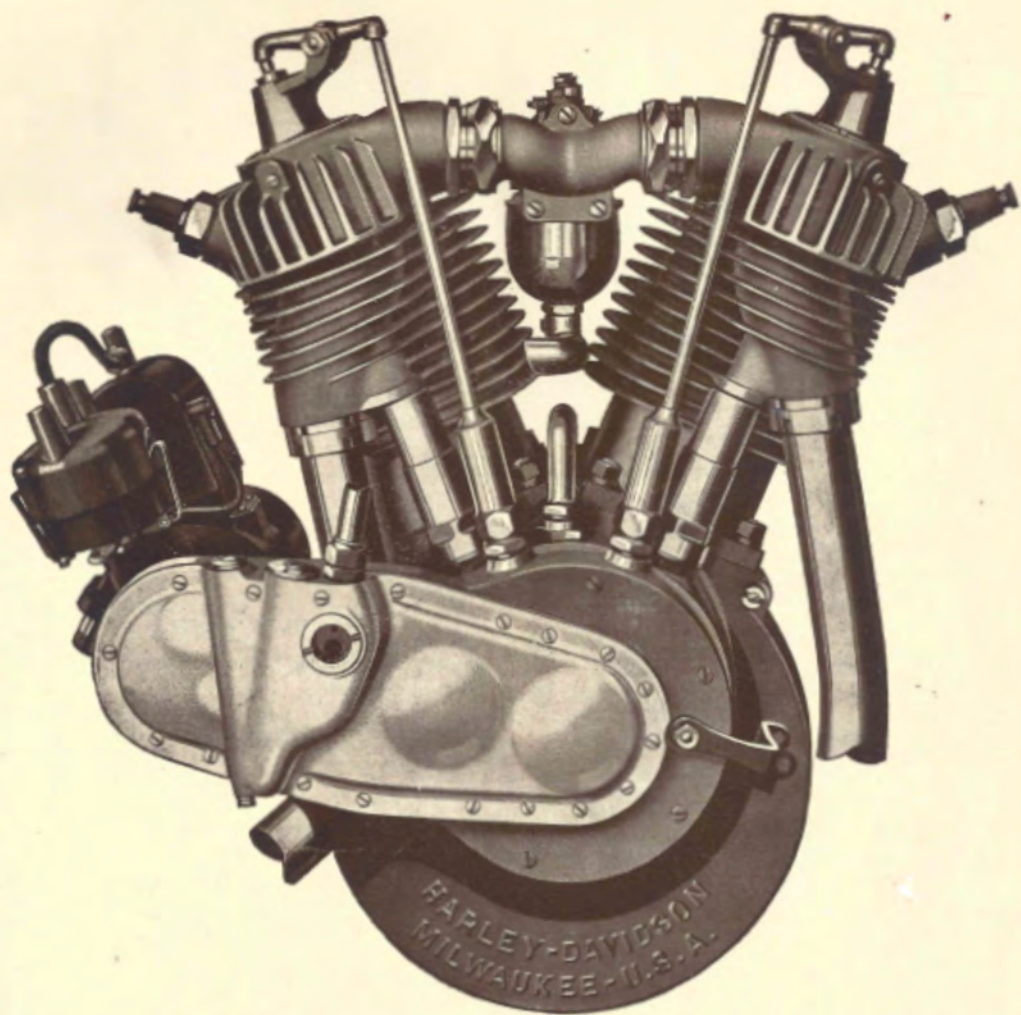
A Clean Engine

In building the Harley-Davidson engine it has always been the object of the Harley-Davidson engineers to make an engine that was clean—one that would not leak oil to make its appearance unsightly or to soil the rider's clothing. One reason why the Harley-Davidson engine is so clean, is because it uses a minimum amount of oil. Its positive vapor oiling system uses up the oil as fast as it is fed to the engine by the automatic pump. There is no waste.

Even though too much oil were put into the crank case, the design of the engine would make it very difficult for any oil to leak out. A rotary valve connected to a breather pipe does much to keep the crank case clean, as this valve regulates the compression in the crank case.

Another important function of the breather valve is to prevent road dust from reaching the interior of the crank case.

Provision is also made to prevent leakage of oil at the crank shaft bearing.



The Harley-Davidson 7-9 h.p. Unit with Remy combined ignition
and lighting generator

It is the belief of the Harley-Davidson engineers that the Harley-Davidson engine develops every particle of speed and power it is possible to build into a motor-cycle engine which is to be used for all-round work, whilst, at the same time it has built into it all the endurance, reliability, and long life that 18 years of constant work on motor-cycle engines have enabled its producers to give it.

So quiet in operation is the Harley-Davidson engine, that at ordinary road speeds, when the throttle is nearly closed, the motor-cycle skims along with only a subdued purr.

Its acceleration and flexibility is really remarkable, and there is no one quality of an engine so much appreciated by experienced riders, as flexibility.

The Harley-Davidson engine will throttle down to the very slowest pace and still pull its load without apparent effort. This ability to really "pull" when running slowly can be best appreciated in heavy traffic or on an unusually bad road, where the driver wants to travel slowly, but where power is also very much desired.

An engine may be powerful yet lack acceleration or flexibility, or, an engine may be fast, yet lack the ability to "pull" when running slowly. But an engine which is not only powerful and speedy, but which also meets the requirements of flexibility and acceleration as well, is really a triumph in engineering—such is the Harley-Davidson engine.

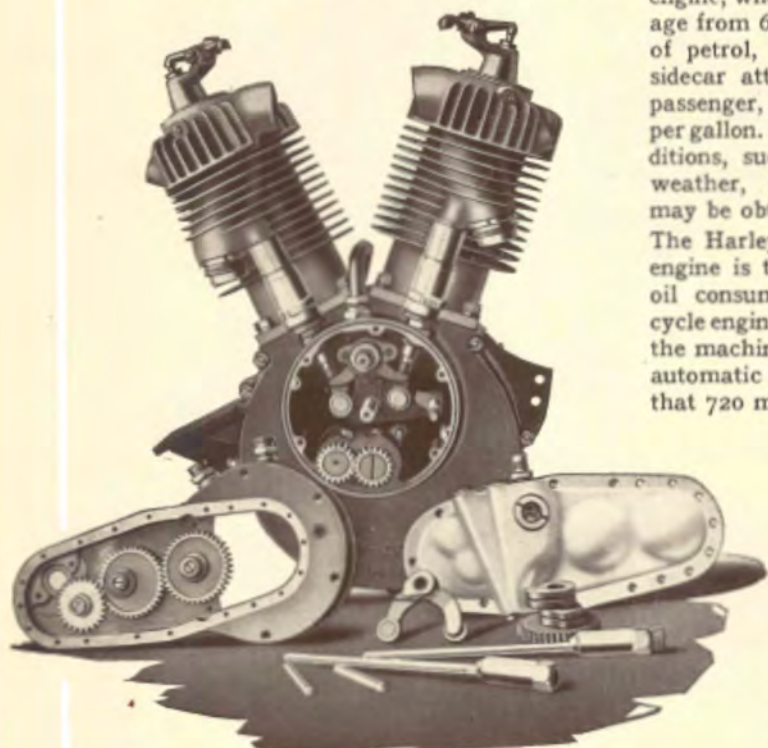
An Economical Engine

It is obvious that an engine embodying the many superior points of performance which the Harley-Davidson possesses, is economical too. Whilst the ability of the rider enters largely into the question of petrol economy, the Harley-Davidson

