

KAWASAKI TRIPLES SERVICE BULLETINS



Bulletin#: 74 Gen-3

Date: Nov. 27, 1972

Bike(s) affected: S2, H1, H2

Subject: **New brake pad with shim to eliminate squeal or howling**

Action taken:

Disc pad "A," that moves with the caliper, has been redesigned. Old pad, part #43050-001, is no longer used. New pad, part #43050-002, with shim, #43076-001, should be used. This new pad is factory installed on frame number S2T-00001, KAF-58413, H2F-10491, and up.

Bulletin#: 73 Gen-4

Date: Jan. 24, 1973

Bike(s) affected: H1-B, H1-D, H2, S2-A, F11, Z1

Subject: **Axle clamps and speedometer cable**

Action taken:

Reminder to mount front axle clamps so that there is no gap at the front of the bike, and an even gap toward the rear. On the S2-A it is recommended that the speedometer gearbox be positioned to point back at the cylinder head before the nuts are tightened. S2T-0931 and up has a spot of yellow paint on the speedometer gearbox and the left hand outer fork tube to aid alignment. Once positioned, the front nut is tightened first, then the rear, both to 14 ft lb.

Bulletin#: 73 Gen-5

Date: Jun. 21, 1973

Bike(s) affected: All

Subject: **Oil pump lockplate**

Action taken:

PROBLEM: There has been a tendency for the oil pump banjo bolts to loosen. This allows oil to leak into the side cover instead of into the intended cylinder, resulting in overheating and seizure.

CORRECTION: To correct the problem a new lock plate/gasket (P/N 92024-058) has been designed to keep the three outlet banjo bolts from loosening. This gasket has been used on all S and H series from S1E-10965, S2E-41105, KAE-83625, H2E-30126 and up.

The lockplate replaces the top gasket washers and should be torqued to 24 kg-cm (20 lb in).

Bulletin#: Gen-9

Date: Sept. 10, 1973

Bike(s) affected: H2

Subject: Oil pump adjustment

Action taken:

PROBLEM: Some mechanics think that the adjustment of the oil pump control lever is "subject to tuning" for special conditions or to offset other problems.

IMPORTANT: There have been only two cases where Kawasaki specified a nonstandard pump setting because of over oiling: 1. The original H1 oil pump, which is not marked on the lever. (H-1-2 Sept 9, 1969). 2. The original F5 oil pump, marked "F5" on the control lever.

On later production models, reduced output oil pumps have been incorporated. These later oil pumps must be adjusted in the normal "MATCH-MARKS" manner to prevent overheating, early wear, and potential piston seizure.

All Kawasaki 2 stroke motorcycles use either SUPERLUBE, or INJECTOLUBE systems. The oil is pumped to the engine at a specific rate determined by a combination of RPM and throttle opening.

Each model has a pump specifically designed to supply adequate oil flow to the engine without causing excessive smoke or fouling plugs.

ADJUSTMENT PROCEDURE: All oil pumps are adjusted only after the carburetor is properly adjusted. With the throttle fully closed, the mark on the oil pump lever should align with the mark on the oil pump body just as the throttle valve starts to open in the carburetor.

OIL PUMP IDENTIFICATION

Part Number	ID Mark	Models
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16082-034	S1	S1A,S1B
16082-030	S2	S2 to S2E-16292
16082-041	S2-2	S2 from S2E-16293
16082-051	S3	S3
16082-017	No Mark	H1,H1A,H1B & H1C to KAE-62287
16082-040	H1-1	H1B & H1C from KAE-62288, H1D,H1E
16802-033	H2	H2 to H2E-00607
	H2-2	H2 from H2E-00608 to H2E-16086
16082-042	H2-3	H2 from H2E-16087

Bulletin#: 73 Gen-10

Date: Sept. 20, 1973

Bike(s) affected: All

Subject: Oil tank vent tube routing

Action taken:

PROBLEM: If the oil tank vent tube becomes pinched, a vacuum is created in the oil tank which does not allow the oil pump to deliver oil.

SOLUTION: Careful routing of the oil tank vent tube so that it cannot be pinched or melted will ensure that the lubrication system functions properly. Also, if the oil tank cap is replaced on a model which has no vent tube, the replacement cap must have a vent hole. Note: The H1B and H1C have unvented caps and cannot be used on H1 and H1A.

S1,S2,S3: Bring the vent tube back over the frame tube and along the rear fender to the left side of the motorcycle. Run the tube forward under the rectifier and insert the end into the LH engine cover.

H1D,H1E: Run the vent tube forward from the oil tank and down between the air cleaner and battery to the left side of the motorcycle. Feed the tube into the hole in the LH engine cover.

H2: Allow the vent tube to arc gently down behind the oil tank and feed the end through the rubber guide near the bottom of the rear fender.

Bulletin#: 74 Gen-13

Date: Feb. 15, 1974

Bike(s) affected: All

Subject: **Tires**

Action taken:

Tread pattern was changed for 1974 model year. Photos included in bulletin.

Bulletin#: 74 Gen-16

Date: Oct. 30, 1974

Bike(s) affected: H1, H2, S3

Subject: **Fork disassembly**

Action taken:

The fork damper cylinder cap on 1974 models is not machined to accept the fork cylinder holding tool used in prior years. Caps in 1975 models will accept the holding tool. This bulletin suggests removal of the allen bolt before any other disassembly. Fork spring tension on the cap should prevent rotation. The use of a 12 point 1/2" socket with appropriate extension may be required as a substitute for the holding tool. Three pages with illustrations are included.

Bulletin#: 74 Gen-17

Date: Dec. 06, 1974

Bike(s) affected: H1D, H2A, S2A, Z1

Subject: **Fork noise**

Action taken:

Owners have reported an occasional clunking noise from the front forks when the front wheel hits a rough break in the riding surface, such as a hole in the pavement, railroad crossing, or driveway entrance. The noise is NOT caused by any loose, broken or defective front end components. It is caused by the fork oil flow characteristics thru the damper cylinders during short, rapid fork strokes. New style fork damper cylinders were developed to eliminate the noise and improve performance in 1974 models.

