Date: 1-15-74 N

BULLETIN SER 74 H-26

Title: H1/H2 3RD GEAR SHIFT FORK MODIFICATION



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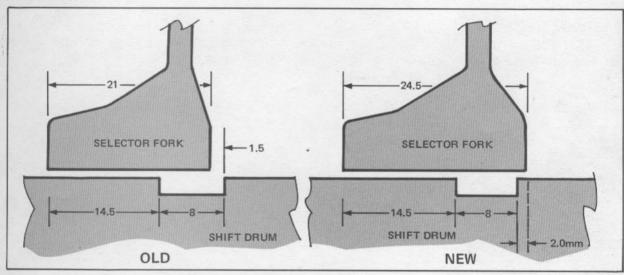
PROBLEMS:

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.

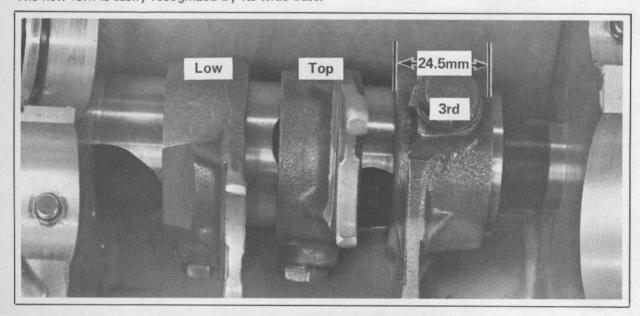
SOLUTION:

Adjustment of the play in the transmission has been improved in H1 production since engine number KAE-59017, and H2's from beginning of production. See Bulletin Ser 73 H-21 for adjustment instructions.

The second problem has been countermeasured by widening the base of the shift fork 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.



The new fork is easily recognized by its wide base.



PARTS INFORMATION:

	OLDI	PARTS	NEW PARTS		INTER- CHANGE	EFFECTIVE
DESCRIPTION	P/N	REMARKS	P/N	REMARKS	OLDNEW	I.D.
3rd gear shift fork H1	13140-013	21.0mm wide	13140-064	24.5mm wide	Ø → 0	KAE-87023
3rd gear shift fork H2	13140-048	21.0mm wide	13140-065	24.5mm wide	Ø → 0	H2E-31941

NOTE: Until production of the new part exceeds new motorcycle assembly demand, the new part may not be immediately available.

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization. ■



Date: 9-20-73 N

BULLETIN SER 73 H-25

Title: MODIFICATIONS



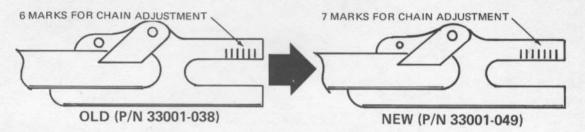
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obsolete

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

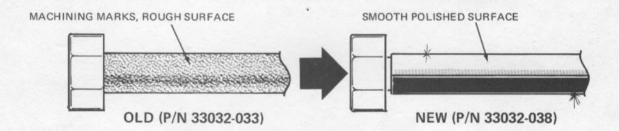
SWINGING ARM:

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



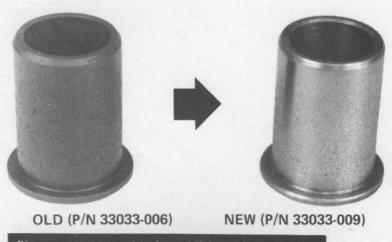
SWINGING ARM PIVOT SHAFT:

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 a 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. This type of bearing is ideal in areas where lubrication is infrequent.



Please see reverse side for additional information.

PARTS INFORMATION

Description	OLD PARTS		N	EW PARTS	Inter- changeability	Effective I.D. No.
	P/N	Remarks	P/N Remarks		Old → New	
H2 Swinging Arm	33001-038	6 marks for chain adjust- ment. No longer avail- able	33001-049	7 marks for chain adustment. Rear cushion bracket is welded 5mm further back than bracket on old swinging arm.	+0	
H2 Shaft, Swinging Arm Pivot	33032-033	Machine marks. No longer available	33032-038	Smooth polished surface	+ →	Engine No. H2E-23846
H2 Bushing	33033-006	Black- Phenolic material	33033-009	Polished- Sintered Iron	-0 →	

O = interchangeable X = not interchangeable □ = not available

WARRANTY INFORMATION

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 8-20-73 N

Title. H1D, H2 STATOR INSPECTION



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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:

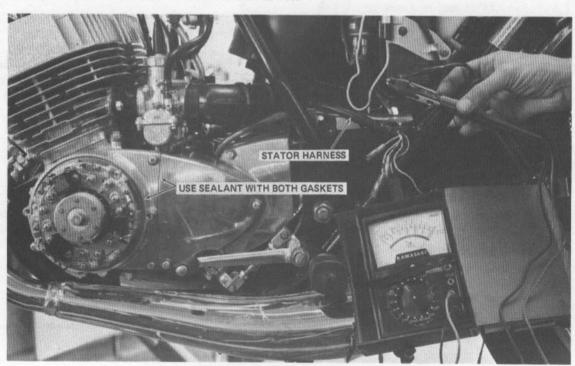
- 1. The insulation of the coils can be too thin in areas causing an internal short or a short to ground.
- 2. Engine vibration can lead to an open or short circuit.
- 3. Engine heat contributes to stator assembly failure.
- 4. Water corrosion on the AC generator due partially to condensation but primarily 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 failures are in preventing water from entering the L.H. engine cover. Because the inspection cover gasket (P/N 14050-005 for H1D and H2) is stiff and quite narrow, it occasionally does not conform well to the sealing surfaces of the LH engine cover and the inspection cover. G.E. Silicone Seal or any similar sealant should be used with this gasket and with the LH engine cover gasket (P/N 14045-012 for H1D and H2).

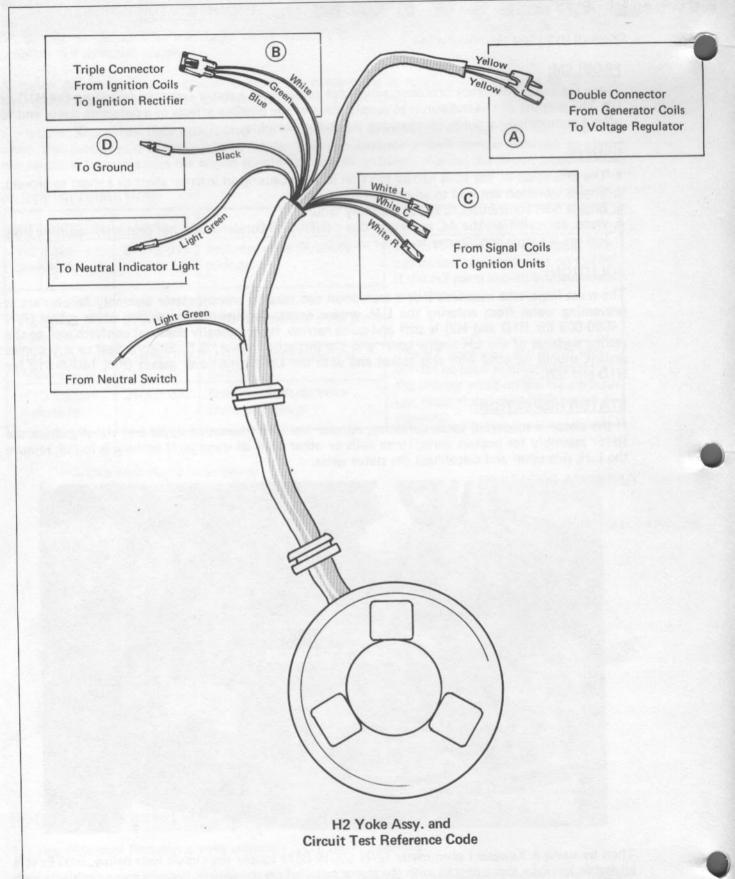
STATOR INSPECTION:

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



Then by using a Kawasaki ohm meter (P/N 56019-037) 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 engine crankcase may otherwise go undetected.

Please see reverse side for additional information.



CIRCUIT TESTS

	TEST Ilustration ference Code	CIRCUIT FUNCTION	STD. ±10% Service Limit	RELATED MALFUNCTION
(D)	Black to Stator Body	Auxiliary Ground for Ignition Signal Coils	0 Ω	Open circuit, poor per- formance of signal coils if stator does not ground well through engine to frame.
A	Yellow to Yellow	Battery Charging	0.4 Ω	
(A)+(D)	Yellow to Ground (or to engine)	Battery Charging	600	<u>Continuity</u> = Short to ground, dead battery
B	Blue to Green	Ignition High Speed Coil	5.0 Ω	
B	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.
B*D	Green to Ground (or to engine)	Ignition Insulation		Continuity = (1) If short to ground is in the high speed coil there may be no noticeable effect in performance. (2) If short to ground is in the low speed coil there will be a very weak spark or no spark at all.
C+D	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:

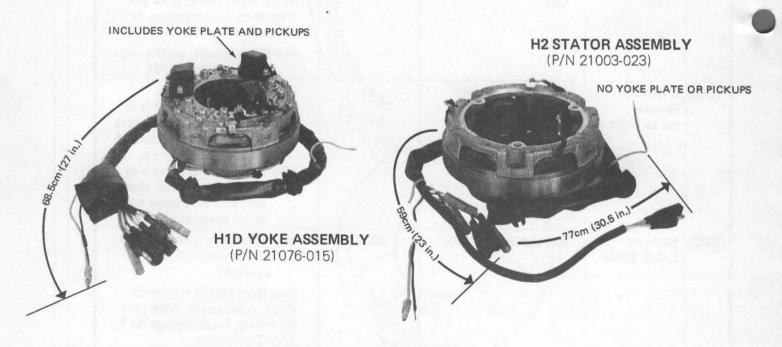
All of the connections to the stator wires must be checked. A bad connection causes the same problem as a defective stator.

A stator defect may cause problems when the motorcycle is running but may not be detected during the 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 circuit tests.

PARTS INFORMATION:

DESCRIPTION	P/N	REMARKS	NOTES
H2 Yoke Assembly	21076-011	Includes yoke plate and pickups	The H1D yoke assy, and stator assy, can be used as substitutes on the H2 if the H2 parts should become unavailable.
H2 Stator Assembly	21003-023	Does not include yoke plate or pickups	
H1D Yoke Assembly	21076-015	Includes yoke plate and pickups	The H2 yoke assy, and stator assy, cannot be used as substitutes since
H1D Stator Assembly	21003-022	Does not include yoke plate or pickups	the shorter wires on the H2 parts do not reach the proper H1D components.



NOTE: The above photos illustrate the following:

- 1. The difference between a yoke assembly and a stator assembly.
- 2. The difference between an H1D and an H2 wiring harness. All the wires of the H1D harness are the same length. The wires of the H2 are two lengths two wires longer than the H1D harness and the rest shorter.■



Title: H1 TOP GEAR BUSHING

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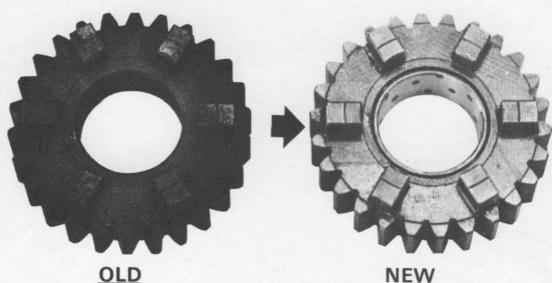
Obsolete

PROBLEM:

In the transmissions of H1 models there is a possibility for unusually fast wear on the inside of top gear on the drive shaft. As the gear wears, it begins to wobble on the shaft, eventually causing serious trouble in the transmission.

CORRECTION:

To eliminate this possibility, top gear on the drive shaft has been changed. The new gear is made with a pressed in bronze bushing for extended life. This change has been applied to all H1's in production from frame number KAF-57161, and to all H2's from beginning of production.



Top Gear (No Bushing) P/N 13136-022

Top Gear Bronze Bushing P/N 13136-041

PARTS INFORMATION:

	OLDI	PARTS	NEW	PARTS	INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLDNEW	
Drive Shaft Top Gear	13136-022	No Bushing	13136-041	Bronze Insert	→	KAF-57161

O = interchangeable X = not interchangeable $\square = not available$

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 5-5-73 N

Title: CARB SETTINGS H1B AIR CLEANER AND



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obsolete

PROBLEM:

There have been complaints on early H1B motorcycles of sluggish performance in the low and middle rpm range.

SOLUTION:

To improve the overall performance of the H1B, a new air cleaner was designed and a new set of carburetor specifications was used from mid-1972 production. This change is applied to all H1B's from engine number KAE-61607 and up.