engine, when driven solo, will average from 60 to 75 miles per gallon of petrol, or when driven with sidecar attached, and carrying a passenger, from 50 to 60 miles per gallon. Under favourable conditions, such as good roads and weather, much greater mileage may be obtained.

The Harley-Davidson motor-cycle engine is the most economical in oil consumption of any motor-cycle engine manufactured. When the machine leaves the factory the automatic oil pump is adjusted so that 720 miles may be secured on

a gallon of Harley-Davidson cylinder oil with standard solo gear ratio. After the engine has run several hundred miles the oil feed can be cut down a trifle and the rider should expect to get from 800 to 1,000 miles per gallon for ordinary solo riding.



Harley-Davidson 7-9 h.p. engine dismantled. Note unique cam wheel.

The superior engine performance of the Harley-Davidson is due to a combination of scientific design, the very finest material and workmanship, and the great control the Harley-Davidson factory organization has over the quality of its output, with advanced methods of production, assembly, inspection and testing.

Harley-Davidson fly-wheel assembly, note big-end construction.



Valves and Valve Operating Mechanism

The valves in the Harley-Davidson engine are made of the best material for the purpose. The valve guides are unusually long for an engine of this type. This insures long service and perfect seating of valves at all times.

Harley-Davidson valve operating mechanism is quick and positive in operation. Each valve is opened by a separate cam, thus insuring the most efficient running of the engine. The valve tappets are adjustable to take up wear after long service. The four cams and the secondary timing gear are made integral, to eliminate any possibility of failure of the valve mechanism through stripping of cam keys, which sometimes happens with a two-piece construction.

Exhaustive experiments have demonstrated that the 30° inlet valve and the 45° exhaust valve used insure the most efficient operation of the engine. The exhaust valve springs and the inlet push rod springs are enclosed.

Crank Shaft and Fly Wheel Assembly

The Harley-Davidson crank shaft is a built-up crank shaft, composed of two fly-wheels, a crank pin, and two separate crank shafts. This design makes it possible to build an engine with a very short distance between the main bearings, which means a sturdy construction and consequently a lack of vibration. The fly-wheels and reciprocating parts are carefully balanced so as to overcome excessive engine vibration.

The lower connecting rod bearing is a high duty roller bearing of Harley-Davidson design and manufacture. It is composed of four separate sets of rollers, each set in an independent retainer. These bearings are so accurately assembled that they turn perfectly freely without the slightest trace of side play at the upper ends of the rods. To insure uniformity in size, the rollers in each set of bearings are assorted to within .0001 part of an inch.

In manufacturing the bearings they are made of a standard which does not permit of a variation of more than .0001 part of an inch. No finer workmanship is possible in engine manufacture than that used in the construction of this bearing. The crank bearing of the engine receives just the right amount of oil, and will show but very little wear after many thousands of miles of service. When this wear does occur it is a simple matter to replace the worn rollers, which can be secured in sizes with a variation of .0001 part of an inch.

It is due to such close manufacturing standards that the Harley-Davidson motorcycle has earned the reputation it enjoys as a strictly high grade product which is capable of rendering year in and year out, service under the most severe conditions. The crank shaft bearing on the drive side is also a Harley-Davidson roller bearing.

The Harley-Davidson Clutch

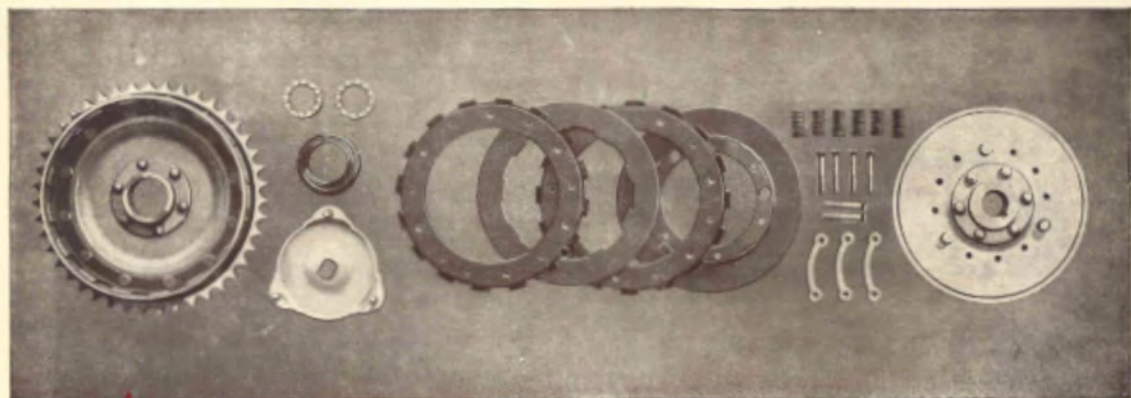
The Harley-Davidson multiple disc dry plate clutch is located on the gear box shaft. It is composed of carefully hardened steel discs working against a special composition facing. The clutch is mounted on a silent, high-duty Harley-Davidson roller bearing. This roller bearing is oiled automatically through the gear box.

When clutch adjustment is necessary it is very easily made. There are two separate adjustments. One adjustment is made by means of a nut on the clutch pull rod. The other is effected by adjusting the six tension spring screws. Either adjustment may be made without even removing the chain guard.