Model	Damper Cap	Piston	Cushion Spring	Valve	Fork Piston	Cylinder	Cylinder Base
"S" New	Closed Top	No Ring	30mm Long	Steel	44018-009	Steel 17mm	Alum 22mm

"S" Old	Open Top	No Ring	33mm Long	Aluminum	44018-001	Alum 13mm	Alum 18mm
"H" New	Closed Top	Phenolic Ring	30mm Long	Steel	44018-009	Steel 17mm	Alum 22mm
"H" Old	Open Top	No Ring	33mm Long	Aluminum	44018-003	Alum 13mm	Alum 18mm

Description	Old P/N	Model	Interchange	New P/N	Model
Front Fork Assembly	44001-090-21 44001-105 44001-097-21	H2A H1D S2A	←< x→	44001-124 44001-131 44001-144	H2B H1E S3
Damper Cylinder Assembly	44022-007 44022-007 44022-011	H2A H1D S2A	←x→	44022-027 44022-027 44022-026	H2B H1E S3
Damper Cylinder Set		H2A H1D S2A	←<	Update Kit 44023-006 44023-006 44023-005 Incl fork piston & circlip	H2B H1E S3
Fork Piston	44018-003 44018-003 44018-001	H2A H1D S2A	←x→	44018-009	H2B, H1E, S3
Fork Circlip	44044-008	H2A, H1D, S2A	←x→	44044-019	H2B, H1E, S3

Spec Change	Year	H2	H1	S2,S3
Fork Oil Capacity (cc)	'73	160	170	150
	'74	175	170	145
Oil Level from Top of Tube (mm)	'73	403	417	347
	'74	379	385	345

Bulletin#: 2/Gen-2

Date: Apr 23, 1976

Bike(s) affected: All 1976 models

Subject: Sparkplugs

Action taken:

With the 1976 model year, different spark plugs were specified for several models. The change was from an NGK competition type electrode to an NGK standard type electrode. Both have a copper cored center for a wide operating heat range. The number designation on the plug tells which type electrode the plug has. The "C" in B9HCS indicates competition electrode. B9HS does not have competition electrode. The "S" in both numbers indicate copper core. The competition electrode is slightly more recessed than standard. The NGK standard plug may be substituted for an competition electrode plug if the heat range is the same.

Bulletin#: 2/Gen-3

Date: Apr. 23, 1976

Bike(s) affected: All

Subject: Brake lever adjustment

Action taken:

FREE PLAY ADJUSTMENT

On all hydraulic disc brake systems, lever or pedal free play is adjustable. Free play is necessary to insure that the master cylinder piston returns to its rest position. If the piston does not return all the way, it may not uncover the relief port. This could cause the brake to drag by not completely relieving fluid pressure in the system.

INSUFFICIENT FREE PLAY MAY CAUSE BRAKE DRAG

The front brake lever rests against an eccentric cam pin on the end of the adjusting bolt. Turning the bolt moves the cam pin, which changes the lever's rest position and free play.

If the locknut is run all the way back to the adjusting bolt's head, and the bolt is turned all the way up into the master cylinder body, the lever may rest against the bolt's threads instead of the cam pin. This will hold the lever away from its correct rest position, which could keep the master cylinder piston from uncovering the relief port.

Bulletin#: 2/ Gen-6
Date: May 06, 1977
Bike(s) affected: All
Subject: **Brake pad shim installation**

Action taken:

The brake pad shim loads the trailing edge of the pad to help prevent brake squeal. Installed incorrectly, the shim will cause excessive squeal. Shims should be installed behind pad "A" toward the front of the motorcycle.

Bulletin#: 2/Gen-7
Date: Jul. 8, 1978
Bike(s) affected: All
Subject: **Exhaust stud replacement**

Action taken:

Exhaust studs, particularly on rubber mount engines, are subjected to extreme forces during high engine rpm. Under these conditions the studs may become overstressed and break. The factory has designed new higher strength chrome moly studs for greater durability.

Description	Old P/N	Remarks	New P/n	Remarks	Effective ID
Stud, 8x25mm	172G0825	Carbon Steel	92004- 1008	Chrome Moly	H1, KH500, H2
Stud, 8x35mm	172G0835	Carbon Steel	92004- 1009	Chrome Moly	S1, S2, S3, KH400*
					*used in production KH400 from S3E09905

Note: Do not over tighten rear muffler mountings on motorcycles with rubber mounted engines.

Bulletin#: H-1-2
Date: Sept. 9, 1969
Bike(s) affected: H1
Subject: **Oil Pump Adjustment**

Action taken:

With the H1 it is necessary to adjust the oil pump so that it starts to open when the slides have been raised 1/8 inch. Sometimes the inner cable is too short to allow this. The lock nut from the adjuster for the oil pump can be placed on the opposite side of the holder to gain clearance. If this is still not enough, the retaining tab on the pump can be ground away and a new tab made from cutting and bending the pump's plate.

Bulletin#: Emergency Bulletin #2
Date: December 8, 1969
Bike(s) affected: A-series, H1
Subject: **CDI spark plugs**

Action taken:

Some of the A-series and H-1 models have been shipped from the factory with the incorrect spark plug installed. Champion L-19V may be installed, which can cause hard starting. The correct plug is the Champion UL-19V surface gap plug with Booster Gap.

Bulletin#: **73 H-1**
Date: Jul. 14, 1972
Bike(s) affected: H1
Subject: **Replacing plain 6mm exhaust flange stud with stepped 6mm x 8mm stud**

Action taken:

H1's before engine #03138 must continue to use 6mm stud, part #172G0622, as these cylinders have helical threaded inserts. H1's after engine #03138 must use 6mm x 8mm stepped stud, part #172G0822.

Bulletin#: **73 H-2**
Date: Jan. 14, 1970

Bike(s) affected: H-1

Subject: High Tension Wiring Kit

Action taken:

A redesigned ignition wire assembly has been issued using Furukawa instead of Daichi ignition wires, and a redesigned oil pump cover. (The "high" oil pump cover.) The installation was begun after engine #8800, but the pump cover did not incorporate a drain grommet until # 11300. The part number for the replacement kit is #99990-015. The parts replaced are as follows:

Ref. Number	OLD	NEW	Part Name	Remarks
1	14030-013	14030-025	Oil pump cover	With notch
2	92071-032	92071-043	H.T. cord grommet	
3	14030-014	14030-024	Oil pump lever cover	Plastic instead of aluminum
4	920115-001	92115-002	H.T. cord protector	L=120mm instead of 145mm.
5	92071-031	Same part	Dist. cap grommet	2 per bike
6	New Part	16116-005	Drain Grommet	Used after engine #11300
7	21150-001	21150-002	H.T. cord assembly	Includes 4 cables and vinyl boot
8	92114-002	Not Used	Cord Protector Clip	Not used in new kit

Bulletin#: 73 H-3

Date: Aug 1, 1972

Bike(s) affected: H1

Subject: Q-D rotor and dist. for H1

Action taken:

Removing the distributor rotor from an H1 has been a time consuming job, because the mechanic must first take off the right engine cover to get at the screw holding the rotor to the distributor shaft. We have also had some difficulty with arcing from the rotor tip to the attaching screw.

There are two different corrective measures for this problem:

All H1's before engine #8801:

These units have the early distributor shaft and black rotor which is secured by a bolt and lock plate. The heavy duty (H.D.) rotor made of brown plastic should be used for repair. This rotor is held on the distributor shaft by a spring clip and pressure from the center brush in the distributor cap. Installation is as shown below:

(Two image, plus these captions)

Removing black rotor:

Break off the rotor arm on the same side as the bolt. Crack and remove the insulator disc. Take out the bolt with a 7mm wrench.

Installing brown rotor"

Fit a new disc. Align the H.D. rotor tip 1/4 turn to the right of the flat on the shaft, and then push it on.

All H1's after engine #8800:

These later units incorporate a new green rotor and quick-detach distributor shaft. The shaft is fitted with a snap-ring that retains an internal groove in the rotor. The hole in the insulating disc is increased from 28mm I.D. to 31mm I.D. because the green rotor has a larger diameter sleeve. Removal and installation of the new rotor is shown below:

(Two image, plus these captions)

To remove:

Turn the rotor so it points as shown. (Back is toward the oil pump) Pry on opposite sides of the rotor with two large screwdrivers and it will pop off.