The new air cleaner has two additional air intake ducts to increase the air intake capac-

NEW CARBURETOR SPECIFICATIONS:

	OLD	NEW
Type	VM28SC	VM28SC
I.D. Mark	KA2	KA5
Main Jet	100	95
Needle Jet	0-4	0-4/8mm
Jet Needle	5DJ19-3	5DJ19-4
T. V. Cutaway	2.5	2.0
Pilot Jet	30	30
Air Screw (turns)	1-1/4	1-1/2



ADDITIONAL AIR INTAKES

PARTS INFORMATION:

	OLDI	PART	NEW I	PART	INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD-NEW	I.D.
Carburetor Assy L.H. & C.	16001-143		16001-151		0	KAE-61607
Carburetor Assy R.H.	16001-144	/	16001-152		as a set	
Air Cleaner	11010-035- 10		11010-058- 21	2 Addl. Air Ducts	₩ →	
Main Jet	92063-070	#100	92063-069	#95	< 0 →	
Needle Jet	16017-058	0-4	16017-062	0-4/8mm	only as	
Throttle Valve	16025-046	2.5	16025-048	2.0	a set	

O = interchangeable $X = not interchangeable \square = not available$

WARRANTY INFORMATION:

This was a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 2-12-73 N

BULLETIN SER 73 H-21

Title: H1/H2 TRANSMISSION ADJUSTMENT

SERIES

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PROBLEM:

On early H1 and H2 models, there have been problems of gear engagement resulting from excessive play in the stationary gears on both the drive and output shafts.

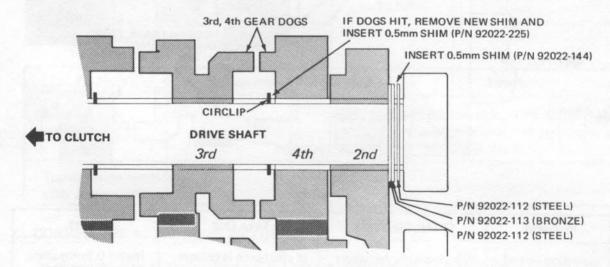
SOLUTION:

Several shims have been added on both output and drive shafts in order to eliminate specific problems. These corrections have been applied to all H1's from engine numbers KAE-59017 and up, and to all H2's from the beginning of production.

For those H1 and H2 motorcycles which jump out of gear, or fail to engage properly, corrective adjustment may be accomplished in the following manner. Corrective action is listed for each gear. All clearances are checked with the transmission in neutral.

A. CORRECTIVE ACTION FOR 4TH GEAR:

- Insert an 0.5mm shim (P/N 92022-144) between second gear and the bearing on the drive shaft. The shim goes between the bronze and steel washers already present. This moves second and fourth gears over toward the third gear slider, making a more positive engagement of fourth. If the shaft turns hard, take the shim back out.
- 2. If fourth gear dogs hit third gear dogs after adding the shim, then take it back out and add a 0.5mm shim (P/N 92022-225) between 4th gear and the circlip. This keeps the sloppiness out of the gear without forcing the dogs together.

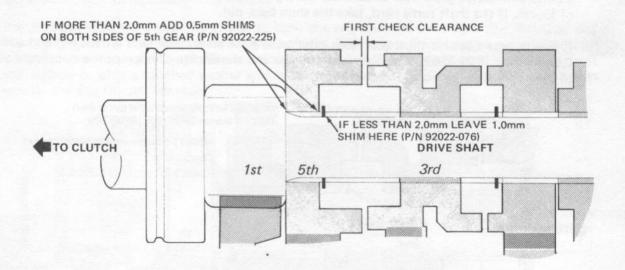


4th Gear Problem	Clearance	Take Out	Insert
Jumps out of 4th gear.			0.5mm shim (92022-144) along with shims already present between second gear and end bearing on drive shaft.
4th gear dogs hit 3rd gear dogs in neutral after add- ing shim.		Remove new 0.5mm shim between 2nd gear and end bearing on drive shaft.	Add 0.5mm shim (P/N 92022-225) between 4th gear and circlip on drive shaft.

NOTE: Refer to Bulletin Ser 74 H-26 for further information.

B. CORRECTIVE ACTION FOR 5TH GEAR:

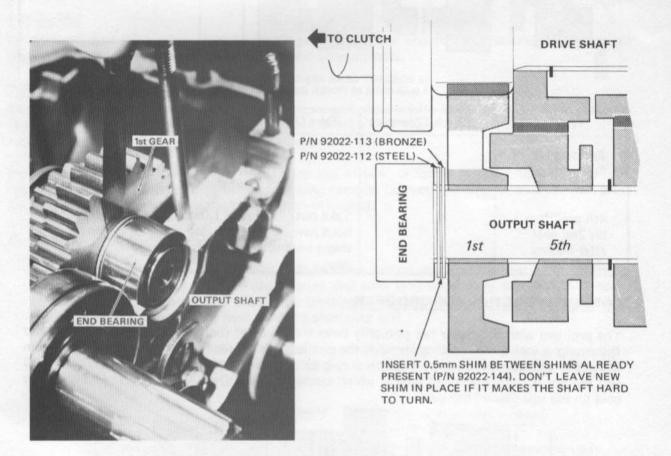
1. To eliminate jumping out of fifth gear, measure the clearance between fifth and third gear dogs on the drive shaft. If the clearance is over 2.0mm, remove the factory installed 1.0mm shim (P/N 92022-076) between fifth gear and the circlip, and add a 0.5mm (92022-225) shim on either side of fifth gear. 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 dogs on the two gears, then leave the 1.0mm shim where it is.



Problem	Check Clearance	Take Out	Insert
Jumping out of 5th gear.	on drive shaft. Ck clearance between 5th and 3rd gear dogs 1.0mm sh 5th and co		Insert 0.5mm shim (P/N 92022-225) on either side of 5th gear on the
		If less than 2.0mm leave shim where it is.	drive shaft.

C. CORRECTIVE ACTION FOR 1ST GEAR:

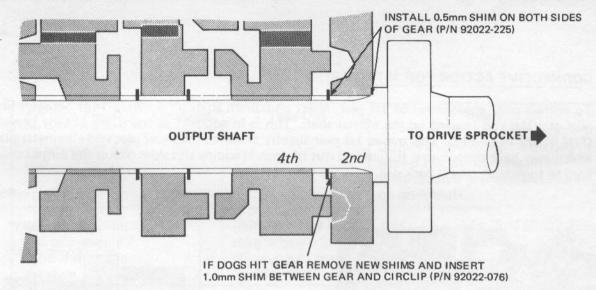
To correct poor engagement of 1st gear, insert an 0.5mm shim (P/N 92022-144) between first gear and the end bearing on the output shaft. This is in addition to the shims already present (P/N 92022-112, -113). This moves 1st gear slightly closer to the slider gear and eliminates play which may have contributed to jumping out of gear. If adding this shim makes the output shaft hard to turn, then take it back out.



Problem	Check Clearance	Take Out	Insert
Poor 1st gear engagement.		a mentio	Add 0.5mm shim (P/N 92022-144) between first gear and end bearing on the output shaft.
Transmission binds after adding shim.		Take out new shims.	

D. CORRECTIVE ACTION FOR 2ND GEAR:

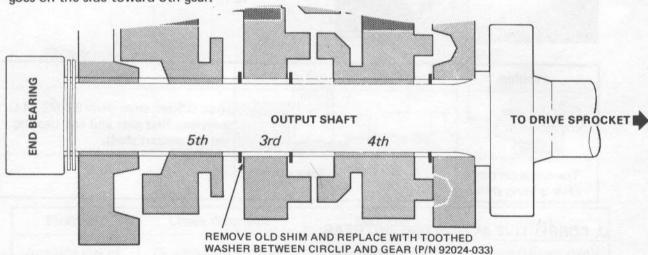
To eliminate play at second gear on the output shaft, install a 0.5mm washer (P/N 92022-225) on both sides of the gear. This moves the gear slightly closer to the fourth gear slider as well as reducing play. If the dogs on fourth gear hit second gear after the shims are added, remove both new shims and add a 1.0mm shim (92022-076) between second gear and the circlip. This will keep the dogs from hitting, while eliminating play at second gear.



Problem	Check Clearance	Take Out	Insert
Jumping out of 2nd gear.			Add 0.5mm shim (92022-225) on both sides of 2nd gear on the output shaft.
4th gear dogs hit 2nd gear after adding shims.		Take out both new shims on 2nd gear.	Add 1.0mm shim (92022-076) between 2nd gear and circlip on output shaft.

E. CORRECTIVE ACTION FOR 3RD GEAR:

The problem with third gear has primarily been the result of the shim between 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 (P/N 92022-076) and replace it with a toothed washer which cannot rotate (P/N 92024-033). The new washer goes on the side toward 5th gear.



Problem	Take Out	Insert
Jumps out of 3rd gear.	Remove 1.0mm shim between 3rd gear and circlip on output shaft.	Insert 1.0mm toothed thrust washer (P/N 92024-033 between 3rd gear and circlip (5th gear side).

WARRANTY INFORMATION:

This bulletin is for service information only, not for warranty authorization.

H1/H2 GEAR CHANGE Title: LEVER ASSEMBLY

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PROBLEM:

On the early H1 models, the gear change lever assembly consisted of a toothed lever staked to a rod. This construction sometimes loosened up, causing sloppiness in shift lever movement. This contributed to missed shifts, and sometimes led to transmission damage.

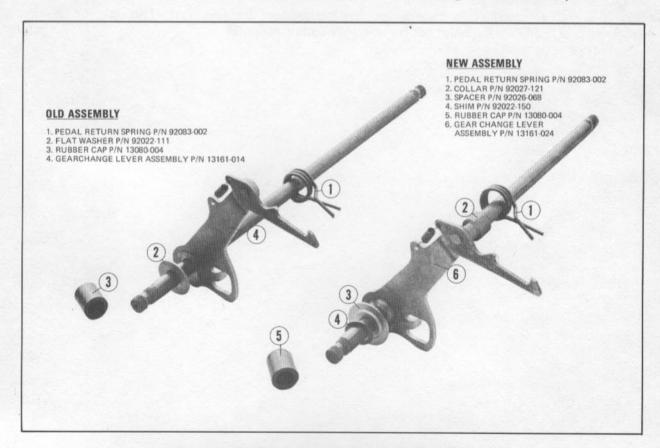
An additional point of confusion comes from a variation in the assembly as pictured in the parts manuals for H1B and H1D.

CORRECTION:

To remedy this problem, a new gear change lever assembly was designed for the H1 and H2. The new unit is welded, rather than staked, and includes a collar inside the pedal return spring, a spacer. and a shim outside the spacer.

ASSEMBLY INFORMATION:

The correct assembly of the new gear change lever assembly is pictured on the right below. The outside shim (P/N 92022-150) does not yet appear in any parts books but it is included in the position shown on current production machines of both H1 and H2. The new assembly is used on all H1's after Engine No. KAE 43902 and on all H2's, and is interchangeable with older parts.



PARTS INFORMATION:

	OLD PARTS		NEW	PARTS	INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD-NEW	I.D.
Gear Change Lever	13161-014	Staked, Comes W/ Collar	13162-008	Complete Assembly Includes: P/N 92026- 068 P/N 92027- 121	ONLY AS A SET	KAE-43902
			13161-024	Gear Change Lever Only		
Collar	-	_	92027-121			
Spacer	92022-111	Flat	92026-068	Shaped	<->X →	

O = interchangeable $X = not interchangeable \Box = not available$

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 1-18-73 N

BULLETIN SER 73 H-19

itle: H2 CARBURETOR MODIFICATIONS

H

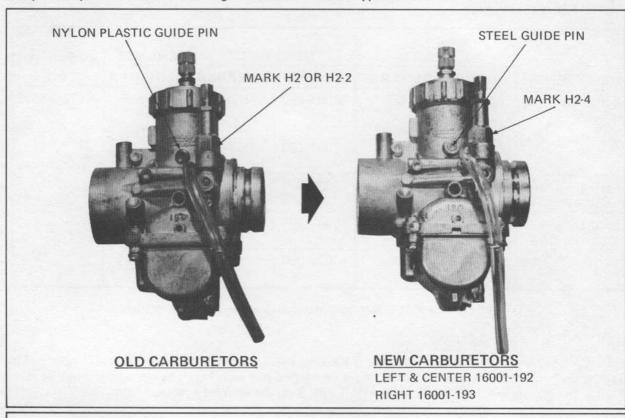
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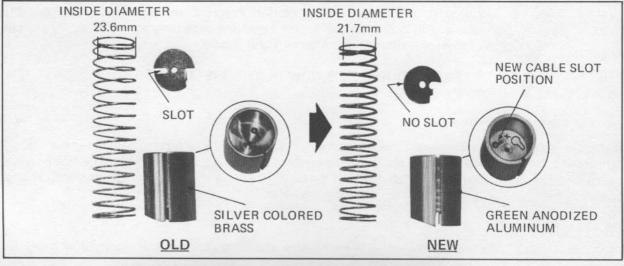
PROBLEM:

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 has become lodged in the engine, causing severe damage.

CORRECTION:

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.





In addition to the modifications noted above, 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.

CARBURETOR SETTINGS	"H2" OLD	"H2-2/H2-4" NEW
Main Jet	105R	#97.5R
Jet Needle & Clip	5FL14-2nd	5EJ15-3rd
Needle Jet/Primary Choke	#0-6/2mm	#0-6/8mm
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	0.5mmØ	0.5mmØ
Carb I.D. Mark	H2	H2-2/H2-4

PARTS INFORMATION:

	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLDNEW	I.D.
Carburetor Assy. L.H. & Center	16001-135 16001-163	"H2" "H2-2"	16001-192	"H2-4"	X →	H2E-23846
R.H.	16001-148 16001-164	"H2" "H2-2"	16001-193	"H2-4"		
Spring – Throt- tle Valve	16006-012		16006-021			
Spring Seat — Throttle Valve	16007-017		16007-021			
Valve — Throt- tle	16025-047		16025-058			

O = interchangeable $X = not interchangeable \square = not available$

WARRANTY INFORMATION:

This is a factory directed modification and Kawasaki will warranty the cost (parts and labor) of installing the new carburetors. This work must be carried out on all H2's below engine number H2E-23846. Use job code X014 (0.7 hr.), <u>CLAIM TYPE 3</u> on the warranty request form.