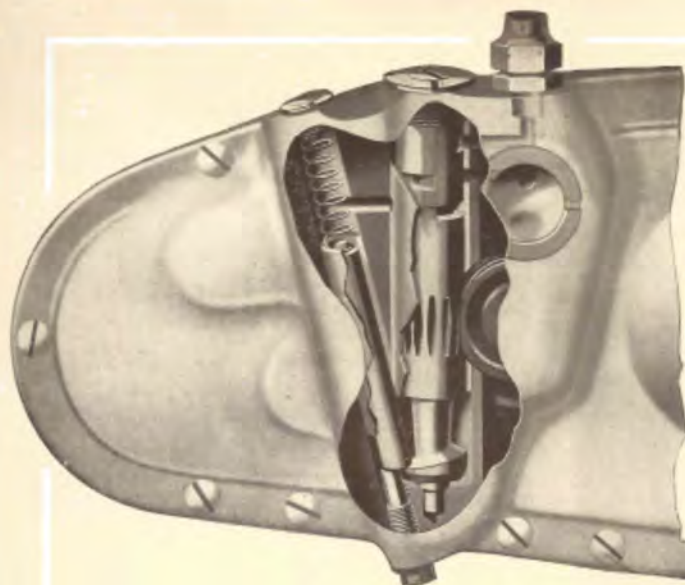
Clutch thrust is taken up by an ingeniously designed self-aligning thrust bearing.

The Harley-Davidson clutch is built to give long, uninterrupted service with the very minimum of attention. It is purposely made oversize, and will not burn out in ordinary service. The clutch discs are very large (6" outside diameter) and have a contact surface of approximately 59 square inches. Only the worst possible abuse would necessitate renewal of the clutch discs, except after great mileage—considerably more, in fact, than the average rider would run up in several seasons.

The clutch may be operated by either the foot or hand. There is a foot lever on the left foot-board, and a hand lever at the left of the tank.



All parts of the Harley-Davidson clutch are of sturdy construction.



The Harley-Davidson Lubrication System

The force-feed lubrication of the Harley-Davidson engine is probably the most carefully worked out oil pump mechanism of any petrol engine. From the oil tank the oil goes to the automatic oil pump. This patented device feeds just the right amount of oil to the engine. With oil in the tank a scarcity of oil in the

engine is impossible. Neither can this pump feed an oversupply when properly adjusted. This ensures great economy. Adjustment of the oil feed is accomplished by regulating the stroke of the pump plunger. Adding more washers on the screw below the pump plunger lengthens the stroke and more oil is fed to the motor. The removal of washers shortens the stroke and reduces the oil feed. The Harley-Davidson automatic oil pump has no check valves to stick, no ball valves to "float," no valve springs to break and no small parts to go wrong.

What is generally termed the "splash" system of lubrication, is not employed. Although the fly-wheels are used to distribute the oil to various engine parts, the term "vapor lubrication" is more descriptive than "splash," because the oil in the engine is transformed into a vapor by the action of the fly-wheels while the engine is running, there being no oil pump in the crank case—fresh oil being supplied by the automatic pump in proportion to the requirements. Use a fairly heavy bodied oil of high flash point, an oil with no free carbon. Use the very highest grade oil of this type that it is possible to buy and it will be money very well invested.

A hand operated oil pump is fitted for emergency use under abnormal conditions. Due to perfect lubrication, the Harley-Davidson engine deposits a minimum of carbon. Premature wear of engine parts is eliminated.

The automatic oil pump is so finely made and capable of such accurate adjustment that it is possible to regulate it to feed just the right amount of any grade of oil. When the motor-cycle leaves the factory, it is, of course, adjusted to feed a trifle more oil than it will require after it has been run several hundred miles. When it leaves the factory it is adjusted to feed a gallon of oil for every 720 miles, under ordinary road conditions and with standard gear ratio. Detailed instructions are given in the manual covering the operation of the Harley-Davidson motor-cycle so that any rider can adjust the oil pump after the first few hundred miles, if he does not happen to be near a Harley-Davidson agent.

The very simplicity of the Harley-Davidson oil pump is a guarantee of its absolute reliability. There are only two moving parts, the pump plunger and the rotary distributor valve. As both of these parts are in contact with oil at all times, and, therefore, automatically lubricated, there is no chance for anything to go wrong. By referring to the illustration it will be seen that the cam on the bottom of the rotary valve operates the pump plunger.

The 3-Speed Gear Box

The Harley-Davidson gears are extremely silent in operation whether high gear, low gear, or intermediate is being used. This is due to the gears being of correct design, and embodying the highest grade of workmanship throughout.

The gears are of chrome nickel steel, accurately cut and finished. The gear box is made of aluminium.

The main shaft is mounted on a large, high duty roller bearing at the left or driveside, where most of the load is carried. The bearing on the other end is a high duty combination annular bearing—a special bearing which takes care of the end thrust, due to clutch action, as well as the ordinary radial loads. The lay shaft is carried on two large Harley-Davidson roller bearings. The main drive gear runs on a high duty phosphor bronze bearing.

The bearings in the Harley-Davidson gear box are so arranged that they receive ample lubrication as long as there is the proper quantity of oil in the gear box. The same grade of oil is used as is used in the engine.

Grease should never be put into the gear box as it will not lubricate the bearings properly. Fine bearings require good oil.

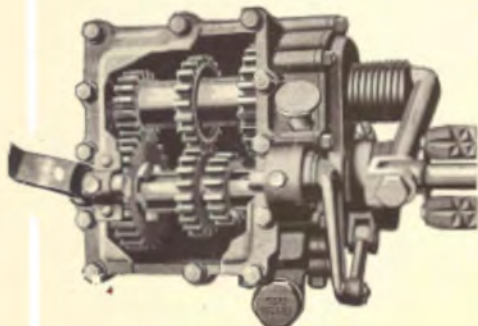
The addition of a little oil now and then is all the attention that the Harley-Davidson gear box requires. The device is built to stand up under the very hardest conditions of road service, and if the lubrication is looked after, the transmission will last indefinitely. There are no small parts to break or wear out, and no adjustments are necessary.

A feature of the Harley-Davidson transmission is an interlocking device which makes it impossible to shift the gears until the clutch is released. This does away with any chance of stripping gears. This device has been used on all three-speed Harley-Davidsons for more than four years and has proved its merit.

The gear shift lever moves in a gate on the top of the tank, which has stops so arranged that the rider may shift from high to low gear by a single movement, or from low to high, without going into second if he desires.



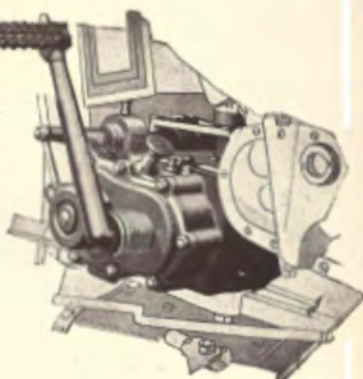
Front Forks
of 4 h.p.
Twin Model



Three-speed gear box with gear box cover and clutch operating rod partially cut away showing gears.



Notice arrangement of guide stops for gear shift lever.