To install:

Align the rotor tip with the flat on the shaft. Tap the rotor with a plastic mallet. You should hear a definite SNAP when the rotor groove engages the shaft's snap ring. Make sure the rotor is fully engaged with the snap ring before installing the distributor cap, or else the rotor will back out and damage the cap.

New Gasket:

Kawasaki has a new gasket to improve the sealing of the distributor chamber. It fits between the engine cover and insulator disc, and was incorporated on H1's after engine #11300.

Parts Supply

All H1's before E #8800 (with black rotor and old shaft.)

Part Number		Part Name	Remarks
Old	New		
21142-001	21142-003	H.D. Dist. Rotor	Brown, Replaces black rotor
21144-001	Same	Insulator disc	28mm I.D.
92011-016	Discontinued	Hex head bolt	Not required
92024-013	Discontinued	Lock washer	with H.D. rotor
H1's after E #8800. (With new distributor shaft.)			
21142-001	21142-002	Q-d Dist. Rotor	Green, used only with Q-D shaft
21144-001	21144-002	Insulator Disc	31mm I.D.
21143-001	21143-002	Q-D Dist. Shaft	Snap ring groove
New Part	92036-016	Snap Ring	
All H1's.			
New Part	92065-072	Sealing Gasket	Behind insulator disc

Installation of new parts in early H1: To install the new distributor shaft in an H1 before E #8800, order the necessary parts and proceed as follows:

- a. Shift the transmission to 4th or 5th gear and turn the rear wheel until the right piston is at TDC. Remove the oil pump cover and take off the distributor cap. The rotor should be pointing to the T-zone on the right engine cover.**
- b. Unfasten the oil pump from the right engine cover by removing the two screws. Take out the 12 screws holding the right engine cover to the crankcase. Take off the kickstart lever, and then remove the engine cover.**
- c. Inside the engine cover-remove the nut, lockwasher, and flat washer from the distributor shaft. Pull the drive gear off the shaft- pull the dowel pin out of the shaft with a pair of side cutters, and then withdraw the distributor shaft from it's bearings.**
- d. Insert the new distributor shaft into the bearings. Push the dowel pin into the shaft, and then install the drive gear with the collar facing the bearing. Secure the gear with the flat washer, lockwasher, and nut.**
- e. Install the gasket and insulator disc in the engine cover. Wipe a thin film of grease on the snap ring, then use a plastic mallet to install the rotor on the shaft.**
- f. Ascertain that the right piston is still at TDC. Fit the right engine cover to the crankcase while turning the rotor to mesh the drive gears. After pushing the right engine cover fully onto the case, the rotor tip should point to the T-zone on the cover. NOTE: the rotor doesn't have to be fully centered in the T-zone, since it does not govern engine timing.**

g. Install the 12 engine cover screws, kickstart lever, oil pump, distributor cap and gasket, and oil pump cover.

Bulletin#: 73 H-4

Date: Dec. 5, 1972

Bike(s) affected: H1

Subject: Testing H1 generator rotor

Action taken:

Resistance between the slip rings should be between 3.5 and 5.5 ohms. Resistance between the core (center) of the rotor and either slip ring should be infinite. A test for defects under load requires setting tester (Kawasaki's tester) to 12A and inserting red lead into "+12A" hole. Connect read lead to the positive terminal on a six volt battery. A 12 volt battery will damage the rotor. Connect negative battery lead to a rotor slip ring. Momentarily connect black lead to the other slip ring. If the rotor rises to 1.1-1.7 amps, it is good. If it swings wildly, it is shorted. An alternate testy is to connect the leads from the six volt battery to each slip ring for 30 seconds, then measure resistance. If outside the acceptable range, the rotor is bad.

Bulletin#: 73 H-5

Date: Dec. 25, 1971

Bike(s) affected: H1B

Subject: H1B Air Cleaner Silencer

Action taken:

Some initial shipment H1B's were shipped without air silencers. All H1B's are to be equipped with silencer #11016-004 and associated hardware.

Bulletin#: H-5

Date: Aug. 22, 1971

Bike(s) affected: H1

Subject: H1 Drive chain

Action taken:

After frame #42003 the H1 has a heavier duty drive chain, EK50SH-T, replacing DID50HDS. The new chain is part #92057-009, the old is part #92057-005. The master links are not interchangeable, and must be used with each chain. The new link is part #92058-015, the old is part #92058-12. The new chain is wider and

requires the chain guard be mounted outside the swing arm dust cover cap. Failure to do so could cause the chain to catch and knock off the master link clip when the motorcycle is rolled backward.

Bulletin#: 73 H-6

Date: February 29, 1972

Bike(s) affected: H1, H2

Subject: **Shop Manual Errors**

Action taken:

Numerous corrections to be made to the H Series Shop Manual.

Bulletin#: 73 H-7

Date: March 28, 1972

Bike(s) affected: H1-B

Subject: **Steering Damper**

Action taken:

The disc brake equipped model H1-B has a 5-position adjustable telescopic hydraulic steering damper. The "stiffness" of steering damping can be increased by turning the damper knob to a higher number. With the damper in the #5 (hardest) position, the push-pull force can cause the damper rear frame stanchion to flex and bend.

A reinforced bracket must be installed to prevent flexing, part #32056-012.

Use this procedure to install the bracket:

A. Remove the nut and lockwasher holding the steering damper to the frame stanchion.

B. Take out the right hand bolt and lockwasher from the horn bracket.

C. Fasten the long side of the reinforcing damper bracket to the frame with the horn bolt and lockwasher. NOTE: use a plain washer (Part #411B0800) over the new bracket and don't tighten the bolt completely yet.

D. Hold the other end of the bracket over the stanchion, insert the damper stud, and install the lockwasher and nut. Now, tighten the horn bolt and the damper nut.

Bulletin#: 73 H-8

Date: April 30, 1972

Bike(s) affected: H2

Subject: H2 engine mount shims

Action taken:

H2 motors can loosen in their frames, causing additional vibration and in extreme cases fracturing the engine mounts. The frame lugs have 1.0-1.5mm clearance with the engine mount bosses for easy removal. These lugs are meant to be pulled in by the mounting bolts. It has been found these lugs take a set, relieving tension on the mounting bolts. Engine mount shims must be used on H2's before H2-09082.

Installation has been done at the factory for H2's after H2-09082. The rear shim is 38mm long, the front is 20mm long. When installing, check the clearances between the engine bosses and frame lugs. (Picture shows the bottom 2 mounts the ones to be checked.) Insert the correct sized shims, and tighten the 10mm bolts to 25 lb-ft of torque, and the 8mm bolts to 15 lb-ft.