NOTE: Dealers subscribing to the Small Claims Option Program are required to perform this modification and submit a Warranty Request Form for each unit so modified. The Small Claims Option Program applies to claim types 1 and 2 only.

THIS WARRANTY EXTENDS TO ALL H2'S NOW IN THE FIELD, REGARDLESS OF THEIR INDIVIDUAL WARRANTY STATUS.

INVENTORY NOTE:

Kawasaki is now installing the new "H2-4" carburetors on '73 H2's in production. Only the "H2-4" carburetors will be available from the parts department. There are still new H2's in stock however which had the old carburetors installed at the factory. It will be necessary for the dealer to change to the new carburetors prior to the sale of these machines.

DEALER PARTS STOCK:

"H2" and "H2-2" carburetors currently in dealer spare parts stock should be returned to Kawasaki for credit using form titled, "Request for Credit or Return of New Material."■

Date: 11-17-72 N

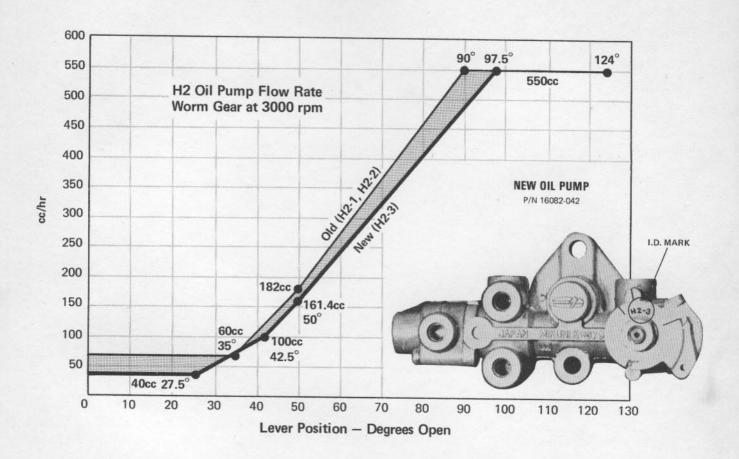
BULLETIN SER 73 H-18

Title: H2 OIL PUMP MODIFICATION



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To correspond with the improved carburetor settings described in Bulletin Ser. '73 H-19 the oil pump output has been modified for slightly reduced flow. The curves for both old and new pumps are as follows:



The new oil pump has been used on and after Engine H2E-16078. The reduced oil flow, and better gas consumption provide the H2 with greater range and performance.

PARTS INFORMATION:

	OLD	PARTS	NEW	PARTS	INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLDNEW	I.D.
Oil Pump, H2					X	H2E-16078

O = interchangeable X = not interchangeable $\square = not available$

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.■



Date: 11-13-72 N

BULLETIN SER 73 H-17

Title: H SERIES DUST SHIELD



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obsolete

PROBLEM:

Oil leakage from the front forks was an occasional problem on the H1 and H2.

SOLUTION:

A new fork dust shield and new oil seal have been developed to insure against oil leakage and excessive wear from dirt entering the slider.

	OLD	NEW	
DUST SHIELD	OLD P/N 44010-018	NEW P/N 44010-021	Dust shield Quantity required: 2
OIL SEAL	OLD P/N 44009-012	NEW P/N 44009-014	Oil Seal Quantity required: 2
I.D. MARK	RSD	TB4	

PARTS INFORMATION:

DESCRIPTION	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD-NEW	I.D.
Dust Shield	44010-018	Single Taper	44010-021	Double Taper	← 0 →	KAF-62467
Oil Seal	44009-012	"RSD"	44009-014	"TB4"	0	H2F-19037

O = interchangeable X = not interchangeable $\square = not available$

<u>CAUTION:</u> Do not attempt to re-use old oil seals, since they are most often damaged during removal. Always use the new style seals for replacement.

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 10-20-72 N

BULLETIN SER 73 H-16

Title: H1/H2 OIL PUMP MODIFICATION



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PROBLEM:

There is a tendency for some Kawasaki 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:

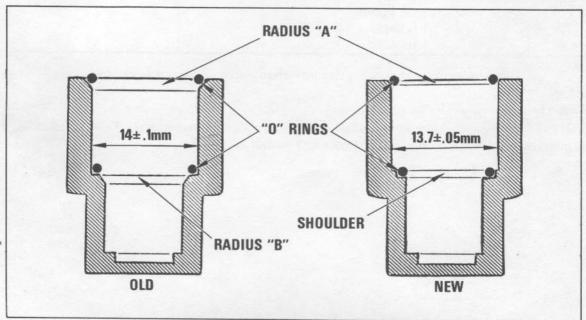
This problem has been traced to faulty O-ring seating in the oil pump end cover. After installation, the two O-rings inside the cover shrink approximately .1 to .2mm in diameter. This shrinkage allows oil to seep around the seals and into the end cover chamber. From this point, the excess oil is pumped 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. The illustration below points out the differences between the old and new parts.

- A. Radius "A" has been decreased in depth to given the O-rings less "squish" space, making a tighter seal.
- B. Radius "B" has been eliminated altogether, improving the seal at this point.
- C. The internal diameter of the chamber has been decreased from 14 \pm .1mm to 13.7 \pm .05mm to compensate for O-ring shrinkage.
- D. A slight shoulder has been added to the base of the new chamber to further compress the O-ring.



APPLICATION:

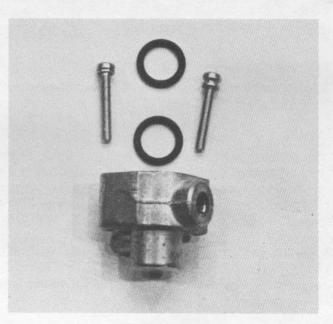
Modified oil pump end covers are presently being installed on all new H1's and H2's at the factory.

AVAILABILITY:

A conversion kit is now available from the parts department that will correct older model oil pumps. This kit consists of two mounting screws, two O-rings, and a new oil pump end cover. These parts will fit all Kawasaki three cylinder oil pumps. The part number for the oil pump conversion kit it 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.



P/N 99990-016
Three Cylinder Oil Pump
Conversion Kit

PARTS INFORMATION:

	OLD PARTS		NEW F	NEW PARTS		EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLDNEW	I.D.
Oil Pump Conversion Kit	NA	-	99990-016	End Cover, O-Rings, and Screws	X →	Field Service Only
O-Rings (2)	16090-002	Replace Whenever Oil Pump is Disas- sembled	Same			

O = interchangeable X = not interchangeable $\square = not available$

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization. ■

Date: 9-20-72 N

BULLETIN SER 73 H-14

Title: H2 HIGH-SPEED WOBBLE



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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 P/N 41021-018 be replaced with a new-type Dunlop H3.25-19 F6 tire, P/N 41021-029. 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.



YOKOHAMA 3.25-19 Y-623 P/N 41021-018



DUNLOP H3.25-19 F-6B P/N 41021-029

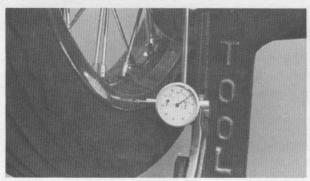
INVENTORY NOTE:

Kawasaki is no longer equipping H2's with Yokohama front tires at the factory, and this tire will no longer be available from the parts department. There are still new H2's in stock which had the old-style tire installed at the factory. It will be necessary for the dealer to change to the new Dunlop tire prior to the sale of these machines. The old tire may be added to the dealer's spare parts inventory at no cost to the dealer.

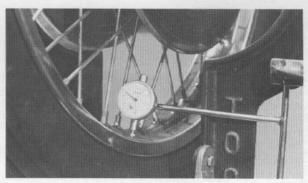
ADDITIONAL MEASURES:

Even though the Dunlop F6 tire enhances the handling of the Kawasaki 750, be sure to check all of the following factors that may affect high-speed stability.

A. WHEEL TRUING: After mounting the new tire, place the wheel in a wheel truing stand, and, 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").



Standard 1mm (.04")
Service Limit 3mm (.12")

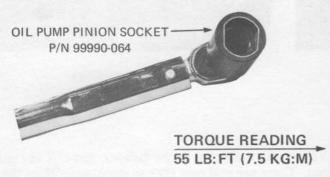


RADIAL RUNOUT
Standard 1mm (.04")
Service Limit 2mm (.08")

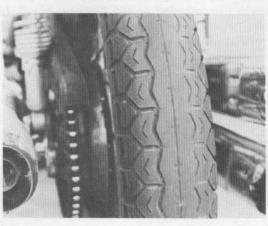
B. WHEEL BALANCING: While the wheel is still in the truing stand, balance it as carefully as possible to ensure maximum wheel stability at all speeds.

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

C. AXLE TORQUE: Make sure that 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 an accurate torque measurement, use a torque wrench and an Oil Pump Pinion Socket, P/N 99990-064 (refer to National Parts Bulletin #72-9, June 26, 1972). These sockets fit the flattened ends of the H2 axle perfectly, and adapt to any 3/8" square drive.



- 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 the proper pressure: 26 PSI for the front tire, and 31 PSI for the rear.



EXCESSIVE WEAR

PARTS INFORMATION:

	OLD	PARTS	NEW F	PARTS	INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLDNEW	I.D.
Front Tire	41021-018	Yokohama 325-19 Y- 623	41021-029	Dunlop H3.25-19, F6B	X	H2F-23671

O = interchangeable X = not interchangeable □ = not available

WARRANTY INFORMATION:

Use job code X013 (0.5 hr.) for installing the new tire, including balancing and truing.

This is a factory directed modification, CLAIM TYPE 3 on the Warranty Request Form.

NOTE: Dealers subscribing to the Small Claims Option Program are required to perform this modification and submit a Warranty Request Form for each unit so modified. The Small Claims Option Program applies to claim types 1 and 2 only.

TIRE SALE REPORTING:

Federal law requires that the I.D. number of a new tire and the name and address of the customer be reported to the tire distributor for that brand. Kawasaki does this automatically for all originally-installed tires. However, when the new F6 tire is installed, the I.D. number and the customer's name and address must be recorded, and sent to the U.S. Dunlop distributor. Tire report forms are available at no cost from the parts department. P/N 99995-505. For further information on tire reporting see warranty bulletin WTY-1 5-30-73 N.



TIRE I.D. NUMBER

Date: 8-30-72 N

BULLETIN SER 73 H-13

Title: H2 REAR BRAKE MODIFICATION



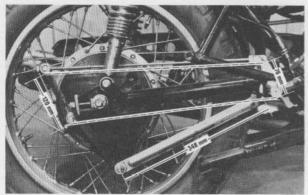
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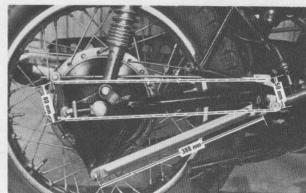
PROBLEM:

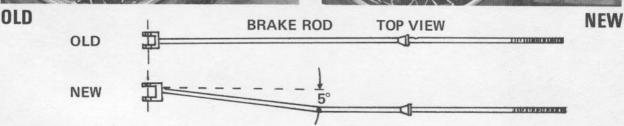
On early H2's there is a tendency for the brake pedal to bounce up and down when the brakes are applied on a rough surfaced road. This is due to the length of the brake cam lever and associated linkage geometry.

REMEDY:

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° accommodation bend in it, and the brake cam lever and the brake pedal shaft lever have both been shortened. These changes greatly improve braking smoothness without affecting overall brake leverage. The new parts have been incorporated on H2's after frame No. H2F-05214.







PARTS INFORMATION:

	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD-NEW	I.D.
Torque Link	43007-027	348mm	43007-033	388mm	- □ 	
Brake Rod	43011-009	Straight	43011-013	Bent	← 0	
Brake Cam Lever	42029-017	120mm	42029-021	80mm	ONLY AS A COMPLETE	H2F-05214
Brake Pedal Shaft Lever	43004-009	76mm	43004-010	50mm	SET	

O = interchangeable $X = not interchangeable \square = not available$

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 6-1-72 N

Title: H1 REAR WHEEL SPOKES



Obsolete

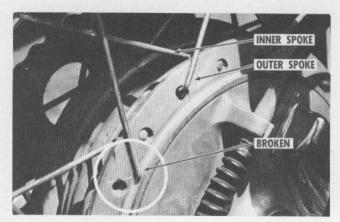
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PROBLEM:

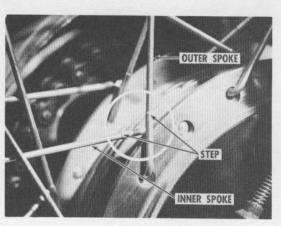
Rear wheel spoke breakage can occur on 1969-71 H1's, when rider operation is very demanding. Hard acceleration and braking impose great tensile (pulling) stresses on the rear wheel spokes. Breakage happens most often when the pavement is alternately wet and dry, such as accelerating through an underpass, where the tire may spin on wet pavement or gravel and then "grab" when passing onto dry pavement. Generally, the spoke breaks at the bend near the hub end.

CORRECTION:

On all H1's after frame number KAF-47245, the rear wheel spokes are changed for more strength. The gauge of the spoke is increased from #9 to #8 at the hub end.