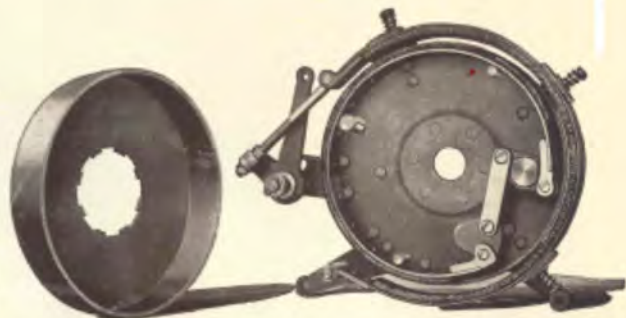


Harley-Davidson rear stroke kick starter with pedal in position for starting engine.

A Powerful Brake Set

The Harley-Davidson internal expanding brake is controlled by a foot lever on the right footboard. The brake is a large internal expanding double acting band brake, operating on a steel drum $7\frac{5}{8}$ " in diameter with a $\frac{7}{8}$ " face.

The internal construction of this brake is such that it is self-adjusting, no inside adjustment is provided, and the braking surface is so large that the motor-cycle will have seen considerable service before it becomes necessary to adjust the brake rod proper. The external contracting brake can be adjusted in a few seconds by undoing one nut. The Harley-Davidson brakes are purposely made oversize, to provide ample margin for sidecar use.



The sturdy Harley-Davidson brake set, showing both the external contracting and internal expanding brakes; hand and foot operated respectively.

"Ful-Floteing" Seat Post

The patented Harley-Davidson Ful-Floteing seat post is a cushion device which may be adjusted to the weight of any rider. This particular feature is worthy of special attention, for it is easy to understand why a cushion device which might be comfortable for a light weight rider would not serve the purpose satisfactorily for a heavy rider. The design of the Harley-Davidson seat post provides an extremely low and consequently comfortable riding position.

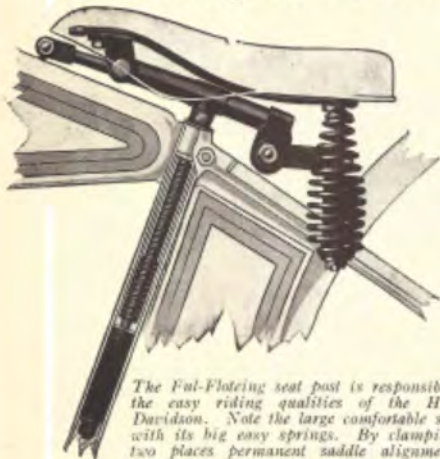
The saddle used on the Harley-Davidson is large and comfortable with big, easy springs, designed for motor-cycle use and will give the rider the comfort he should expect from a motor-cycle saddle. By clamping the saddle frame in two places permanent saddle alignment is assured.

Cushion Front Forks

The famous Harley-Davidson cushion front forks furnish one of the reasons why the Harley-Davidson has for years been regarded by riders in general as the most

comfortable motor-cycle. This patented fork has been used on all Harley-Davidson motor-cycles for 12 years without a change in principle, which is sufficient proof that the principle is right. Two large cushion springs take care of the jars and jolts that the front wheel receives in travelling over rough roads.

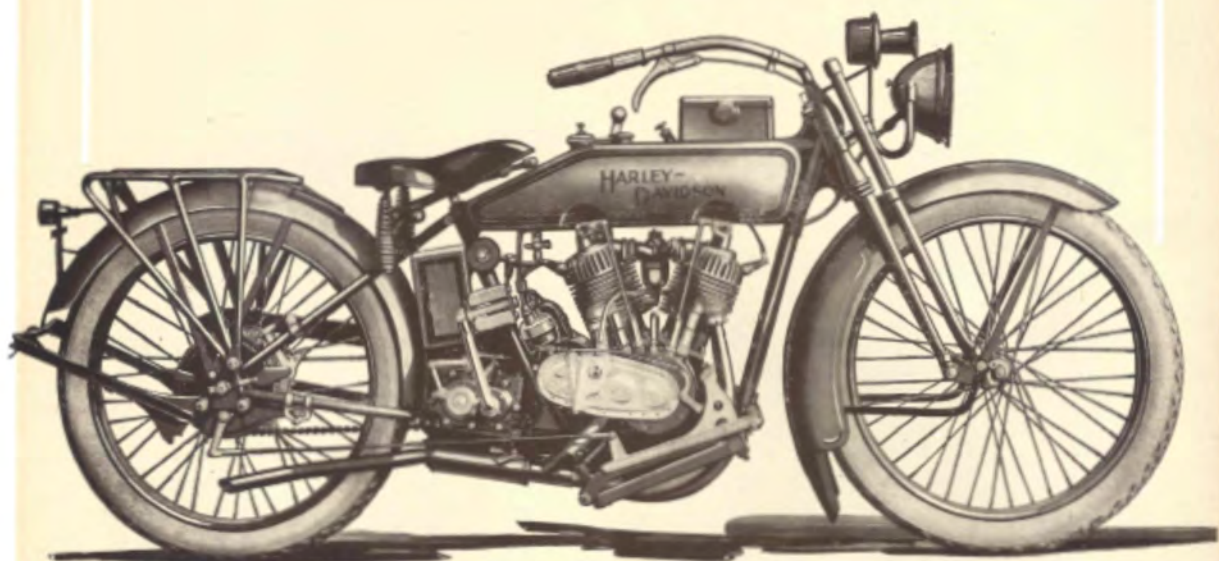
Two recoil springs absorb the rebound incidental to the action of the cushion springs.



The Ful-Floteing seat post is responsible for the easy riding qualities of the Harley-Davidson. Note the large comfortable saddle with its big easy springs. By clamping in two places permanent saddle alignment is assured.

The spring action in the forks is so perfectly balanced that vibration is not transmitted to the handlebars.