Shim Sizes		
Front/Rear	Part #	Size
Front	92025-048	0.5mm
Front	92025-049	0.8mm
Front	92025-050	1.0mm
Front	92025-051	1.6mm
Front	92025-052	2.0mm
Rear	92025-053	0.5mm
Rear	92025-054	0.8mm
Rear	92025-055	1.0mm
Rear	92025-056	1.6mm
Rear	92025-057	2.0mm
Rear	92025-058	2.3mm

Bulletin#: 73 H-9

Date: May 17, 1972

Bike(s) affected: H2

Subject: H2 rectifier

Action taken:

An H2 not driven frequently may discharge the battery, because of a slight drain on the battery from two small resistors. A supplemental rectifier has been developed to stop this leakage. The new part, part #21061-014 must be installed on H2's through

H2E-13265. H2's H2E-13266 and up have this installed from the factory. (It is installed between the red lead from the regulator and the battery.)

Bulletin#: 73 H-10

Date: June 1, 1972

Bike(s) affected: H1

Subject: H1 rear wheel spokes

Action taken:

H1's after KAF-47245 use different rear wheel spokes to increase strength. 1969-71 H1's can break wheel spokes if pushed hard. The new spokes increase in gauge from #9 to #8 at the rear wheel.

Part numbers are as follows:

Parts Information	Straight Type	Stepped Type
Inner	41027-012	41027-047
Outer	41028-013	41028-046
Gauge	#9	#8/#9
Diameter	3.5mm	4.0/3.5mm

Bulletin#: 73 H-11

Date: Jun. 15, 1972

Bike(s) affected: H2

Subject: H2 Primary Pinion Nut

Action taken:

A knocking sound on H2's from the right engine cover sounds like a worn or loose clutch. The knocking is caused by play between the crankshaft, primary pinion, and woodruff key. The "crush" area of the lock washer is very small, so the pinion is relieved of nut tension, allowing it to twist on the crankshaft and hit the woodruff key. To correct the problem a new, larger 29mm nut (part #92016-043) has been used after H2E-05228 to replace the older 27mm nut. (Part #92016-028)

Bulletin#: 73 H-12

Date: July 29, 1972

Bike(s) affected: H1B

Subject: H1-B ignition timing

Action taken:

There has been some confusion concerning the proper ignition timing of the H1B. It is the purpose of this bulletin to clear up this situation. Optimum ignition timing for the H1-B is 23 deg. (2.94mm) BTDC. However, as the graph below (not copied here) shows, if new points are initially set at 23 deg. they will soon retard 1 deg. because of rubbing block wearing-in, and then advance to more than 25 deg. (from contact erosion) where detonation causes piston holing and severe engine damage. Since engine performance varies little from 19 deg. to 25 deg., the factory recommends that new points be set at 20 deg. BTDC (2.23mm). From this setting the timing will advance to 23 deg. by itself in a matter of a few thousand miles. After 3000 miles, point wear levels off, so that when the points are adjusted after that time, they should be set at 23 deg. until they are replaced. If plug fouling and sluggish performance is a serious problem on a new H1-B, advancing the timing to 23 deg. right away may solve the problem, but it will be necessary to check and adjust the timing frequently during the first few thousand miles to prevent engine damage due to over advanced timing.

Bulletin#: 73 H-13

Date: August 30, 1972

Bike(s) affected: H2

Subject: H2 Rear brake modification

Action taken:

On early H2's there is a tendency for the brake pedal to bounce up and down when the brakes are applied on rough surfaced road. This is due to the length of the brake cam lever and associated geometry. The factory has redesigned the rear brake linkage parts to give a more positive brake feel. The torque link has been lengthened, the brake rod now has a 5 deg accommodation bend in it, and the brake cam lever and the brake pedal shaft lever have both been shortened. These changes greatly improve breaking smoothness without affecting overall brake leverage. The new parts had been incorporated on H2's after frame #H2F-05214. These parts are interchangeable as a set of four on any early H2. They are standard and must be used as replacement on all H2's frame #H2F-05215 and above.

Description	New Part No.	Remarks	Old Part No.	Remarks
Torque Link	43007-033	388mm	43007-027	348mm
Brake Rod	43011-013	Bent	43011-009	Straight
Brake Cam Lever	42029-021	80mm	42029-017	120mm

Brake Pedal	43004-010	50mm	43004-009	76mm
Shift Lever				

Bulletin#: 73 H-14

Date: Sept. 20, 1972

Bike(s) affected: H2

Subject: High speed wobble

Action taken:

PROBLEM: There have been isolated complaints concerning the tendency of some H2's to wobble at high speeds on a straight course. This is especially a problem to the rider who wishes to participate in road racing, drag racing, or other applications where speeds in excess of 80 mph are encountered.

CORRECTION: Based on the finding of an extensive testing program, it is suggested that the original 3.25-19 Yokohama Y-623 front tire be replaced with a new type Dunlop H3.25-19 F6 tire. Thousands of test miles on a number of different H2's, under widely varying road and speed conditions, have shown that this new tire definitely improves the H2's high speed handling characteristics.

ADDITIONAL MEASURES:

A. WHEEL TRUING: After mounting a new tire, making sure that all spokes are tight, adjust the lateral and radial runout. Standard lateral runout is 1mm (.04") with a service limit of 3mm (.12"). Standard radial runout is also 1mm, but the service limit is 2mm (.08").

B. WHEEL BALANCING: Balance as carefully as possible to ensure maximum wheel stability at all speeds.

NOTE: *Be sure that the wheel turns freely on its bearings before attempting to balance it.*

C. AXLE TORQUE: Make sure the front axle is tightened to 55 lb ft (7.5 kg-m). Several cases of speed wobble have been traced to loose axles. **NOTE:** To ensure accurate torque measurement, use a torque wrench and an Oil Pump Pinion Socket, P/N 99990-064. These sockets fit the flattened ends of the H2 axle perfectly.

D. REAR TIRE: In some cases, an excessively worn back tire will contribute to high speed wobble. Any such tire should be replaced if instability is to be cured completely.

E. TIRE PRESSURE: Check to see that both tires are inflated to proper pressure: 26 PSI front, 31 PSI rear.

Bulletin#: 73 H-15

Date: Oct 1, 1972

Bike(s) affected: H1

Subject: H1 engine mount shims

Action taken:

H1 motors exhibiting high vibration should have engine mount shims installed. These are the same shims used on the H2. Installation has been done at the factory for H1's from frame number H1F-00001. The rear shim is 38mm long, the front is 20mm long. When installing, check the clearances between the engine bosses and frame lugs. (Picture shows the bottom 2 mounts the ones to be checked.) Insert the correct sized shims, and tighten the 10mm bolts to 25 lb-ft of torque, and the 8mm bolts to 15 lb-ft.

Shim Sizes		
Front/Rear	Part #	Size
Front	92025-048	0.5mm
Front	92025-049	0.8mm
Front	92025-050	1.0mm
Front	92025-051	1.6mm
Front	92025-052	2.0mm
Rear	92025-053	0.5mm
Rear	92025-054	0.8mm
Rear	92025-055	1.0mm
Rear	92025-056	1.6mm
Rear	92025-057	2.0mm
Rear	92025-058	2.3mm

Bulletin#: 73 H-16

Date: Oct. 20, 1972

Bike(s) affected: H1, H2

Subject: Oil pump modification

Action taken:

PROBLEM: There is a tendency for some three cylinder models to smoke excessively from one exhaust pipe. On the H1 and H2, it is usually the right cylinder that is affected.