EARLY H1 STRAIGHT-TYPE SPOKES



LATE H1 STEPPED-TYPE SPOKES

PARTS INFORMATION:

	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD NEW	I.D.
Inner Spokes	41027-012	Straight #9 3.5mm Ø	41027-047	Stepped #8/9 4.0/ 3.5mm Ø	+ 0 +	KAF-47245
Outer Spokes	41028-013	Straight #9 3.5mm Ø	41028-046	Stepped #8/9 4.0/ 3.5mm Ø	0	

O = interchangeable X = not interchangeable $\square = not available$

The wheel rim and wheel hub are unchanged.

NOTE: Spoke breakage is accelerated by corrosion and looseness. Make sure the end of the battery vent hose is pointed away from the wheel. In coastal regions and during wintertime in northern regions, the motorcycle is exposed to salt water corrosion, which can weaken the spokes. Repeated flexing and stretching will bring on early spoke failure; this can be minimized by checking and tightening the spokes at regular intervals (every month or each 2000 miles).

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 6-15-72 N

BULLETIN SER 73 H-11

Title: H2 PRIMARY PINION NUT



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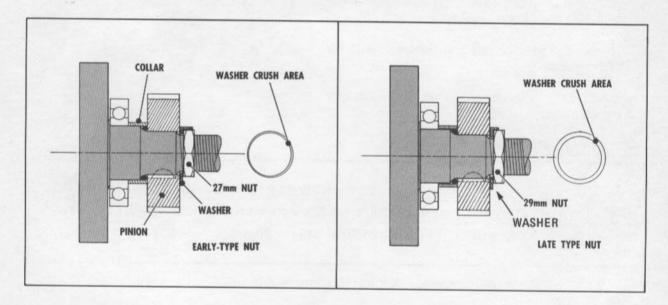
Obsolete

PROBLEM:

In the H2, a knocking noise may develop in the right engine cover which sounds like a worn, loose clutch. The knock is caused by play between the crankshaft, woodruff key, and primary pinion. If the knocking is allowed to continue the woodruff key may be damaged.

CAUSE:

Surprisingly, the primary pinion nut does not loosen (turn) on the crankshaft. Instead, the lockwasher is crushed, relieving the pinion of nut tension. Then the gear is held from twisting only by the woodruff key. As the drawing below shows, the "crush" area on the lockwasher, which is determined by the I.D. of the pinion gear and the O.D. of the pinion nut, is very small.



The knocking results from the pinion keyway hitting the woodruff key as the pinion twists on the crankshaft.

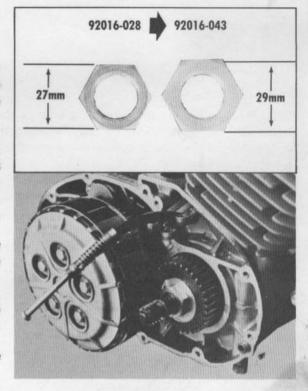
CORRECTION:

A new larger nut, with a 29mm O.D., is used to increase the lockwasher crush area and eliminate washer extrusion. The larger nut has been installed in all H2's after engine number H2E-05228.

INSTALLATION:

To install the large nut -

- A. Loosen the oil pump flange screws, and disconnect the pump cable. Take off the right engine cover, leaving the oil lines fastened to the pump.
- B. Flatten the lock washer and take off the nut, lock washer, and primary pinion. NOTE: It is not necessary to remove the oil pump pinion.
- C. Install a new woodruff key (Part #510A5100).
- D. Install the primary pinion, and install a new lock washer (Part #42OB2014), engaging the tang with the pinion keyway.
- E. Thread on the large nut and tighten it with 85 lb.-ft. torque.
- F. Bend up the lock washer so that it contacts one flat of the nut.



PARTS INFORMATION:

DESCRIPTION	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD-NEW.	
Primary Pinion Nut	92016-028	27mm	92016-043	29mm	→ ○	H2E-05228

O = interchangeable X = not interchangeable $\square = not available$

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.



Date: 5-17-72 N

BULLETIN SER. '73 H-9

Title: H2 RECTIFIER



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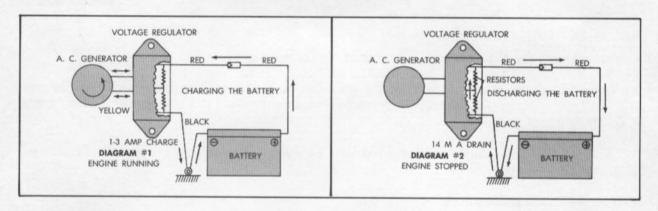
obsolete

PROBLEM:

If the owner doesn't drive frequently, the H2 may discharge the battery. The problem has been most prevalent in cold-weather areas, where usage is limited.

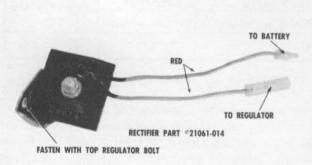
CAUSE:

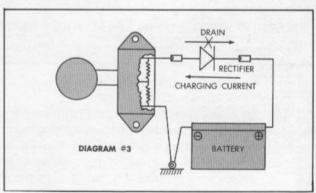
The H2 voltage regulator is connected to the battery by a red wire. This red wire carries the battery charging current when the engine is running. Because of two small resistors in the regulator circuitry, there is a slight current drain on the battery when the engine stops. In a fully charged state, it would take 2-3 weeks of inactivity for the battery to reach a serious discharge condition, because the current draw is so small (12-16 MA).



CORRECTION:

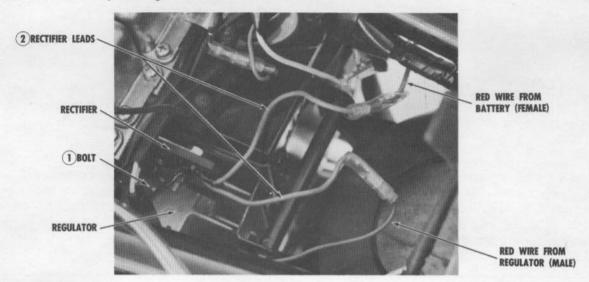
A supplemental rectifier has been developed to stop reverse current leakage, and yet allow generator current to charge the battery.





ACTION:

The rectifier has been incorporated in H2 motorcycles at Frame No. H2F-13266. This part *must* be installed on all H2's up through Frame No. H2F-13265.



INSTALLATION:

Lift the seat, remove the air cleaner rubber duct, and proceed as follows:

- Take out the top mounting bolt for the regulator. Hold the rectifier in a vertical position, and install the bolt. <u>NOTE</u>: The rubber protector keeps the fin from shorting against adjacent metal parts.
- 2. Separate the snap connector in the red wire between the battery and regulator. Connect the rectifier leads as shown.
- 3. Replace the air cleaner duct.

PARTS INFORMATION:

DESCRIPTION	OLD	PARTS	NEW P	ARTS	INTER- CHANGE	EFFECTIVE
	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD < →NEW	
Rectifier	None		21061-014		◆ 0	H2F-13266

O = interchangeable X = not interchangeable $\square = not available$

NOTE: In case battery discharging problems are encountered after installing the rectifier, separate the two yellow leads between the generator and regulator. Using an ohmmeter (RX1 scale), check resistance between the two yellow leads from the generator; it must be 0.4Ω. From either lead to ground must show maximum resistance (∞). Any other meter readings indicate a defective charging coil in the stator, which must be replaced.

WARRANTY INFORMATION:

Use job code X011 (0.1 hr.) to install the supplemental rectifier on an H2 before frame number H2F-13266.

This is a factory directed modification, CLAIM TYPE 3 on the Warranty Request Form.

NOTE: Dealers subscribing to the Small Claims Option Program are required to perform this modification and submit a Warranty Request Form for each unit so modified. The Small Claims Option Program applies to claim types 1 and 2 only. ■

Title: H2 ENGINE MOUNT SHIMS

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PROBLEM:

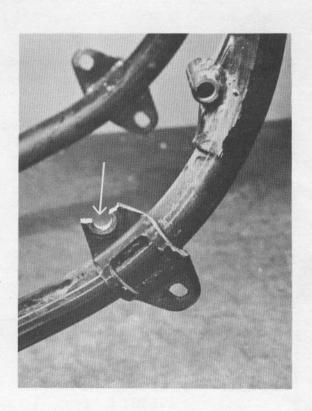
The H2 750cc engine can loosen in its frame mounting, causing rider discomfort and accelerated wear. In an extreme case, the frame lugs may fracture from engine vibration, aggravated by the loose mounts.

CAUSE:

The frame lugs have 1.0-1.5mm clearance with the engine mounting bosses to allow easy removal/ installation. These lugs are meant to be pulled in as the bolts are tightened. It has been found that the lugs take a "set", relieving tension on the mounting bolts.

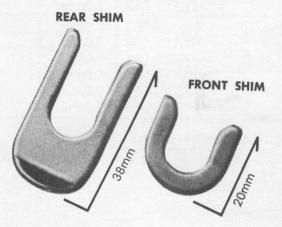
CORRECTION:

Engine mount shims must be used to take up the clearance between the frame lugs and engine bosses at the two bottom mounts. The factory has installed these shims on all H2's after Frame No. H2F-09082.



IMPORTANT:

For all units before frame number H2-09082, the shims must be installed.



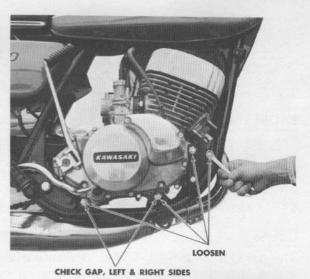
INSTALLATION:

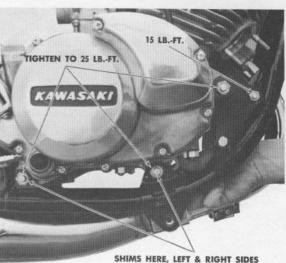
To install the shims:

- A. Take off the left and right mufflers, and loosen the center exhaust pipe holder nuts. IMPORTANT: This step relieves the front mounting lugs of outside stresses which could affect shim adjustment. Loosen the engine mount bolts shown here.
- B. Without moving the engine, use feeler gauges to check the clearances between the engine bosses and frame lugs at these 2 mounts (both sides).
- C. At each of the 4 gaps, insert the correct-sized shim to take up all clearance. NOTE: If necessary, you can "stack" the shims.
- D. Tighten the three 10mmØ engine mount bolts to 25 lb.-ft. torque. Then tighten the 8mmØ bolt with 15 lb.-ft. torque.

IMPORTANT: Advise the owner to check the engine mount bolts for loosening at regular intervals. Also, this is a mandatory check item on scheduled dealer services.

DESCRIPTION	P/N	REMARKS	NOTES
Front Shim	92025-048	0.5mm	
	92025-049	0.8mm	
	92025-050	1.0mm	
	92025-051	1.6mm	
	92025-052	2.0mm	
Rear Shim	92025-053	0.5mm	
	92025-054	0.8mm	
	92025-055	1.0mm	
	92025-056	1.6mm	
	92025-057	2.0mm	
	92025-058	2.3mm	





WARRANTY INFORMATION:

This work must be performed on all H2's before engine number H2E-09082. Use job code X010 (1.0 hr.).

This is a factory directed modification, CLAIM TYPE 3 on the Warranty Request Form.

NOTE: Dealers subscribing to the Small Claims Option Program are required to perform this modification and submit a Warranty Request Form for each unit so modified. The Small Claims Option Program applies to claim types 1 and 2 only.■

Date: 12-25-71 N

BULLETIN SER 73 H-5

Title: H1B AIR CLEANER SILENCER



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obsolete

BACKGROUND:

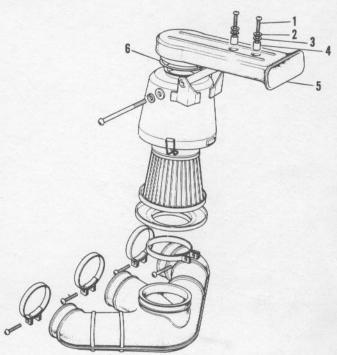
A silencer has been installed on top of the air cleaner housing of the H1B (disc-brake model). The resulting decrease in overall vehicle noise is gained by damping out the "moaning" sound from the engine air intake system. This air horn must be used on all 1972 H1's sold in California to meet the State's lower standards for motorcycle noise levels, which takes effect in January 1972.

PROBLEM:

Because of a production error, some of the initial shipment of H1B's were not equipped with the silencer at the factory. These motorcycles must have the silencer installed before sale in California. To promote better relations with the non-motorcycling public, the silencer should be installed on all H1B's in the field. The required parts are shown below.

	DESCRIPTION	P/N	REMARKS
1	Pan Head Screw	220B0645	6 x 45 (2 ea.)
2	Plain Washer	92022-125	6mm (2 ea.)
3	Damper Rub- ber	92075-118	(2 ea.)
4	Collar, Silence	92027-149	(2 ea.)
5	Silencer	11016-004	
6	Gasket	11017-008	





CAUTION:

Don't use overlong screws and don't leave out any washers or the screws will protrude from the bottom, damaging the battery.

WARRANTY INFORMATION:

Install the air cleaner silencer on any H1B which was not originally equipped with the silencer using job code X007 (0.1 hr.)

This is a factory directed modification, CLAIM TYPE 3 on the Warranty Request Form.