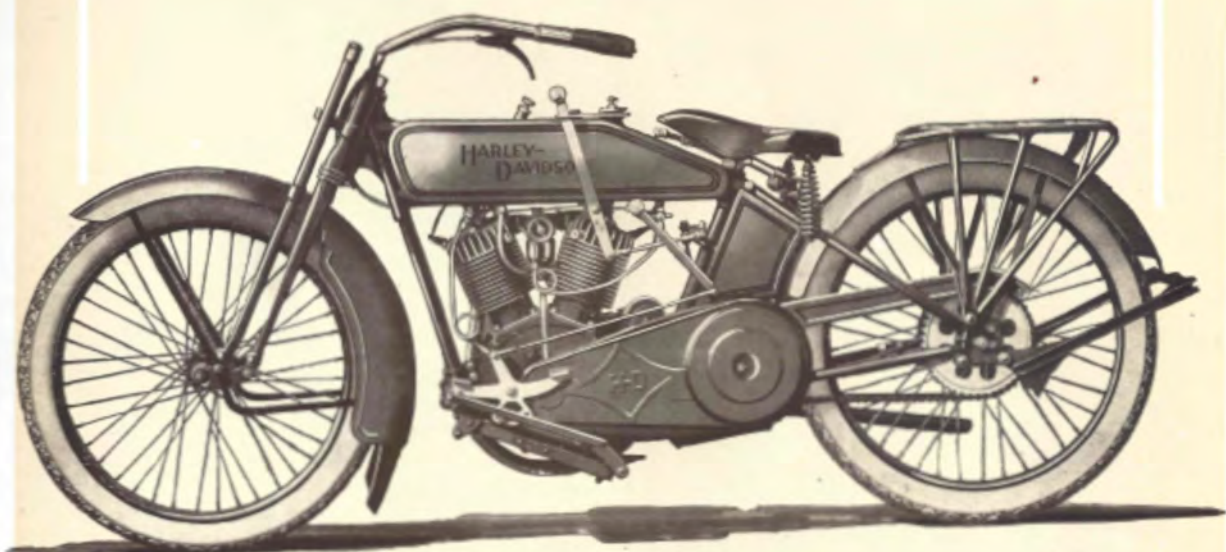
Model 20J.

Price complete with electrical equipment as per specification	-	-	-	-	-	-	£160 14 3
Sidecar (see page 13) extra	-	-	-	-	-	-	£39 0 0

Although the Harley-Davidson motor-cycle was not introduced to the British market until 1914, its sterling qualities have quickly placed it in the foremost rank and its reputation to-day is second to none.

Under the most strenuous conditions of service, both military and civilian, the Harley-Davidson has proved itself capable of withstanding the roughest treatment and it has emerged triumphantly from the severest ordeals. Its record on war service is one of which we have every justification for feeling proud.

During the past season Harley-Davidson machines in the hands of private riders have proved successful in all the leading competitions and have put up some remarkable performances securing gold medals in the Birmingham Victory Cup Trial, London-Edinburgh, Scottish six days, English six days, etc., etc., as well as premier awards in various hill-climbs and speed trials.



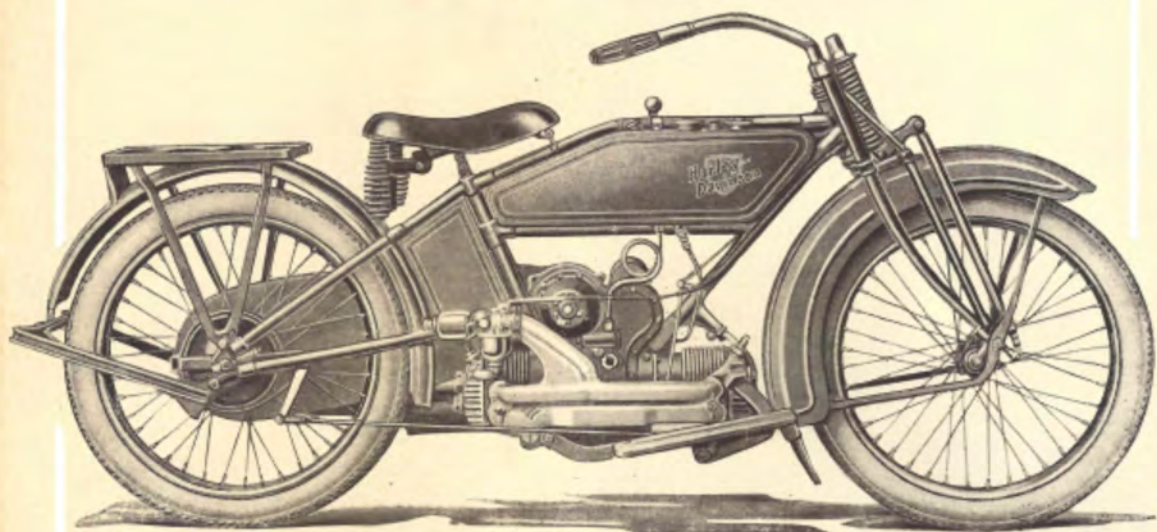
Model 20F.

Price complete as per specification	-	-	£153	16	3
Acetylene lighting set and mechanical horn			£6	0	0
Sidecar (see page 13) extra	-	-	£39	0	0

As a go-anywhere sidecar combination the 7-9 three-speed model is in a class by itself. The wonderful reserve of power and flexibility of the engine, the ease of control and comfort of the whole machine, and the marvellous way in which it stands up under the most exacting conditions make the strongest appeal to every rider to whom reliability and consistent service are of the first importance.

It is no exaggeration to state that the capabilities and ease of manipulation of the Harley-Davidson are a revelation to the rider accustomed only to the average motor-cycle—a statement fully confirmed in the number of unsolicited testimonials we are continually receiving.

Our 1920 models are the finest we have yet produced and we have every confidence that their performance during the coming year will in every way enhance the world wide reputation of "The Motorcycle Magnificent."



The 4 H.P. Horizontally Opposed Model

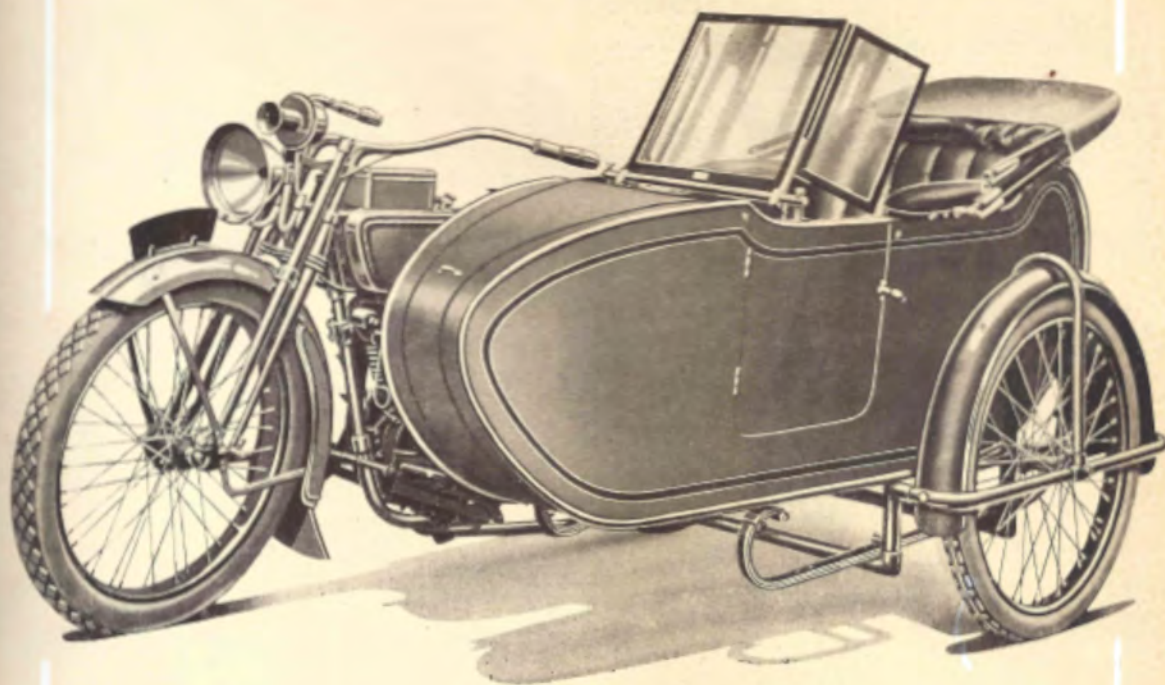
Price complete as per specification	-	£123 0 0
Acetylene lighting set and mechanical horn		£6 0 0