CAUSE: This problem has been traced to faulty O-ring seating in the oil pump end cover. After installation, the two O-rings inside the cover shrink approximately .1

to .2mm in diameter. This shrinkage allows oil to seep around the seals and into the end cover chamber. From this point, the excess oil is pumped to the right cylinder which is serviced by the end cover orifice, resulting in smoking and premature sparkplug failure.

It should be noted that other symptoms may indicate oil pump malfunction, such as right hand piston seizure. This may be caused by oil being forced back into the main pump body through defective O-rings. As a result, the right cylinder is starved for oil, and this situation will eventually lead to seizing.

CURE: To remedy this problem, the oil pump end cover has been redesigned to prevent oil seepage.

A. The radius in the end of the cover has been decreased in depth to give the O-rings less "squish" space.

B. The bottom radius has been eliminated.

C. The internal diameter of the chamber has been decreased from $14.0\pm.1\text{mm}$ to $13.7\pm.05\text{mm}$ to compensate for shrinkage.

D. A slight shoulder has been added to the chamber base to further compress O-ring.

A conversion kit is available to correct older model oil pumps. The kit consists of two mounting screws, two O-rings, and a new oil pump end cover. These parts will fit all three cylinder oil pumps. Conversion kit P/N 99990-016. **IMPORTANT:** Whenever an oil pump is disassembled for any reason, the O-rings must be replaced. The end cover O-rings are P/N 16090-002.

NOTE per Dave Ray:

This issue wasn't about diameter of the O ring as much as it was about the "crush" distance of the O ring between the oil pump body sealing surface, and end cap sealing surface

This was/is a common problem with the H and S series pumps. The sealing O rings on the output cap end of the pump get "sacked" (make themselves into an oval, and decrease in overall diameter, and allow pumped oil to migrate back into the pump chamber, away from the output port. What the factory did, in effect, was to devise a revised replacement end cover and send new O rings with it, in a kit listed by p/n above. The revised cover literally had a smaller area and profile that would not allow the O ring to become compressed, eliminating the back leak from the outlet port to the pump chamber. This restored correct oil metering to the right cylinder, if I remember which one it was correctly, from memory.

What all this means is, the end cover was trimmed down and the radius inside it reduced, to hold the O ring in more tension, and not allow it to change shape and leak. This can be done to early non-modified end caps as well, simply trim about 0.80 to 1.00mm (appx. .032 to .040 inch) off the mating surface of the end cap, and install a new O ring, should work as well as the factory modified cover, and clear up the problem/issue. I used to cut the end cap on a lathe, but, since then, I have made a fixture for my milling machine that holds the cap with the sealing end upwards, and plunge cut the end of the cap with a mill boring tool/index head. Sounds complicated, and care MUST be used to get the cut right, so the end cap/O ring seals correctly, but it isn't rocket science/brain surgery.

DO NOT MODIFY THE OIL PUMP BODY, NOR THE GREEN ANODIZED PISTON GUIDE SLEEVE INSIDE IT, THEY ARE NOT THE PROBLEM.

A very crude visual example of what happens is such:

Take your index finger and thumb, and make a circle of them, THIS is what the O ring looks like new. To replicate what the O ring does, extend both that index finger and thumb, and move them straight out from your palm, parallel with each other, spaced apart, creating two flats of the finger/thumb. Both flats are what happens to the O ring, becomes flat on the sealing sides (body to cap), reducing the sealing tension on the O ring, allowing the leak. The modded cover simply puts more "squish/crush tension" onto the O ring itself.

Bulletin#: 73 H-17

Date: Nov. 13, 1972

Bike(s) affected: H1, H2

Subject: Improved front fork oil seal and dust shield

Action taken:

From KAF-62467 and H2F-19037 on up there has been installed improved fork seals and dust shields. (Double lip oil seal, dust shield with two angles in the top rather than one.)

	Old	New
Dust Shield	44010-018	44010-021
Oil Seal	44009-012	44009-014
I.D. Mark	RSD	TB4

Bulletin#: 73 H-18

Date: Nov. 17, 1972

Bike(s) affected: H2

Subject: Modified oil pump

Action taken:

Graph to correspond with carburetor changes in service bulletin # 73 H-19, the oil pump has been modified for slightly reduced flow. Old pump, part #16082-033, labeled "H2-1" or "H2-2" is not to be used. New pump, part #16082-042, "H2-3" is to be used. This is a factory installation from H2E-16078.

Bulletin#: [73 H-19](#)**Date:** January 18, 1973**Bike(s) affected:** H2**Subject:** **H2 carburetor modifications****Action taken:**

By monitoring warranty records, it has been determined that carburetor jet needle breakage is a recurring problem on many H2's. This failure results from the combination of throttle valve bore wear and engine vibration. In some cases the broken jet needle becomes lodged in the engine, causing severe engine damage. To remedy the problem of jet needle breakage and reduce the possibility of engine damage, the three original carburetors must be replaced with new type carburetors designed specifically to eliminate this problem. The new carburetors incorporate a redesigned light weight throttle valve slide, a heavier return spring, a modified spring seat, and a steel throttle valve guide pin. All other component parts remained unchanged from the "H2-2" type carburetor. The carburetors must be replaced on all H2's below H2E-23846.

Description	Old Parts		New Parts		Effective
	Old Part #	Remarks	New Part #	Remarks	H2E-23846
Carb. Assy. L.H. + C.	16001-135	"H2"	16001-192	"H2-4" Steel guide pin	
	16001-163	Nylon plastic guide pin			
Carb. Assy. R.H.	16001-148	"H2"	16001-193	"H2-4" Steel guide pin	
	16001-164	Nylon plastic guide pin			
Spring-Throttle Valve	16006-012	Inside Diameter: 23.6mm	16006-021	Inside Diameter: 21.7mm	
Spring Seat,	16007-	Has a slot in it.	16007-	No slot	

Throttle Valve	017		021		
Valve, Throttle	16025-047	Silver colored brass	16025-058	Green anodized aluminum	

The new carburetors incorporate the following revised settings. This second change obsoletes previous changes and only the "H2-4" carburetors have been used in production since engine number H2E-23846. (Settings are same as for the H2-2 carburetors.)

Bulletin#: 73 H-20

Date: Jan. 10, 1973

Bike(s) affected: H1, H2

Subject: H1/H2 gearchange assembly

Action taken:

Early H1 models used a gear change lever with a toothed lever staked to a rod, which would work loose. The new assembly is welded, and used on H1's after KAE-43902 and all H2's.

Description	Old Part #	Remarks	New Part #	Remarks
Gearchange Lever Assembly	13164-014	Staked w/collar	13162-008	Complete Asm incl 92026-068 & 92027-121
			13161-024	Lever Only
Collar			92027-121	
Spacer	92022-111	Flat	92026-068	Shaped

Bulletin#: H-20

Date: Nov. 17, 1972

Bike(s) affected: H2

Subject: H2 Carburetor Settings

Action taken:

To improve gas mileage, new carburetor settings have been used.