NOTE: Dealers subscribing to the Small Claims Option Program are required to perform this modification and submit a Warranty Request Form for each unit so modified. The Small Claims Option Program applies to claim types 1 and 2 only. ■

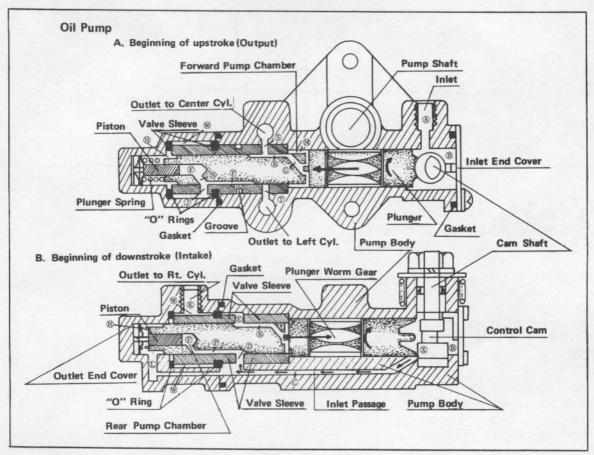


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obsolete

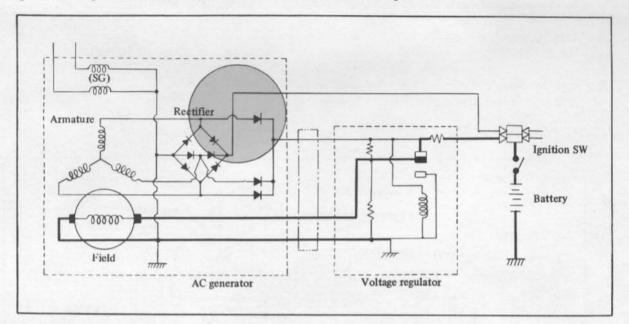
The following corrections should be made to the new H Series Shop Manual.

- A. Page 20, Paragraph e. The connecting rod small end play service limit should be 0.0039 in. (0.10mm).
- B. Page 28, Second Column. Line five should read: "the clutch hub. Thus, the drive train is as"
- C. Page 44. Diagram 182 should be corrected to match the following diagram:



- D. Page 45, First Column. Line eleven should read: "follower coincides with the center cylinder outlet"
- E. Page 45, First Column. Line twenty-one should read: "around to the outlet K and from there to the right"
- F. Page 45, Second Column. Line twenty-eight should read: "T" to the center on left cylinder outlet."
- G. Page 45, Second Column, Line twenty-eight should read: "flows into space W to the engine right cylinder"
- H. Page 52, Table 21. H2 jet needle should be "5EJ15-3." H2 measurement "A" should be "same as H1."

- Page 65, Table 31 Spring Length:
 H2 Standard Rear Length should read "2.36 in. (60mm)"
 H2 Service Limit Rear Length should read "2.48 in. (63mm)"
- J. Page 104, Diagram #399 should be corrected to match the diagram below:



- K. Page 119, Ignition Rectifier Unit, Paragraph 1, values should read:
 - + to BK-W, to B1 R = 20 to 35Ω
 - + to BK-W, to G R = 20 to 35Ω
 - + to BK-W, to W R = 70 to 250Ω
- L. Page 119, Ignition Rectifier Unit, Paragraph 2, values should read:
 - to BK-W, + to LG R = 25 to 250 Ω
- M. Page 120, Regulator, Paragraph 1, values should read:
 - + to BK, to Red R = 700 to 1000Ω
 - to BK, + to Red R = 70 to 200 Ω
- N. Page 120, Regulator, Paragraph 2, values should read:
 - + to BK, to Y R = 1 to 1.2K Ω
 - to BK, = Y R + 25 to 100Ω
- O. Page 120, Regulator, Paragraph 3, values should read:
 - + to R, to Y R = 25 to 90Ω
 - to R, + to Y

One Y lead: $R = under 2 K\Omega$ Other Y lead: $R = under 6 K\Omega$

- P. Page 120, Paragraph 4 should read:
 - Connect the battery voltage indicated to the Black lead and + to the Red lead. Then measure resistance between the two Yellow leads.

Figure 440 – R = infinity (no reading) with test leads reversed, R = 500Ω

Figure 441 — R = infinity (no reading) ■



Date: 3-28-72 N

Title: BRACKET H1B STEERING DAMPER



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obsolete

BACKGROUND:

The disc-brake-equipped Model H1B has a 5-position, adjustable telescopic hydraulic steering damper. The "stiffness" of steering dampening can be increased by turning the damper knob to a higher number.

PROBLEM:

With the damper in the #5 (hardest) position, the push-pull force can cause the damper rear frame stanchion to flex and bend.



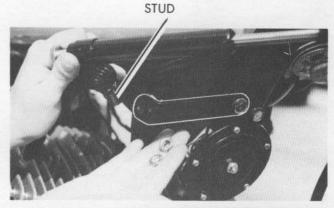
CORRECTION:

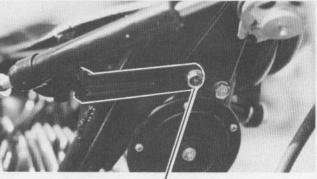
This reinforcing bracket must be installed to prevent flexing.

INSTALLATION:

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 (P/N 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.





BOLT, LOCKWASHER & FLATWASHER

PARTS INFORMATION:

	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD-NEW	I.D.
Steering Damper Bracket	None		32056-012	New Part	← 0	(H1B) KAF-58413

O = interchangeable X = not interchangeable \Box = not available

The reinforcing bracket is incorporated on all H1B units after Frame No. KAF-58413. IMPORTANT: If the adjustable-type damper is installed on the H1 and H1C with CDI, the reinforcing bracket must be used with the damper.

WARRANTY INFORMATION:

Use job code X008 (0.2 hr.) to install the steering damper bracket on any H1B before frame number KAF-58413.

This is a factory directed modification, CLAIM TYPE 3 on the Warranty Request Form.

NOTE: Dealers subscribing to the Small Claims option Program are required to perform this modification and submit a Warranty Request Form for each unit so modified. The Small Claims Option Program applies to claim types 1 and 2 only. ■

Date: 7-14-72 N

BULLETIN SER 73 H-1

Title: H1 CYLINDER EXHAUST

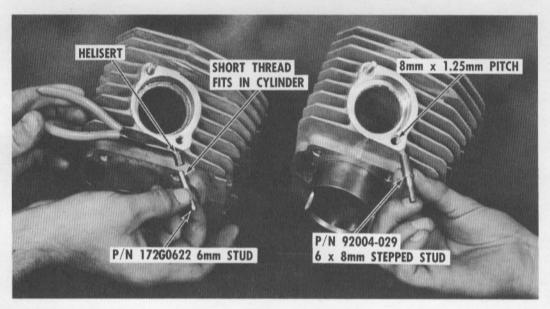


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obsolete

SUBJECT:

To improve servicing, the cylinder exhaust flange stud has been changed from a plain 6mm stud to a stepped 6mm x 8mm stud. The difference in parts is shown below.



APPLICATION:

The 6mm x 8mm stud was incorporated on H1's after Engine KAE-03138.

SERVICING:

- A. H1's BEFORE ENGINE KAE-03138. The original cylinders on these units have helical thread inserts. If a flange stud breaks, you must use the early 6mm stud for replacement. NOTE: The 8mm stud cannot be used in the early cylinders because the hole is a 1.0mm pitch thread, while the stud is a 1.25mm pitch thread.
- B. H1's AFTER ENGINE KAE-03138. The later 6mm x 8mm stud must be used for replacement in these cylinders.

PARTS INFORMATION:

Studs are not included with the cylinders but may be ordered separately from Parts Department.

	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLDNEW	I.D.
Stud	172G0622	6mm Stud	92004-029	6 x 8mm Stepped Stud	* X •	KAE-03138

O = interchangeable X = not interchangeable □ = not available

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

NEUTRAL POSITIONER

12-19-75

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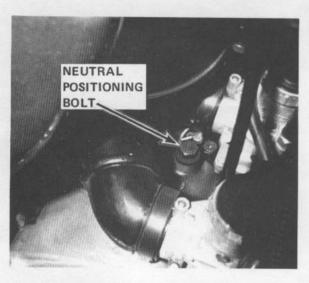
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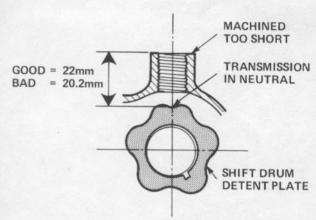


SERVICE INFORMATION

PROBLEM: Neutral Positioning Bolt Boss Too Short

The 1976 KH500 has a neutral positioning bolt on the upper crankcase. On some early KH500's, the positioning bolt boss was machined too short. Installation of the positioning bolt and pin in a short boss may interfere with normal gear changing.



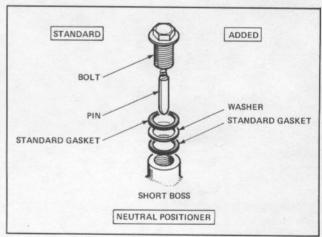


FACTORY ACTION: Installed Extra Gasket and Washer

All affected units have an added gasket and washer under the neutral positioning bolt.

DEALER ACTION: When Servicing Affected Units, Reinstall Added Parts

Check for the added parts any time the neutral positioner is removed, or whenever a customer complains of shifting problems on an affected unit.



PARTS INFORMATION:

DESCRIPTION	PART NO.	THICKNESS	REMARKS	EFFECTIVE I.D.
Washer, Plain	92022-053	0.8mm	Used as a set to	E/N KAE119404 ~
Gasket	92065-090	1.0mm	raise neutral positioning bolt.	KAE 119631

WARRANTY INFORMATION.

This Bulletin is service information only, not warranty information. Use normal warranty procedures.



Date: 5-23-74N

BULLETIN SER 74 H-28

Title: H1E BRAKE FLUID LEAK



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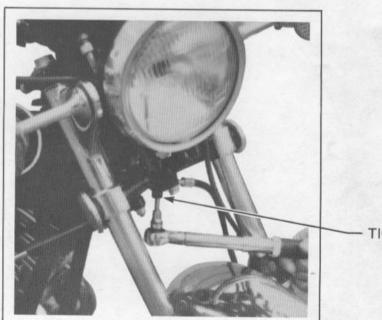
IMPORTANT NOTICE

PROBLEM:

On some H1E's between Frame Numbers H1F-025000 and H1F-030300 there may be a brake fluid leak around the allen bolt on the bottom of the steering stem.

SOLUTION:

- 1) Tighten this allen bolt on all affected H1E's to 3.0 kg-m (22 ft-lb).
- If the bolt was loose, or if there are signs of brake fluid leakage, check brake lever operation and master cylinder brake fluid level.
- If the brake lever is soft or if fluid level is low, bleed the brake system. Refer to H Series Shop Manual, Page 78.



TIGHTEN TO 3.0 kg-m (22 ft-lb)

WARRANTY INFORMATION:

This Bulletin is for service information only, not for warranty authorization.

Title: H1E ENGINE GROUND WIRE

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REFER TO BULLETIN SER '74 S-10

PROBLEM

On the early H1E motorcycles engine misfiring may become a problem when the electrical system is under a heavy load. For example, with the headlight on the turn signals may produce misfiring when they flash.

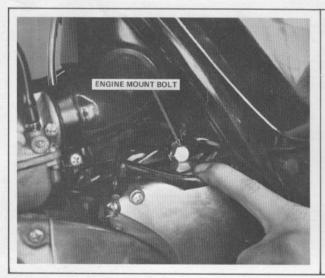
CAUSE

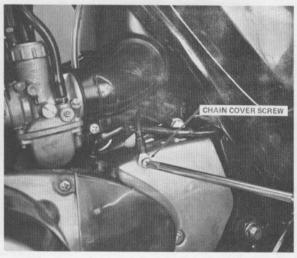
This problem is directly related to the new rubber mounting system of the engine isolating it from the frame. The small black wire which leads from the stator assembly to the black/yellow lead under the seat provides the ground for the engine.

The black/yellow wires of the main wiring harness are the common ground system for the headlight, taillight, turn signals and instrument lights. These wires are too small to support the amperage requirements of the ignition system plus the lights. Voltage to the ignition coils decreases as the electrical load increases resulting in engine misfiring.

SOLUTION

This problem has been cured in production after frame number H1F-023021 by the addition of a ground wire between the frame and the engine chain cover. A heavy gauge lead is used to assure the least possible resistance between the engine and frame, allowing the electrical demand of the ignition system to bypass the black/yellow ground wires in the main wiring harness.





INSTALLATION

For proper ignition performance under all conditions this ground wire (P/N 26011-084) must be installed on all H1E motorcycles before frame number H1F-023021.

STEP 1 Remove the rear engine mount bolt shown in the first photo. The engine chain cover does NOT have to be removed to do this.

- STEP 2 Push the LH engine bracket upwards exposing the mounting tab on the frame. Sand or scrape the paint from the outside surface of the tab. Push the engine bracket back into place.
- STEP 3 Remove the chain cover screw shown in the second photo. Put the screw through one end of the ground wire and reinstall the screw. Do not tighten. Put the engine mounting bolt through the other end of the ground wire while reinstalling it.
- STEP 4 Tighten the engine mounting bolt and the chain cover screw.