Although we are only just placing this model on the market it is by no means an experimental machine, our engineers having been engaged in perfecting it during the past three years.

One of the most noticeable features of the machine is the compact power unit comprising the engine, multiple disc steel plate clutch, and three-speed gear box, together with the spiral gear drive from engine to gear box.

Automatic lubrication is employed throughout this unit for the engine, clutch and gear box. The machine is not a light weight, but we believe that it represents the lightest motor-cycle it is possible to produce which will render satisfactory service under the severest conditions to which it is possible to put a motor-cycle.

Although primarily intended as a go-anywhere solo mount the 4 h.p. model is quite capable of pulling a light sidecar, and in this respect should meet the requirements of those riders who require a machine for occasional sidecar use.



The 7-9 H.P. Sidecar Combination.

Sidecar, model 20C	-	£39 0 0
Hood and Screen (extra)		£7 10 0

Our 1920 sidecar is a magnificent production and represents the finest example which the combined efforts of the coachbuilder and engineer have yet produced.

Careful attention has been given to every detail to ensure the utmost comfort to the passenger with due regard for mechanical efficiency and symmetrical appearance.

The body is made of three-ply material, strongly re-enforced where necessary. Highly finished in best coach built style to match the machine and upholstered with the best antique brown leather cloth, well stuffed and sprung. There is a very large locker in the rear, another locker under the seat and a capacious pocket let into the side.

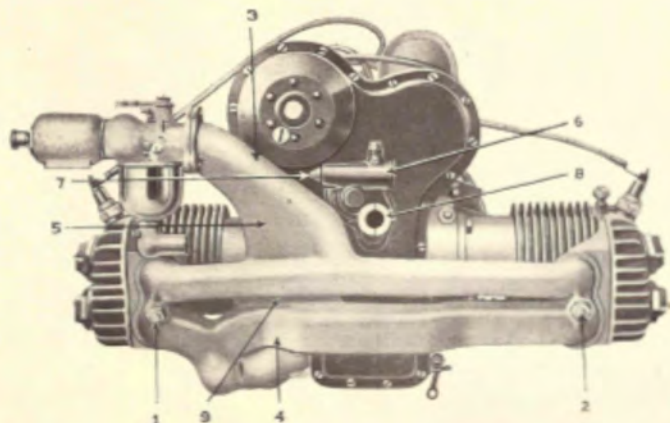
The chassis is of exceptionally sturdy construction with four point attachment, the main attachments being fitted with universal ball joints. It is designed to stand up under the severest conditions of service, and will give complete satisfaction even to the most exacting user.

The 4 H.P. Horizontally Opposed Engine

The engine is fitted with roller bearings throughout including crank pin bearings. The crank shaft is carefully balanced by means of large counterweights.

A noticeable feature of the unit is the twin superheated manifold combining both the inlet and exhaust passages. Careful inspection of this manifold will show that the incoming charge is heated right from the carburetter to the cylinder and any trouble due to condensation in the pipe is entirely eliminated. The manifold is attached to the cylinders by a simple fixing which makes an absolutely gas tight joint.

The valves are slightly staggered enabling both sets of valves to be operated by the one cam shaft. Our experience proves that side by side valves give better results in an opposed twin cylinder engine, particularly with such small cylinders. The valve caps have large cooling fins, whilst the valve stems guides are screwed into the cylinder permitting of easy replacement if necessary.



The power unit combining engine, gear box clutch and spiral drive from engine to gear box.

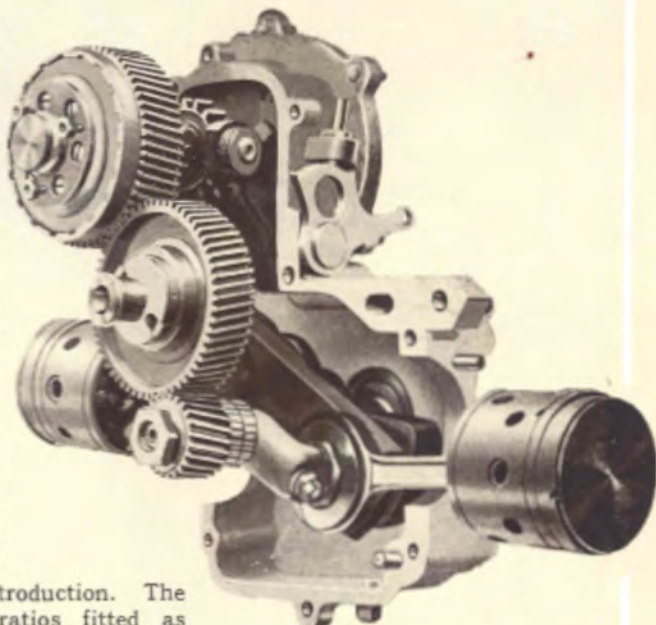
The Multiple Disc Steel Plate Clutch and 3-speed Gear

This clutch is of entirely different construction to that fitted to the 7-9 h.p. model. It consists of 13 steel discs running in oil in an oil-tight case, every alternative disc being faced with a special composition. The use of both steel and composition-faced discs has been found to give far superior results to plain steel discs only. The clutch may be very easily adjusted should occasion arise.