Part	Old	New
Part #	16001-035 (L +C) 16001-048 (R)	16001-163 (L+C) (16001-164 (R)
Main Jet	105R	#97.5R
Jet Needle + Clip	5FL14-2nd	5EJ15-3rd
Needle Jet/Primary Choke	#O-6/2mm	#O-6/8mm
Throttle Valve Cutaway	#2.5	#2.5
Air Screw	1-1/4 turns out	1-1/2 turns out
Pilot Jet	#35	#35
Starter Jet	#40	#70
Air Jet	0.5mm	0.5mm
Carb I.D. Mark	H2	H2-2

Bulletin#: H-21

Date: Dec. 20, 1972

Bike(s) affected: H1, H2

Subject: **H1/H2 gearchange assembly**

Action taken:

Early H1 models used a gear change lever with a toothed lever staked to a rod, which would work loose. The new assembly is welded, and used on H1's after KAE-43902 and all H2's.

Old Assembly	Part #	New Assembly	Part #
Pedal Return Spring	92083-002	Pedal Return Spring	92083-002
		Collar	92021-121
Flat Washer	92022-111	Spacer	92026-068
		Shim	92022-150
Rubber Cap	13080-004	Rubber Cap	13080-004
Gearchange Lever Assembly	13164-014	Gearchange Lever Assembly.	13164-024

Bulletin#: **73 H-21**

Date: Feb. 12 1973

Bike(s) affected: H1, H2

Subject: **Transmission Adjustment**

Action taken:

On early H1 and H2 models there have been problems of gear engagement from excessive play in the stationary gears on the drive and output shafts. Several shims have been added to the transmission to correct specific problems. These changes have been incorporated to all H1's from KAE-59017 and up, and all H2's from start of production. For H1's and H2's that jump out of gear or fail to engage correctly, corrective action may be taken in the following manner:

Corrective action for 4th gear.		
<p>1. Insert a 0.5mm shim (Part #92022-144) between second gear and the bearing on the drive shaft. The shim goes between the bronze (Part #92022-113) and steel (92022-112) washers already present. This moves second and third gears over to the third gear slider, making a more positive engagement of fourth. If the shaft turns hard, take the shim back out.</p>		
<p>2. If fourth gear dogs hits third gear dogs after adding the shim, then take it back out and add a 0.5mm shim (Part #92022-225) between 4th gear and the circlip. This keeps the sloppiness out of the gear without forcing the dogs together.</p>		
Corrective action for 3rd gear.		
<p>The problem with the third gear has primarily been the result of the shim between the 3rd gear and the circlip spinning and wearing through the circlip. This causes third gear to move away from the slider and hop out of gear. The solution is to remove the standard shim (Part #92022-076) and replace it with a toothed washer which cannot rotate. (Part #92024-033). The new washer goes on the side towards the 5th gear.</p>		
Corrective action for 1st gear.		
<p>To correct poor engagement of 1st gear, insert a 0.5mm shim (Part #92022-144) between first gear and the end, bearing on the output shaft. This is in addition to the shims already present (Part #92022-112, 92022-113) This moves first gear slightly closer to the slider gear and eliminates play which may have contributed to the jumping out of gear. If adding this shim makes the gear hard to turn, then take it back out.</p>		
Corrective action for 2nd gear.		
<p>To eliminate play at the second gear on the output shaft, install a 0.5mm washer (Part #92022-225) on both sides of the gear. This moves the gear slightly closer to the fourth gear slider as well as reducing play. If the dogs on the fourth gear hits second gear after the shims are added, remove both new shims and add a 1.0mm shim (Part #92022-076) between second gear and the circlip. This will keep the dogs from hitting, while eliminating play at second gear.</p>		
Corrective action for 5th		

gear.

To eliminate jumping out of fifth gear, measure the clearance between fifth and third gear dogs on the drive shaft. If the clearance is over 2.0mm, remove the factory installed 1.0mm shim (Part #92022-076) between fifth gear and the circlip, and add a 0.5mm (Part #92022-225) shim on either side of fifth gear. This moves fifth gear 0.5mm closer to the slider gear assuring a more positive engagement. If the clearance is less than 2.0mm between the dogs on the two gears, then leave the 1.0mm shim where it is.

Bulletin#: 73 H-22

Date: Mar. 29, 1973

Bike(s) affected: H1

Subject: H1 top gear bushing

Action taken:

There is a possibility for unusually fast wear of the inside surface of the top gear on the drive shaft, which could eventually begin to wobble and cause problems in the transmission. A new gear has been designed that incorporates a pressed in bronze bushing for longer life. This has been incorporated from H1 frame number KAF-57161 and to all H2's from start of production. The old part# is 13136-022, the new part # is 13136-041.

Bulletin#: 73 H-23

Date: May 5, 1973

Bike(s) affected H1B:

Subject: H1B air cleaner and carb settings

Action taken:

There have been complaints on early H1-B motorcycles of sluggish performance in the low and middle RPM range. To improve the overall performance of the H1-B, a new air cleaner was designed and a new set of carburetor specifications was used from mid 1972 production. This change applied to all H1-B's from engine number KAE-61607 and up. The new air cleaner has two additional air intake ducts to increase the air intake capacity.

Carburetor Specs	Old	New
Type	VM28SC	VM28SC
Main Jet	100	95
Needle Jet	O-4	O-4/8mm

Jet Needle	5DJ19-3	5DJ19-4
Throttle valve cutaway	2.5	2.0
Pilot Jet	30	30
Air Screw (Turns out)	1-1/4	1-1/2
Parts Information		
Name	Old Part Number	New Part Number
Carb. Assy., LH + C	16001-143	16001-151
Carb. Assy., RH	16001-144	16001-152
Main Jet	92063-070	92063-069
Needle Jet	16017-058	16017-062
Jet Needle	16009-049	16009-049
Throttle Valve	16025-046	16025-048
Air Cleaner	11010-035-10	11010-058-21

Bulletin#: 73 H-24

Date: August 20, 1973

Bike(s) affected: H1D, H2

Subject: Stator Inspection

Action taken:

PROBLEM: There are several different problems which can result from a stator assembly failure on the H1D or H2. The purpose of this bulletin is to supply some of the possible effects of a defective stator and to offer a comprehensive guide for checking the stator assembly.

CAUSES:

1. The insulation of the coils can be too thin in areas causing an internal short or a short to ground.
2. Engine vibration can lead to an open or short circuit.
3. Engine heat contributes to stator assembly failure.
4. Water corrosion on the AC generator due partially to condensation but primarily resulting from leakage is a large contributor to stator assembly failure.

SOLUTION: The most important measures that a technician can take to prevent stator assembly failure are in preventing water from entering the LH engine cover.

Because the inspection cover gasket is stiff and quite narrow, it occasionally does not conform well to the sealing surfaces. GE Silicone Seal or similar sealant should be used with this gasket and with the LH engine cover gasket.

STATOR INSPECTION: If the stator is suspected to be defective, remove the LH inspection cover and visually check for broken wires, loose coils, or other signs of damage. If nothing is found, remove the LH side cover and disconnect stator wires.