PARTS INFORMATION

DESCRIPTION	PART NUMBER	EFFECTIVE I.D.	REMARKS
Grounding Wire	26011-084	H1F-023021	Attaches from rear frame mount to chain cover screw.

WARRANTY INFORMATION

Install the ground wire on all H1E motorcycles before frame number H1F-023021.

WARRANTY REQUEST	SE PRINT ALL INFORMATION C T NUMBER AS SHOWN: 1 2 3 4 NOT PRINT IN SHADED REAS TO PRINT IN SHADED REAS TO PRINT IN SHADED REAS	NO. TO SAIL DAM	YPE IMARK	154901 ONE ONLY) SPARE PARTS ACCESSORY
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Date: 10-1-72 N

Title: H1 ENGINE MOUNT SHIMS



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PROBLEM:

There have been some complaints from the field about engine vibration on the H1, especially when the machine is operated at high speeds.

CORRECTION:

Kawasaki has decided to install engine mount shims on all new H1 motorcycles. These will be the same type of shims that are presently being used on the H2. All H1's, frame number H1F-00001 and above, will have engine mount shims installed at the factory.

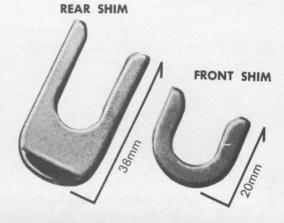
It is not necessary to install shims on all H1's now in the field, but if an individual motorcycle vibrates excessively, shimming should help to cure the problem. In any event, engine mount shims should be used whenever a frame is replaced.

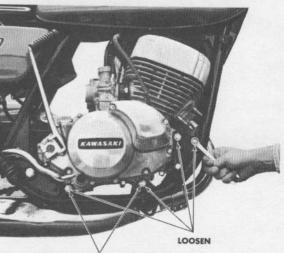
DESCRIPTION	P/N	REMARKS	NOTES
Front Shim	92025-048 92025-049 92025-050 92025-051 92025-052	0.5mm 0.8mm 1.0mm 1.6mm 2.0mm	Used in produc- tion on H1D H1F-
Rear Shim	92025-053 92025-054 92025-055 92025-056 92025-057 92025-058	0.5mm 0.8mm 1.0mm 1.6mm 2.0mm 2.3mm	00001 and above

INSTALLATION:

To install shims:

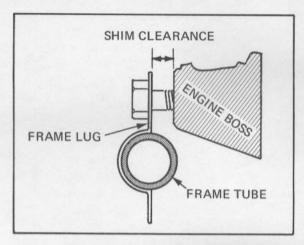
A. Take off the left and right mufflers and enter exhaust pipe holder nuts. IMPORTANT: This step relieves the front mounting lugs of outside stresses which could affect shim adjustment. Loosen the engine mount bolts shown.



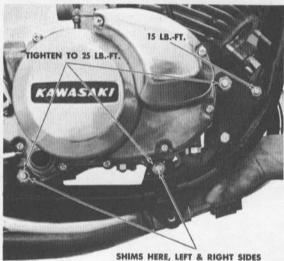


CHECK GAP, LEFT & RIGHT SIDES

B. Without removing the engine, use a thickness gauge to check the clearances between the engine bosses and the frame lugs on both sides of the machine as shown.



- C. At each of the four gaps, insert the proper size shim to take up all clearance. NOTE: If necessary, the shims can be stacked to get the right thickness.
- D. Tighten the three 10mm diameter engine mounting bolts to 25 lb.-ft. torque. Then tighten the 8mm diameter bolt to 15 lb.-ft.



IMPORTANT:

Advise the owner to check the engine mount bolts for tightness at regular intervals. Also, this is a mandatory check on all scheduled dealer inspections.

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 7-29-72 N

BULLETIN SER 73 H-12

Title: H1B IGNITION TIMING



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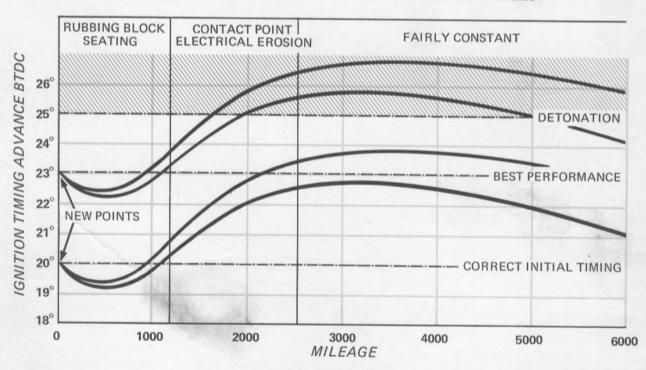
PURPOSE:

There has been some confusion concerning the proper ignition timing of the H1B. The purpose of this bulletin is to clear up this situation.

RECOMMENDATION:

Optimum ignition timing for the H1B is 23° (2.94mm) BTDC. The H1B has no ignition timing advance. The timing remains at a fixed point throughout the RPM range. However, as the graph below shows, if new points are initially set at 23° they will soon retard 1° because of rubbing block wearing-in, and then advance to more than 25° (from contact erosion) where detonation causes piston holing and severe engine damage. Since engine performance varies little from 19° to 25°, the factory recommends that new points be set at 20° BTDC (2.23mm). From this setting the timing will advance to 23° 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° until they are replaced.

H1-B IGNITION TIMING CHANGE OVER FIRST 6000 MILES



NOTE: If plug fouling or sluggish performance is a <u>serious</u> problem on a new H1B, advancing the timing to 23° 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 overadvanced timing.

WARRANTY INFORMATION:

This bulletin is for service information only, not for warranty authorization.



Date: 12-5-72 N

BULLETIN SER 73 H-4

Title: H1 AC GENERATOR ROTOR

H

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PROBLEM:

The alternator rotor, being mounted on the end of the crankshaft, turns at the same speed as the engine. At high engine rpm, the centrifugal force on the rotor winding is considerable. Failure of the rotor can result because the winding is stretched and either shorted or snapped by the tremendous force.

DIAGNOSIS:

Resistance Tests.

The rotor may be checked by testing the resistance between the inner and outer slip of the rotor with a multimeter set in the RXI position. Touch one lead to each slip ring as illustrated; the resistance should be between 3.5 and 5.5 ohms. If the resistance is greater than 5.5 ohms, the windings have been snapped (open circuit). If the resistance is less than 3.5 ohms, the windings have shorted (short circuit). Now touch one lead to the core (center) of the rotor and the other to each slip ring in turn. The resistance for both should be infinite. Any other reading indicates that the slip ring is grounded.





3.5 to 5.5 OHMS



OPEN CIRCUIT



SHORT CIRCUIT

Load Tests.

A defect which shows up only under load may be detected as follows. Set the selector switch to the "12 A" position and plug the red lead into the "+12 A" hole. Connect the red lead to the positive lead from a six volt test battery. CAUTION: Don't use a 12V battery or you could ruin the rotor windings. Touch the negative lead from the battery to one of the rotor slip rings. Momentarily, tap the black lead from the multimeter on the other slip ring. If the needle swings wildly across the face of the meter the rotor is shorted.

CAUTION:

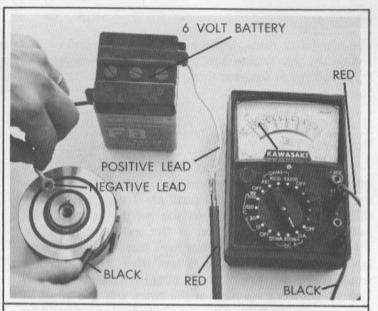
Do not hold the black lead to the slip ring under these conditions or the multimeter will be damaged. If the needle rises to 1.1 to 1.7 amps (read the 0 to 120 scale as 0 to 12.0 amps) the rotor is good. A lower reading indicates an open circuit.

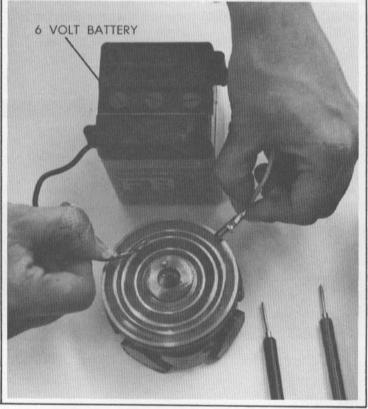


Connect the 6 volt battery to the rotor as shown with one lead to each slip ring. Remove the battery after thirty seconds and measure the resistance as before. If the reading is out of the acceptable range after this 6 volt load, the rotor is defective.

REPAIR:

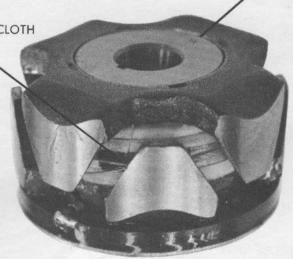
With any of these types of failure, the rotor must be replaced.





PARTS MODIFICATION:

There have been two changes in the rotor (part no. unchanged) to counter-measure this tendency toward high rpm failure. These rotors may be identified by square holes in the insulating cloth on the windings. The "B" type rotor is used in production from engine number KAE-43491 to KAE-69531. The latest modification, marked "C", changes the rubber based resin to plastic based. This rotor is used on engines KAE-69532 and up.



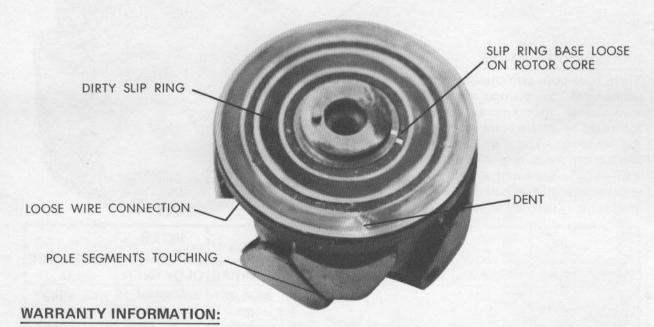
DESCRIPTION	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD-NEW	I.D.
Alternator Rotor	21007-012		Same	Marked "B"		KAE-43491 to KAE-69531
		Paul val	Same	Marked "C"		KAE-69532

O = interchangeable $X = not interchangeable \square = not available$

OTHER PROBLEMS:

Other rotor problems which have caused battery discharging occur infrequently, but can be difficult to trace.

- A. Loose slip ring. If one of the slip rings (usually the outer ring) loosens on the rotor face, an intermittent open circuit results. To check for this, connect the multimeter leads to the slip rings as in the first resistance test above, and try to move the rings, watching the multimeter needle for fluctuation.
- B. Dented slip ring. If one of the slip rings is dented or has excessive run-out, that brush will float and bounce at high engine speeds, resulting in arcing of the brush, accelerated brush wear, and reduced charging capacity. Maximum slip ring run-out is 0.012" (0.3mm).
- C. Overlong stator screw touching rotor. If an overlong screw is used in the stator face, it may protrude enough to contact the outer slip ring, resulting in a short-circuit. On one unit, this happened only when the engine was warm and the crankshaft expanded to push the rotor in contact with the screw.
- D. Rotor pole pieces twisted and touching. If one of the pole pieces (finger-shaped rings) twists on the rotor shaft, there will be a magnetic short circuit between the North and South pole pieces from contact. CAUTION: Never insert a screwdriver into the rotor poles to keep the crankshaft from turning.
- E. Dirty Slip Ring. If the slip rings are dirty, there may not be a proper connection to the brushes. This will result in inconsistent charging. Clean dirty slip rings with trichloroethylene and #000 steel wool.
- F. Loose Wire Connection. If either of the wires from the windows to the slip rings is loose, the alternator will not charge.
- G. Worn Brushes. Brushes must be replaced when they are worn to less than 0.38" (9mm) in length.



This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization. ■

Date: 8-1-72 N

BULLETIN SER 73 H-3

Title: O-D ROTOR & DIST. SHAFT

H

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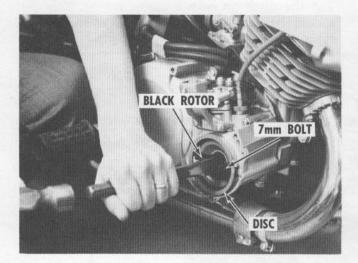
PROBLEM:

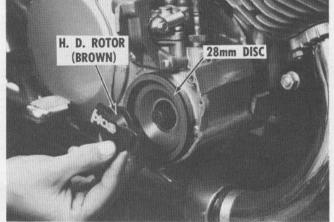
Removing the distributor rotor from an H1 has been a time consuming job, because the mechanic must first take off the right engine cover to get at the screw holding the rotor to the distributor shaft. We have also had some difficulty with arcing from the rotor tip to the attaching screw.

CORRECTION:

Kawasaki has developed two different corrective measures to eliminate these problems.

A. ALL H1's BEFORE KAE-08801: 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 of the H.D. brown rotor is shown below.





REMOVING BLACK ROTOR:

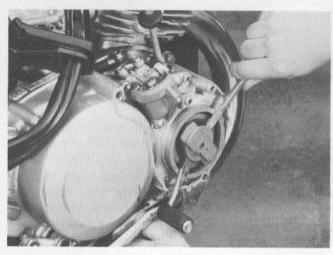
Break off the rotor arm on the same side as the bolt. Crack and remove the insulator disc. Take out the bolt with a 7mm wrench.

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.