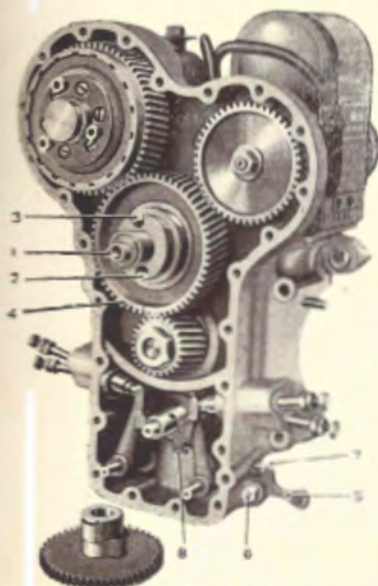
The gear box is of the sliding type, similar in design to the 7-9 h.p. model which has given such highly satisfactory results since

its introduction. The gear ratios fitted as standard are 5 to 1 on top, 8.33 to 1 on second, and 13.87 to 1 on low.

The frame is of entirely new design of the double bar trussed type. It has been tried out over a long period and has satisfactorily passed the severest tests to which it could be put.



Transmission and crank shaft assembly.

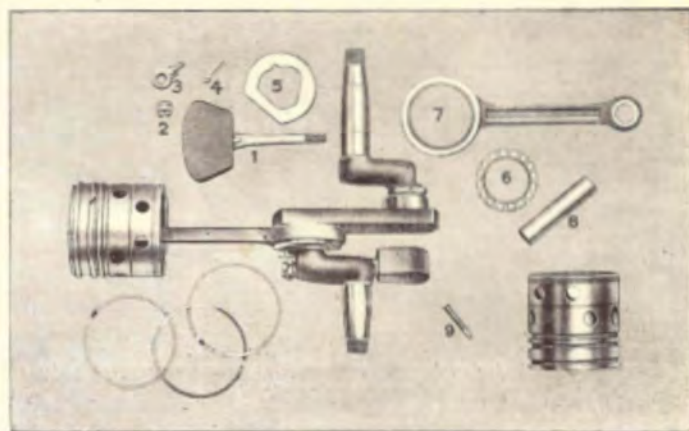


Power plant with gear cover removed.

easy steering. They are of very sturdy construction throughout, and there is no chance of side play developing in any of the moving parts in normal usage.

The 4-h.p. Model Trussed Cushion Forks

The Front Forks fitted to this model are of new design of the castor type, and make the machine extremely



Crankshaft assembly dismantled.

The Remy Electric Lighting and Ignition System

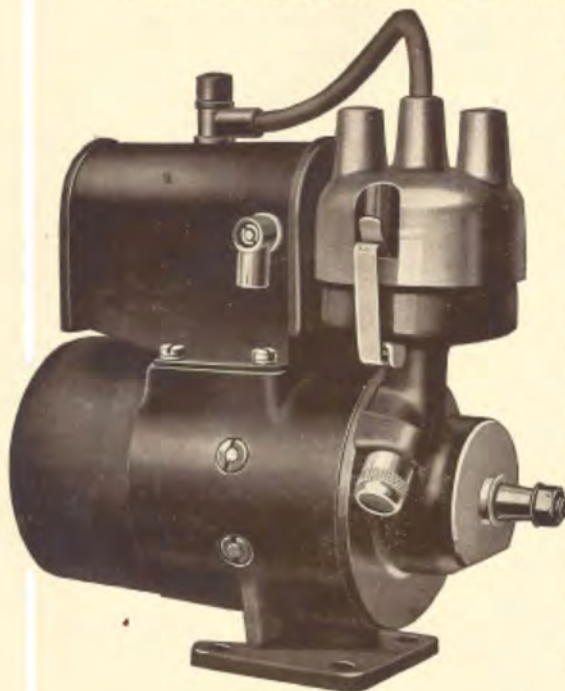
This electrical system incorporates a small generator, a storage battery, headlight, tail light, warning signal, and the necessary switches and wiring.

The Remy generator is a very simple shunt wound generator of high efficiency. The output is automatically regulated to take care of variations of load, due to the intermittent use of the lights. This eliminates the danger of the battery becoming discharged because of heavy use of lights whilst the motor-cycle is under way. The six-volt current from the generator is used for the lights, the horn, and the ignition while the engine is running, the surplus current generated being used to keep the storage battery charged.

The ignition system proper is composed of a timer and distributor operating in connection with a high tension transformer which steps up the six-volt current to sufficient voltage for ignition purposes.

A simple automatic switch controls the ignition circuit. When the kick starter is put into action this switch automatically closes the ignition circuit. When the engine stops the switch automatically breaks the circuit, breaking the

horn circuit at the same time, thereby making it impossible for anyone to sound the horn while the motor-cycle is left standing. Pressing the horn button after the engine has been stopped will indicate whether or not the automatic switch has broken the circuit.



The Remy generator is made up as a compact unit with the transformer, timer and distributor.

A storage battery furnishes current for ignition when starting the engine, and also for the small headlight and tail light when the machine is left standing. Practically the only attention the battery requires during a season's use is the maintenance of the proper level of the solution in the battery. Distilled water must be added every week to keep the solution at the right height, as a certain amount is lost through evaporation.

With the high power bulb turned on, the headlight throws a very bright light, sufficient for driving over any road on the darkest night. The small bulb is in a separate socket, and is just right for use when the machine is standing; or in localities where large headlights are prohibited. The tail light has a large red lens which can be seen easily at a distance. The tail light also projects a white light downward, making it possible to see the licence number at night. The lights are controlled by a snap switch which has all of the working parts and connections enclosed. A convenient plug socket is provided, making it easy to connect the sidecar light to the circuit, and is so arranged that the sidecar light is controlled by the one lighting switch.

The horn, which is of the diaphragm vibrator type can be heard at a considerable distance. A finger button on the handlebar enables the horn to be used without removing the hand from the grip.

A Balanced Electrical System

The Harley-Davidson Remy electrical system is a perfectly balanced system, and it must not be abused by overloading through use of larger bulbs than those supplied on the machine or by the addition of extra lights, excepting a small sidecar light of two candle power. Fuses in the switch box prevent the entire electrical circuit from damage in case of an accidental short circuit. The fuses are easily reached and readily renewed.

The electrical system is as weatherproof as any electrical system can be made. The heaviest rain will not affect the satisfactory operation of the generator, or any part of the equipment. All wires are enclosed in special braided cable or in tubing, so as to prevent damage to the insulation which might cause a short circuit or leak.

Electrically equipped Harley-Davidson motor-cycles are in service in practically every country in the world. The constantly increasing popularity of this type affords sufficient evidence that there is nothing experimental in this model. Everything is built as sturdily as possible, and there are no delicate parts to the electrical system. Apart from the slight attention required by the storage battery, this type requires no more care than any other Harley-Davidson model, in spite of the many conveniences offered.

Meeting Emergency Conditions

If the battery ever becomes exhausted, it is possible to start the engine by means of the generator. Likewise, if need be, the generator lighting system will furnish light if the battery is discharged.