By using an ohm meter follow the circuit tests below. **NOTE:** It is advisable to make these checks with the stator installed on the engine, because some problems such as the stator coils touching the crankcase may otherwise go undetected.

TEST	CIRCUIT FUNCTION	STD $\pm 10\%$ SERVICE LIMIT	RELATED MALFUNCTION
Black to Stator Body	Auxiliary Ground for Ignition Signal Coils	0 Ω	∞ =Open circuit, poor performance of signal coils if stator does not ground well through engine to frame.
Yellow to Yellow	Battery Charging	0.4 Ω	∞ =Open circuit, dead battery.
Yellow to Ground	Battery Charging	∞	Continuity= Short to ground, dead battery.
Blue to Green	Ignition High Speed Coil	5.0 Ω	∞ =Open circuit, engine will not run.
White to Green	Ignition Low Speed Coil	200 Ω	Less than 180 Ω = Internal short, weak spark, poor performance, fouling plugs, or no spark at low RPM. ∞ =Open circuit, engine will not run at low RPM.
Green to Ground	Ignition Insulation	∞	Continuity= 1) If short to ground is in the high spd coil there may be no noticeable effect. 2) If short to ground is in low spd coil there will be a very weak spark or no spark.
Black to L,C,R White	Ignition Signal Coils	200 Ω	∞ =Open circuit, engine will not run on 1, 2, or 3 cylinders. Less than 180 Ω + Internal short, weak spark, poor performance, fouling plugs on 1, 2, or 3 cylinders.

NOTES:

All of the connections to the stator wires must be checked. A bad connection causes the same problem as a bad stator.

A stator defect may cause problems when the motorcycle is running but may not be detected during circuit tests. In this case visual inspection is important.

Sometimes a problem only occurs after the motorcycle is driven some distance and then disappears when the motorcycle is parked for a while. This can indicate a fault that is sensitive to stator temperature. In such a case the engine should be warmed up before making the tests.

The H1D yoke and stator assembly can be used as substitute on the H2, however, the H2 leads are too short for that assembly to be used on the H1D.

Bulletin#: 73 H-25

Date: Sept. 20, 1973

Bike(s) affected: H2

Subject: Swing Arm Modification

Action taken:

At the beginning of 1973, H2A production, modifications to the swing arm, swinging arm pivot shaft, and bushings were initiated.

SWINGING ARM:

The rear cushion bracket on the H2A swinging arm is welded 5mm to the rear of the H2 bracket position. The H2A has seven chain adjustment marks as opposed to six for the 1972 H2. Otherwise the two are identical.

SWINGING ARM PIVOT SHAFT:

The H2A pivot shaft has a smooth polished surface as compared to the H2 pivot shaft which has a semi-rough machined surface.

BUSHINGS:

The H2 uses phenolic bushings made of cotton or asbestos filler bonded with a phenolic resin. The H2A uses sintered iron bushings for better resistance to wear

and fracture. The sintering process produces a spongelike structure in the metal making it capable of absorbing 20 percent of the total volume with lubricant.

These changes were effective with H2E-23848.

Bulletin#: 74 H-26

Date: Jan. 15 1974

Bike(s) affected: H1, H2

Subject: 3rd Gear Shift Fork Modification

Action taken:

H1/ H2 transmission problems have often included poor third gear engagement. This may be caused by two possible problems including the play of the fixed gears on the shafts and the lack of positive action in the third gear shift fork.

SOLUTION: Adjustment of the play in the transmission has been improved in H1 production since KAE-59017, and H2's from beginning of production.

The second problem has been counter measured by widening the base of the shift fork from 21.0mm to 24.5mm to keep the fork more rigid on the shift drum. This wider fork is supported on both sides of the groove on the shift drum. This modification is effective on H1's with KAE-87023 and H2's with H2E-31941.

Bulletin#: 74 H-27

Date: Apr. 26, 1974N

Bike(s) affected: H1

Subject: H1E engine ground wire

Action taken:

Early H1-E motors may misfire when under heavy electrical load- headlight on and turn signals flashing, for example. The problem was the new rubber mounts for the motor, which isolate the motor from the frame. The small black/yellow ground wires are too small to support the amperage of the ignition and lighting system. The problem was fixed after H1F-023021 by installing a ground wire, part #26011-084 between the frame and the engine chain cover. This should be installed on all H1-E's prior to H1F-023021.

Bulletin#: Ser. 74 H-28

Date: May 23, 1974N

Bike(s) affected: H1E

Subject: Brake fluid leak

Action taken:

On Some H1E's between H1F-025000 and H1F-030300 there may be a brake fluid leak around the allen bolt on the bottom of the steering stem. The solution is to tighten this bolt on affected H1's to 3.0 kg-m (22 ft lb.)

Bulletin#: 2/500-1

Date: December 19, 1975

Bike(s) affected: KH500-A8

Subject: Neutral positioner

Action taken:

The 1976 KH500 has a neutral positioning bolt on the upper crankcase. On some early KH500's the positioning bolt boss (In the crankcase body) was machined too short. Installation of the positioning bolt and pin in a short boss may interfere with normal gear changing. (A diagram shows a transmission measured in neutral. From the top indent in the shift drum detent plate to the top of the boss should be 22mm, 20mm is bad.)

The factory action is to install an extra gasket and washer under the positioning bolt. Dealer action is to reinstall added parts when servicing units, and check for added parts any time the neutral positioner is removed or a customer complains of shifting problems on an affected unit.

Parts Information				
Description	Part #	Thickness	Remarks	Effective I.D.
Washer, Plain	92022- 053	0.8mm	Used as a set to raise neutral positioning bolt	E/N KAE119404~
Gasket	92065- 090	1.0mm		KAE119631

Bulletin#: 73 S-1

Date: Nov. 15, 1971

Bike(s) affected: S2

Subject: S2 Cracked Cylinder Heads

Action taken:

On early S2's there may be a possibility of cylinder heads cracking. Head thickness has been increased from 16mm to 19mm. Part number is unchanged. Newer design heads were installed from S2E-07595 on.

Bulletin#: 73 S-2

Date: Nov. 20, 1971

Bike(s) affected: S2

Subject: S2 clutch rattle

Action taken:

Early S2's may develop a rattling sound on the right hand side of the motor, most noticeable in neutral with the clutch released. In gear or with the clutch pulled in the noise is eliminated. The cause is excessive clearance between the clutch housing drive fingers and the driven tabs on the friction plates. Standard clearance is .002-.022 in., (.05-.555mm) but the rattle becomes more prominent as the clearance exceeds .0010 in. (.25mm) To correct this clutch finger shims have been prepared. Part #92037-079 (.014 in, .35mm thick) and part #92037-080 (.010 in. .25mm thick.) Three are needed to repair one clutch.

Bulletin#: 73 S-3

Date: February 29, 1972

Bike(s) affected: S2, H1B

Subject: Shop Manual Errors

Action taken:

The following corrections should be made to the SM-2 revised. (July 1, 1971.)

Note: The SM-2 Revised does not contain any service information for the H1-B. Use the new H series shop manual for the H1-B.