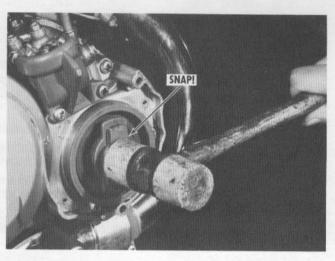
Please see reverse side for additional information

B. ALL H1's AFTER KAE-08800. 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.



TO REMOVE:

Turn the rotor so it points as shown. Pry on opposite sides of the rotor with two large screwdrivers and it will pop off.



TO INSTALL:

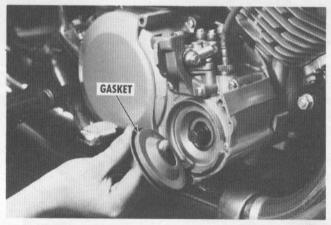
Align the rotor tip with the flat on the shaft. Tap the rotor on with a plastic mallet. You should hear a definitie "SNAP" when the rotor groove engages the shaft's snap ring.

CAUTION:

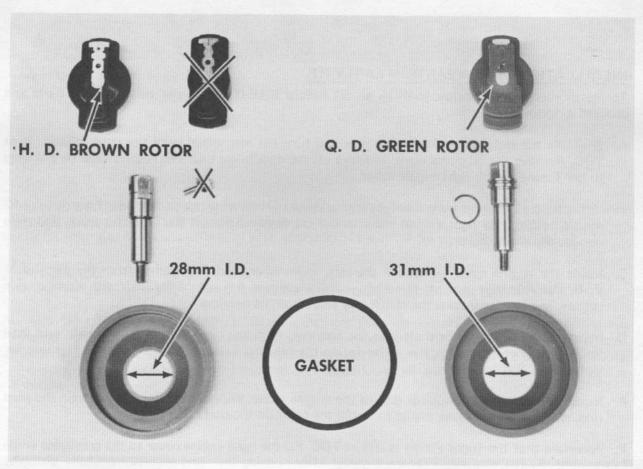
Make sure the rotor is fully engaged with the snap ring before installing the distributor cap, or else the rotor will back out and damage the cap.

NEW GASKET:

Kawasaki has a new gasket to improve sealing of the distributor chamber. It fits between the engine cover and insulator disc as shown.



This new gasket was incorporated on H1's after Engine KAE-11300, but it can be used on any H1 for better sealing.



PARTS INFORMATION:

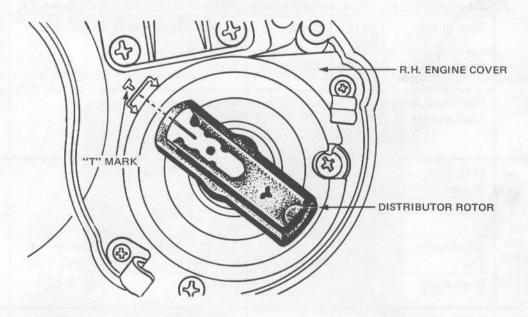
	ariela con que	OLD PARTS		NEW PARTS		INTER- CHANGE	
	DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLDNEW	EFFECTIVE I.D.
	Dist. Rotor	21142- 001	Black	21142- 003	Brown H.D.	→ 0 →	Field Service Only
H1's before	before	isc 21144- 28m		Same	Same		0,
08801	Hex Head Bolt Lockwasher	92011- 016 92029- 013		Not Re- quired	-		
	Q.D. Dist. Rotor	21142- 001	Black	21142- 002	Green		KAE-08801
H1's after	Insulator Disc	21144- 001	28mm I.D.	21144- 002	31mm I.D.		
08800	Distributor Shaft	21143- 001	w/Set Screw	21143- 002	Snap Ring Groove	→ O → ONLY AS	
	Snap Ring	_	-	92036- 016		A SET	
All H1's	Sealing Gasket			92065- 072	Behind Insulator Disc	▼ 0	KAE-11300

O = interchangeable X = not interchangeable \Box = not available

INSTALLATION OF NEW PARTS IN EARLY H1:

To install the new distributor shaft in an H1 before KAE-08800, 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 its 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, and 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 exactly centered in the T-Zone, since it does not govern ignition timing.
- G. Install the 12 engine cover screws, kickstart lever, oil pump, distributor cap and gasket, and oil pump cover.



WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization. ■

Date: 1-14-70 N

BULLETIN SER 73 H-2

Title: H1 HIGH TENSION WIRING

H

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PROBLEM:

An early H1 may start losing power, misfiring, backfiring, or stop running altogether. Installation of new spark plugs seems to clear up the problem, leaving the impression that the used plugs were defective. However, the problem returns after a short period of use with the new spark plugs.

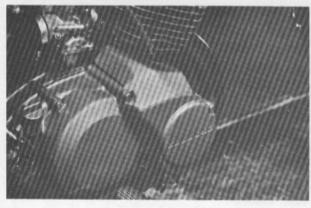
CAUSE:

The spark plugs generally are not the cause of the problem. We have found the high tension wiring leaks electricity to adjoining metal engine parts under high voltage loads. New spark plugs require less voltage to fire because the electrodes have sharp edges. As the plugs are used, these sharp edges are rounded off by high energy discharge and erosion from heat and chemical action in the combustion chamber. Consequently, they require an increasing amount of voltage to fire as mileage accumulates. Worn spark plugs, over-rich oil pump settings, or incorrect fuel mixtures demand more voltage from the ignition system to fire the spark plugs. These conditions "back up" the voltage in the secondary wiring until it jumps through the H.T. cord insulation to an inviting engine ground rather than fire the plugs.

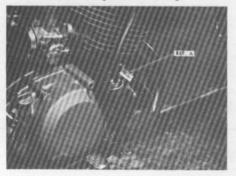
CORRECTION:

KAWASAKI has developed a set of high tension components which, after thorough testing, has proven completely reliable and eliminates the insulation leakage problem. The purpose of the new components is to re-route the H.T. cords so they are a safe distance from metal engine grounds like the oil pump, oil pump cover, engine cover, cylinders, carburetors, etc. Additionally, the type of H.T. cord has been changed from DAIICHI brand to Belden, a better-insulated cable.

EARLY H.T. WIRING



H1 with original H.T. wiring



LATE H.T. WIRING



H1 with new H.T. wiring kit (P/N 99990-015)

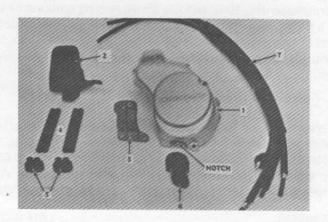


APPLICATION:

The new H.T. components were incorporated on H1's after Engine KAE-08800. The drain grommet was not used until KAE-11300, so on units from KAE-08800 to KAE-11300, the oil pump cover is not notched for the drain grommet.

PARTS ORDERING:

If you want to convert an older H1 to all new parts, the component parts are available separately.

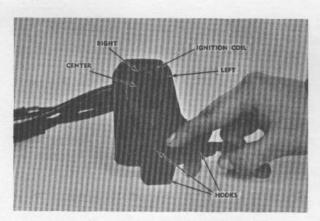


PARTS INFORMATION:

	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD-NEW	I.D.
Oil Pump Cover	14030-013		14030-025	w/notch for drain grommet	X ►	KAE-11300
H.T. Cord Grommet	92071-040		92071-043		▼ 0 ONLY AS	KAE-08800
Oil Pump Lever Cover	14030-014	Aluminum	14030-024	Plastic	A SET	
H.T. Cord Protector	92115-001	145mm	92115-002	120mm	114,000	
Dist. Cap Grommet	92071-031	2 Per Motorcycle	Same	2 per motorcycle		
Drain Grom- met			16116-005	New Part	→ X	KAE-11300
H.T. Cord Assy.	21150-001		21150-003	Belden wire	— X →	KAE-08800

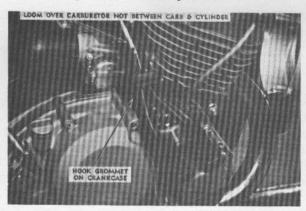
O = interchangeable $X = not interchangeable \Box = not available$

NOTE: Watch the following items when installing the new parts.



To save time, use the photo above for inserting the cords in the grommet. The bottom cords should protrude 1" more than the top ones.

Use Rubber band P/N 92072-013 to fix loom to right frame tube under gas tank.



To keep water from entering, make sure the bottom of the grommet is hooked onto the crankcase. Route the H.T. cords over the RH carburetor, NOT between the carburetor and cylinder.

Jam the H.T. cords completely into the distributor cap sockets before installing the piercing screws.

REPLACING H.T. CORDS:

The only high tension wire assembly available in stock for the early H1 is the BELDEN #7789 secondary wire (P/N 21150-003). This cable is also stocked by most auto parts jobbers in 100 ft. reels. The H.T. cord lengths are listed below.

CORD USE	LENGTH
Center Cylinder	24.8" (63cm)
Right Cylinder	27.5" (70cm)
Ignition Coil	22.5" (57cm)
Left Cylinder	26.3" (67cm)
Total Length Req'd	101.1" (257cm)

WARRANTY INFORMATION:

Use job code X006 (0.7 hr.) for updating the high tension assy. on any H1 before engine number KAE-08800. This is a factory directed modification, CLAIM TYPE 3 on the Warranty Request Form.

NOTE: Dealers subscribing to the Small Claims Option Program are required to perform this modification and submit a Warranty Request Form for each unit so modified. The Small Claims Option Program applies to claim types 1 and 2 only.

■

S1, S2, S3 VOLTAGE Title: REGULATOR

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PROBLEM

Some S1, S2 and early S3 models have been troubled with a succession of blown headlights.

SOLUTION

The voltage regulator has been changed to reduce the generator charging voltage from 16.0 ± 0.5 volts to 15.0 ± 0.5 volts. This, of course, does not mean that the old style voltage regulator is the cause of all headlight problems. The voltage regulator should not be replaced until all the related components have been checked and found in order.

REFER TO BULLETIN SER. 73 Z-9 AND THE S SERIES SHOP MANUAL, P. 87

IDENTIFICATION

The new voltage regulators (15.0±0.5V) were first manufactured in August, 1973 beginning with the first lot of the month. This information is contained in the lot number 3H1. Any voltage regulator for the S1/S2/S3 manufactured before August, 1973 is the old 16.0±0.5V regulator. The date of manufacture of any voltage regulator can be determined by referring to the following information.

NEW VOLTAGE REGULATOR LOT NUMBER

(3)(H)(1)

► 1st lot of the month.

Each succeeding lot of regulators produced is assigned the following number until the month ends.

► Produced during the month of August. The following letters represent the month of manufacture.

A - January G - July

B - February H - August

C - March I - September

D - April

J - October

E - May

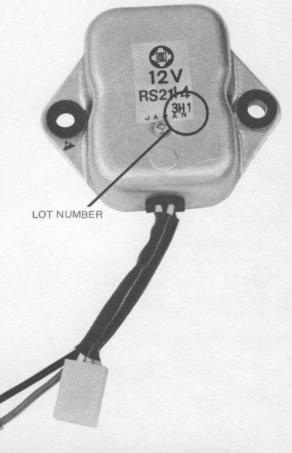
K - November

F - June

L - December

Produced in 1973. This number is the last

number in the year of manufacture.



Please see reverse side for additional information.

PARTS INFORMATION

DESCRIPTION	OLD PARTS		NEW PARTS		INTER- CHANGE	EFFECTIVE
	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD < →NEW	
\$1, \$2, \$3	21066- 012	16.0±0.5V	21066-020	15.0±0.5V	- →	S1F-13618
Voltage Regulator						S3F-02356 Lot No. 3H1

O = interchangeab	le
-------------------	----

X =	= not	interc	hange	pahl	6
/\	HOL	HILLOIG	Harry		

= not available 0 = not recommended

WARRANTY INFORMATION

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 5-5-73 N

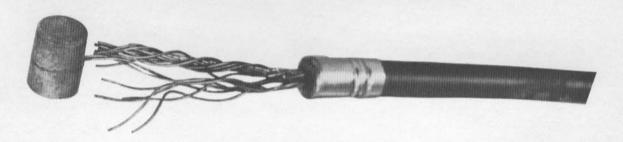
Title: S1/S2 CLUTCH CABLE

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Obsolete

PROBLEM:

Clutch cable breakage has been a regular problem on the S1 and S2. This is primarily the result of excessive wear at the hand lever. The cable flexes at the lever and the cable strands break at the lead nipple.



CORRECTION:

To correct this a new 2.5mm diameter cable has been used on all S1 and S2 motorcycles after engine number S1E-08257 and S2E-38301 and up. This new cable (P/N 54011-053) is 0.5mm thicker in diameter and has a teflon-type coating on the inside of the outer cable housing to reduce frictional wear.



PARTS INFORMATION:

The old cable (P/N 54011-040) is being removed from stock and the new cable will be substituted.

		PARTS		PARTS	INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD NEW	I.D.
Clutch Cable	54011-040	2.0mm Dia.	54011-053	2.5mm Dia.	0	S1E-08257 S2E-38301

O = interchangeable $X = not interchangeable \Box = not available$

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 12-5-73 N

BULLETIN SER 73 S-7

Title: S2 OIL PUMP MODIFICATION

SERIES

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PROBLEM:

There is a tendency for some Kawasaki 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 spark plug failure.