General Specification

7-9 H.P. Engine

Dimensions.	7-9 h.p. 45 degrees twin cylinder. Bore 84.1 mm, stroke 88.9 mm—988.33 cubic centimeters.
Cylinders and Pistons.	Close grained iron compounded to special formula.
Valves.	Overhead inlet valves. Both inlet and exhaust valves are exceptionally large and wear has been reduced to a minimum. Both inlet and exhaust springs and tappets are entirely enclosed.
Adjustable Valve Tappets.	The lock nut is of very ingenious design and permits of the most minute adjustment. Once locked it is impossible for the adjustment to slip.
Valve Timing.	The cam wheel and four cams are cut in one piece, each valve being lifted by a separate cam.
Crank Case Air Release Valve.	This special feature entirely eliminates all noise due to pressure in the crank case, and by preventing air from being forced through main shaft bearings renders the engine exceptionally clean.
Magneto and Generator Drive	This drive is through a train of specially hardened steel pinions running on ground steel bearings, and whilst being practically noiseless ensures dead accuracy of the ignition timing.
Lubrication.	Automatic mechanical gear driven Pump also separate hand pump for emergency use.
Ignition.	Remy generator on electrically equipped models and Berling high tension magneto on other models.
Carburetter.	Schebler automatic carburetter. Separate adjustments to both petrol and air supplies can be made whilst machine is running.

Motor Cycle

Clutch.	Multiple disc, dry plate type, hardened steel discs working against special composition facing. The entire clutch is mounted on a high roller bearing which is automatically oiled from the gear box.
Gear Box.	Three speed sliding gear type of exceptionally sturdy construction, shafts mounted on roller bearings. The gear box is fitted with special interlocking device which prevents a change of gear being made without first withdrawing the clutch. Standard gear ratios: 4.9, 7.1, 11.1 to 1.
Silencer.	The silencer is designed on the latest scientific lines and reduces the exhaust to a minimum, without creating any back pressure.
Transmission.	Heavy roller chain from engine to gear box, and a second chain from gear box to rear wheel. Both chains are $\frac{3}{8}$ " width by $\frac{5}{8}$ " pitch. The front chain is semi enclosed in a metal case, and the rear chain is fitted with an effective mud guard.

Frame.	Double bar loop design. Frame fittings highest grade drop forgings. The frame has been designed and built to withstand the severest strains of sidecar use.
Starter.	Mechanical kick starter all parts entirely enclosed.
Handle Bars.	1" diameter die stamped steel. Handle bars and stems are made in one piece eliminating all brazed joints.
Control.	Double acting steel wire control enclosed within handle bars. Outer cable covered with leather where exposed.
Tanks.	Streamline petrol and oil tanks with no exposed seams and no sharp corners. The two halves of the tank are entirely separate and are bolted to the top tube of the machine. The left tank holds half a gallon of petrol and a gallon of oil, the right tank holds 1½ gallons of petrol. Filler caps are 1½" diameter. Petrol strainers are securely fitted inside each of the petrol tanks.
Brakes.	The internal expanding and external contracting double acting band brakes both operate on a steel drum 7½" diameter locked to the rear wheel. The internal expanding brake is entirely enclosed and weatherproof.
Hubs.	Harley-Davidson design throughout ¾" ball bearings to both wheels. Rear axle ¾", front axle 7/8" diameter. The rear hub has exceptionally wide spoke flanges to withstand strain of sidecar use.
Mud Guards.	Cold rolled steel 5½" wide. Front mud guard is fitted with side extensions also large flexible splasher flap.
Stands.	Both front and rear stands are fitted of very strong design easily operated.
Wheel Base.	59½".
Wheels and Tyres.	28" diameter, 40 extra heavy spokes in both wheels. 28" by 3" tyres fitted on extra heavy steel rims.
Saddle.	Special Harley-Davidson saddle on spring seat pillar. The springs are adjustable to the weight of the rider.
Toolbox and Equipment.	Metal toolbox with lock and key is fitted on top of the tank on the electrically equipped models and a similar toolbox is fitted below the saddle on the magneto models. Complete set of special spanners is provided together with tyre repair outfit, and foot pump.
Luggage Carrier.	Pressed steel of very rigid construction mounted independently of the rear axle.
Finish.	Olive brown with dark green striping.

The 4 H.P. Model

Engine ...	Horizontally Opposed.	Height of Saddle ...	28½ in.
Bore ...	69.84 mm.	Consumption	70-90 m.p.g.
Stroke ...	76.20 mm.	Gear Ratios	5, 8.33, 13.87 to 1
Capacity ...	584.02 c.c.	Ground Clearance	5½ in.
Weight ...	257 lbs.	Petrol ...	2½ gall.
Wheel Base ...	53½ in.	Oil ...	½ gall.
Tyres ...	26 x 3	Frame ...	Keystone

Guarantee

THE Company gives the following guarantee with their Motor Cycles instead of the guarantee (if any) implied by statute, or otherwise, as to the quality or fitness of such machines for the purpose of motor cycling; any such implied guarantee being in all cases excluded. In the case of machines which have been used for "hiring-out" purposes or in respect of which the Trade Mark or manufacturing number of the Harley-Davidson Motor Company, has been removed, no guarantee of any kind is given, or is to be implied. No guarantee whatsoever is authorized or recognized unless the Harley-Davidson Registration Card is properly filled in and returned to the Company, at 74 Newman Street, London, W. This is imperative, and if complied with, the Company warrant the Motor Cycle sold by them for three calendar months from date of sale, this warranty being limited to the furnishing by the Company of such parts as shall, under normal use and service, appear to the Company to be defective in material or workmanship. The Company make no warranty whatsoever in respect to Tyres, Carburetters, Magnetos, etc. These parts are warranted by their respective manufacturers, and must be sent to them for adjustment. Transportation charges on defective parts must be paid by the purchaser, and no parts will be received by the Company unless charges have been prepaid. If assembled parts are sent to the Company in which to insert new parts for defective parts, a reasonable charge will be made for labour. The Company cannot accept the responsibility in connection with any machines when they have been altered or repaired outside of their Works. No warranty is made or authorized to be made by the Company, otherwise than that herein set forth.

Important Notice.—The guarantee of Harley-Davidson frames for sidecar use is limited to service with the Harley-Davidson or duly approved sidecar chassis.

ALTERATIONS IN SPECIFICATIONS.
We reserve the right to make any alterations to the Specifications of our machines and sidecars that we may consider necessary.

ALTERATIONS IN PRICES. Owing to the conditions now prevailing, the prices in this Catalogue, although correct at time of going to Press, are liable to alteration without notice.



Harley-Davidson Factory, Milwaukee, Wisconsin, U.S.A.