A. Page 10

Remove the headings from photographs Number 29 and 30.

B. Page 18, Table 6

Compression pressure for the H1 should be 142 lb/in² at 200 RPM. Compression pressure for the S2 should be 156 lb/in² at 200 rpm.

C. Page 20, paragraph e.

The connecting rod small end play service limit should be 0.0039in. (0.10mm).

D. Page 27, Second Column. The eighth line from the bottom should read:

"with 6 friction plates (7 in H series) and 5 clutch"

E. Page 28, Second Column. Line 5 should read:

"the clutch hub. Thus the drive train is as"

F. Page 46, 47. These two pages are correct for the S2, but not for the H1. See correction for pages 44 and 45 of the new H series shop manual for the H1.

G. Page 97. Diagram #407 should be correct to match the diagram below:

(Shows wiring diagram of AC generator and voltage regulator.)

Bulletin#: 73 S-4

Date: July 20, 1972

Bike(s) affected: S2

Subject: New S2 Oil Pump

Action taken:

In some areas S2 owners have complained of excessive exhaust smoke, spark plug fouling, and oil wetting of the muffler tips. A new oil pump, part #16082-041, has been developed for the S2 350cc. The oil flow has been changed for reduced output. The I.D. make is S2-2, and is used on all new S2's from S2E-16293. The old pump is part #16082-030.

Bulletin#: 73 S-5

Date: Sept. 30, 1972

Bike(s) affected: S2

Subject: S2 crankcase and crankshaft modification

Action taken:

To correct some instances of crank bearing failure, a new crankcase/crankshaft assembly has been designed. All S2's from S2E-18507 and above have been fit with a new six bearing crankshaft similar to that on the H1. The new crank can be installed on older S2's with a 4 bearing crank. The old crank assembly part # is 13031-037, the new is 13031-040. The crankcase has had additional oil passages drilled in the upper half, and is used on S2's from S2E-24749 up. The part number is unchanged, #14001-049.

Bulletin#: 73 S-6

Date: Oct 1, 1972

Bike(s) affected: S2

Subject: S2 engine mount shims

Action taken:

S2 motors exhibiting high vibration should have engine mount shims installed. These are the same shims used on the H1 and H2. Installation has been done at the factory for S2's from frame number S2F-26858. The rear shim is 38mm long, the front is 20mm long. When installing, check the clearances between the engine bosses and frame lugs. (Picture shows the bottom 2 mounts the ones to be checked.) Insert the correct sized shims, and tighten the 10mm bolts to 25 lb-ft of torque, and the 8mm bolts to 15 lb-ft.

Shim Sizes		
Front/Rear	Part #	Size
Front	92025-048	0.5mm
Front	92025-049	0.8mm
Front	92025-050	1.0mm
Front	92025-051	1.6mm
Front	92025-052	2.0mm
Rear	92025-053	0.5mm
Rear	92025-054	0.8mm
Rear	92025-055	1.0mm
Rear	92025-056	1.6mm
Rear	92025-057	2.0mm
Rear	92025-058	2.3mm

Bulletin#: 73 S-7

Date: Dec 5, 1973

Bike(s) affected: S2

Subject: S2 Oil Pump Modification

Action taken:

PROBLEM: There is a tendency for some three cylinder models to smoke excessively from one exhaust pipe. On the S2, it is usually the right cylinder that is affected.

CAUSE: This problem has been traced to faulty O-ring seating in the oil pump end cover. After installation, the two O-rings inside the cover shrink approximately .1 to .2mm in diameter. This shrinkage allows oil to seep around the seals and into the end cover chamber. From this point, the excess oil is pumped to the right cylinder which is serviced by the end cover orifice, resulting in smoking and premature sparkplug failure.

NOTE: On some very early S2's the end cover chamber was connected to the center cylinder, rather than the right. On all later models ('72, '73) the end chamber is connected to the right cylinder.

It should be noted that other symptoms may indicate oil pump malfunction, such as right hand piston seizure. This may be caused by oil being forced back into the main pump body through defective O-rings. As a result, the right cylinder is starved for oil, and this situation will eventually lead to seizing.

CURE: To remedy this problem, the oil pump end cover has been redesigned to prevent oil seepage.

- A. The radius in the end of the cover has been decreased in depth to give the O-rings less "squish" space.
- B. The bottom radius has been eliminated.
- C. The internal diameter of the chamber has been decreased from $14.0 \pm .1$ mm to $13.7 \pm .05$ mm to compensate for shrinkage.
- D. A slight shoulder has been added to the chamber base to further compress O-ring.

A conversion kit is available to correct older model oil pumps. The kit consists of two mounting screws, two O-rings, and a new oil pump end cover. These parts will fit all three cylinder oil pumps. Conversion kit P/N 99990-016. **IMPORTANT:** Whenever an oil pump is disassembled for any reason, the O-rings must be replaced. The end cover O-rings are P/N 16090-002.

Bulletin#: 73 S-8

Date: Sept. 30, 1972

Bike(s) affected: S1/S2

Subject: S1/S2 Clutch Cable

Action taken:

To correct instances of excessive clutch cable breakage the cable diameter has been increased from 2.0mm (54011-040) to 2.5mm (54011-053) and has a teflon coating on the inside of the cable. The new cables have been used after engine numbers S1E-08257 and S2E-38301.

Bulletin#: 74 S-9

Date: Mar. 22, 1974

Bike(s) affected: S1/S2/S3

Subject: S1, S2, S3 Voltage Regulator

Action taken:

The voltage regulator has been changed to reduce the charging voltage from 16.0 +/-0.5 volts to 15.0 +/-0.5 volts in an effort to reduce excessive blown headlights.

The new regulators were first manufactured in August, 1973 beginning with the first lot of the month. This information is contained in lot number 3H1. Any voltage regulator for the S1/S2/S3 manufactured before August, 1973 is the old 16 volt regulator. The date of manufacture of any voltage regulator can be determined by referring to the following information:

First character: year, ie. 3=1973

Second character: month, A=Jan, B=Feb, etc,

Third character: Lot#, ie, 1=1st lot of the month

Old part#= 21066-012 New part#= 21066-020

Effective I.D.:

S1= S1F-13618

S3= S3F-02356

Bulletin#: 74 S-10

Date: Apr. 5, 1974

Bike(s) affected: S3

Subject: S3 engine ground wire

Action taken:

Early S3 motors may misfire when under heavy electrical load- headlight on and turn signals flashing, for example. The problem was the new rubber mounts for the motor, which isolate the motor from the frame. The small black/yellow ground wires are too small to support the amperage of the ignition and lighting system. The problem was fixed after S3F-0005187 by installing a ground wire, part #26011-084 between the frame and the engine chain cover. This should be installed on all S3's prior to S3F-0005187.

Bulletin#: 2/400-1

Date: Oct. 10, 1975

Bike(s) affected: KH400

Subject: Ignition Testing

Action taken:

The KH400 ignition system consists of three signal generating coils, two capacitor charging coils, a CDI unit, and three ignition coils. Components can be tested using either of the two methods outlined.

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