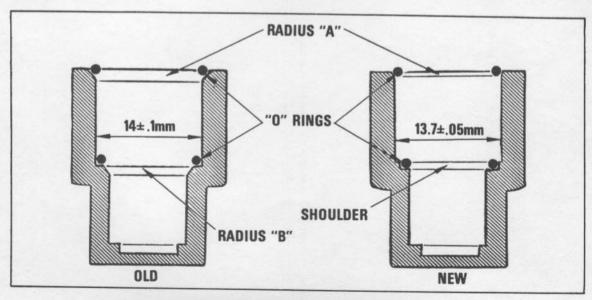
NOTE: On some very early S2's the end cover chamber was connected to the center cylinder, rather than the right. On all later models ('72, '73) the end chamber is connected to the right cylinder.

It should be noted that entirely different symptoms may indicate the same oil pump malfunction. An example of such a symptom would be right piston seizure. In this case, oil may be forced back into the main pump body through loose or defective O-rings. As a result, the right 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 stop oil seepage. The illustration below points out the differences between the old and new covers.

- A. Radius "A" has been decreased in depth to give the O-rings less "squish" space, making a tighter seal.
- B. Radius "B" has been eliminated altogether to improve the seal at that point.
- C. The internal diameter of the chamber has been decreased from 14 \pm .1mm to 13.7 \pm .05mm to compensate for O-ring shrinkage.
- D. A slight shoulder has been added to the base of the new chamber to further compress the O-ring.



APPLICATION:

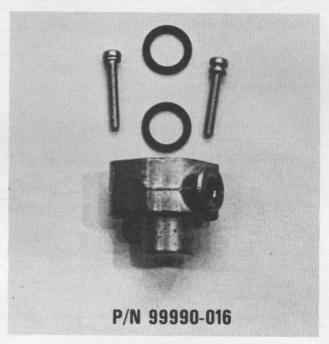
Modified oil pump end covers are presently being installed on all new S2's at the factory.

AVAILABILITY:

A conversion kit is now available from the parts department that will correct older model oil pumps. This kit consists of two mounting screws, two O-rings, and a new oil pump end cover. The part number for the Oil Pump Conversion Kit is 99990-016.

IMPORTANT:

Whenever an oil pump is disassembled for any reason, the O-rings must be replaced. The end cover O-rings are part number 16090-002.



THREE CYLINDER OIL PUMP CONVERSION KIT

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 10-1-72 N

BULLETIN SER 73 S-6

Title: S2 ENGINE MOUNT SHIMS

SERIES

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PROBLEM:

There have been some complaints from the field about engine vibration on the S2, especially when the machine is operated at high speed.

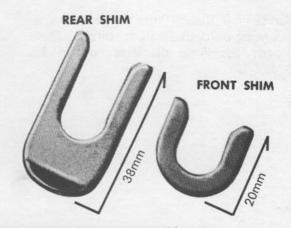
CORRECTION:

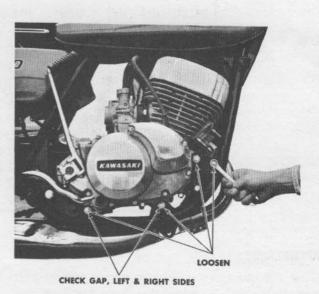
Kawasaki has decided to install engine mount shims on all new S2 motorcycles. These are the same type of shims that are presently being used on the H2 and H1. All S2's, frame number S2F-26858 and above, will have engine mount shims installed at the factory. It is not necessary to install shims on all S2's now in the field, but if an individual motorcycle vibrates excessively, shimming should help to cure the problem. In any event, engine mount shims should be used whenever a frame is replaced.



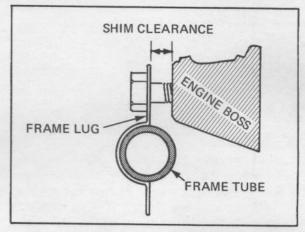
To install the shims:

A. Take off the left and right muffler and loosen the center exhaust pipe holder nuts. IMPORTANT: This step relieves the front mounting lugs of outside stresses that could affect shim adjustment. Loosen the engine mount bolts shown.

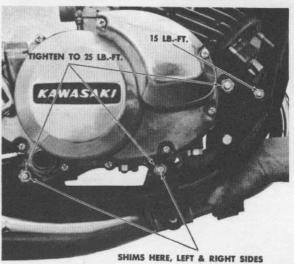




B. Without removing the engine, use a thickness gauge to check the clearances between the engine bosses and the frame lugs on both sides of the engine.



- C. At each of the four gaps, insert the proper size shim to take up all the clearance. NOTE: If necessary, you can "stack" shims.
- D. Tighten the three 10mm diameter engine mounting bolts to 24 lb.-ft. torque. Then tighten the 8mm diameter bolt to 15 lb.-ft.



DESCRIPTION	P/N	REMARKS	NOTES
Front Shim	92025-048	0.5mm	Used on all
	92025-049	0.8mm	S2's from
	92025-050	1.0mm	S2F-26858
	92025-051	1.6mm	
	92025-052	2.0mm	
Rear Shim	92025-053	0.5mm	
	92025-054	0.8mm	
	92025-055	1.0mm	
	92025-056	1.6mm	
	92025-057	2.0mm	
	92025-058	2.3mm	

IMPORTANT:

Advise the owner to check the engine mount-bolts for tightness at regular intervals. Also, this is a mandatory check on scheduled dealer services.

WARRANTY INFORMATION:

This bulletin is for service information only, not for warranty authorization.

Date: 9-30-72 N

BULLETIN SER 73 S-5

Title: S2 CRANKSHAFT CRANKCASE MODIFICATION

S SERIES

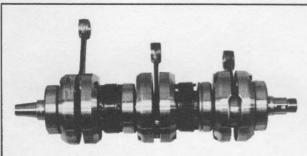
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BACKGROUND:

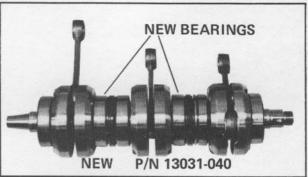
Even though the crankshaft has not been a serious warranty problem on the S2, there have been some cases of crank bearing failure on this model. As a result, the factory has decided to modify the crankshaft/crankcase assembly.

CHANGES:

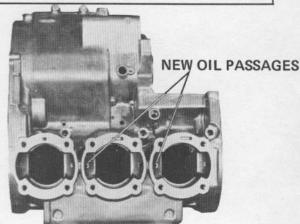
All S2's, engine number S2E-18507 and above, have been fitted with a 6 main bearing crankshaft (P/N 13031-040). It is similar to the crankshaft used on the H1. This new setup reduces crankshaft flexing, and distributes the engine load more evenly for smoother, quieter operation. The oil seals and bearing collars have also been modified so that the 6 bearing crankshaft can be installed on older S2's which were originally equipped with 4 bearing units.



OLD P/N 13031-037



To improve lubrication of the two new bearings, additional oil passages have been bored into the upper crankcase half. These cases have been installed on all S2's from engine number S2E-24749 up. The part number is unchanged.



PARTS INFORMATION:

	OLD	PARTS	NEW	PARTS	INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD NEW	
S2 Crankshaft	13031-037	4 Bearing	13031-040	6 Bearing	→ 0 →	S2E-18507
S2 Crankcase	14001-049	4 Oil Pas- sages	Same	6 Oil Pas- sages	→ 0 →	S2E-24749

O = will interchange X = will not interchange □ = not available

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

Date: 11-20-71 N

BULLETIN SER 73 S-2

Title: EXCESSIVE CLUTCH NOISE

SERIES

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obsolete

PROBLEM:

Some of the early S2 units may develop a rattling sound which seems to come from the right engine cover. The noise is most noticeable with the transmission in neutral, clutch hand lever released. When the hand lever is pulled, the rattling sound is eliminated. Usually, the noise is not present in a new unit, but develops within the first 500 miles of driving, if it occurs at all.

CAUSE:

The rattling noise is evidence of excessive clearance between the clutch housing drive fingers and the driven tabs on the friction plates. Slight variations in the clutch housing RPM resulting from engine firing impulses cause the housing to speed up and slow down slightly, and the tabs of the friction plates, held together by the clutch spring, are struck on one side (load) and then the other side (coast) by the housing fingers. Standard clearance between the fingers and the tabs is 0.002-0.022" (0.05-0.555 mm). As the clearance exceeds 0.010" (0.25mm), however, clutch rattle becomes more evident.

CORRECTION:

To take up the excessive clearance, Kawasaki has prepared clutch finger shims. Three shims are needed to repair one clutch.

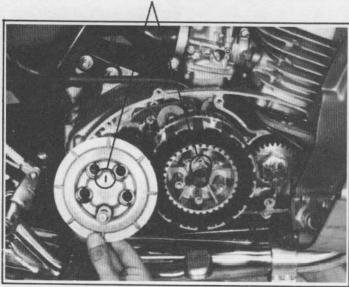
PART NO.	DESCRIPTION	PKG. QTY.
92037-079 92037-080	Clamp, 0.014" (0.35mm) thick Clamp, 0.010" (0.25mm) thick	12 ea. 12 ea.
	In the city	

Please see reverse side for additional information

REPAIR:

To install the shims, drain the oil and take off the right engine cover. Remove the pressure plate bolts and springs, and then take off the pressure plate and pull the clutch plate "pack". Install the three shims as shown here, at 120° intervals, or 4 fingers apart. IM-PORTANT: The shims must be installed on the "coast" side of the clutch housing finger. NOTE: Make sure the three shims are all the same thickness.

ALIGN MARK WITH LOCKWASHER HOLE



To assemble the clutch, start with the outer steel plate which is 0.075" (1.9mm) thick. Then install a friction plate, with spring ring. Alternate steel and friction plates until there are 5 steel and 6 friction plates. NOTE: The other 4 steel plates are 0.063" (1.6mm) thick. Make sure the pusher is in place, and then "time" the pressure plate as shown here.

Insert the clutch springs, and install the bolts with washers. Tighten the bolts to 4 lb.-ft.

CHECKING FOR DRAG:

At this point, operate the clutch lever and make sure that the clutch disengages smoothly and that the plates don't drag as the hand lever is released, which would cause slipping. If the plates drag, it will be necessary to remove the shims and file the "coast" side of the fingers slightly.

IMPROVED PART:

After Engine No. S2E-10304, an improved clutch housing has been incorporated to eliminate the problem. The housing fingers are treated with a solid lubricant to resist wear. The new housing can be identified by its dark color, as compared to the white color of the early housing.

	OLD	PARTS	NEW	PARTS	INTER- CHANGE	EFFECTIVE	
DESCRIPTION	ON OLD P/N REMARKS		NEW P/N REMARKS		OLDNEW		
Clutch Housing	13095-030	White Color	13095-032	Dark Color	—×→	S2E-10304	
Clutch Housing Shims	-	-	92037-079 92037-080	ELECTRIC PROPERTY.	-	Field Serv- ONLY	

O = interchangeable $X = not interchangeable \Box = not available$

WARRANTY INFORMATION:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization. ■

Date: 2-29-72 N

Title: SM-2 SHOP MANUAL ERRORS

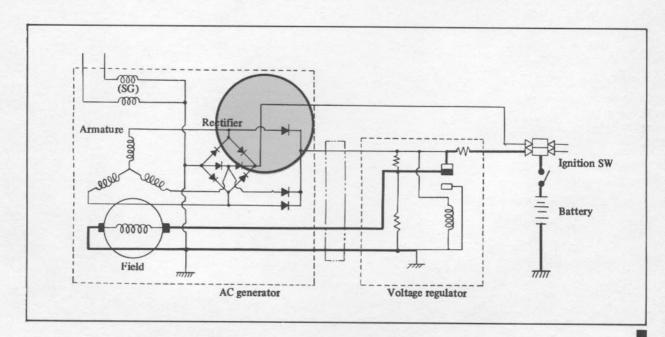
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obsolete

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 on the H1B. Use the new H Series Shop Manual for the H1B.

- 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./in.2 at 200 rpm. Compression pressure for the S2 should be 156 lb./in.2 at 200 rpm.
- C. Page 20, Paragraph e. The connecting rod small end play service limit should be 0.0039 in. (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 the corrections for pages 44 and 45 of the new H Series Shop Manual for the H1.
- G. Page 97. Diagram #407 should be corrected to match the diagram below:



Date: 7-20-72 N

Title: NEW S2 OIL PUMP

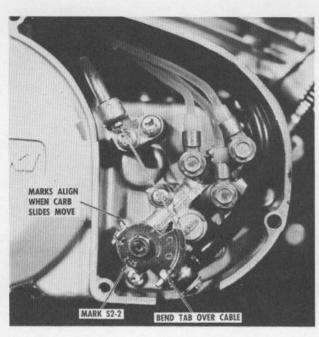
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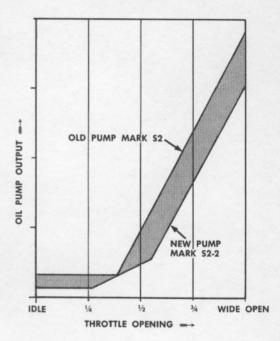
PROBLEM:

In some areas, S2 owners have complained of excessive exhaust smoke, spark plug fouling, and oil-wetting of the muffler tips.

CORRECTION:

A new oil pump has been developed for the S2 350cc. The oil flow rate has been changed for reduced output, as shown in the accompanying graph. The shaded area shows the reduction in oil flow.





PARTS INFORMATION:

	OLD I	PARTS	NEW F	PARTS	INTER- CHANGE	EFFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLD-NEW	I.D.
Oil Pump	16082-030	I.D. Mark S2	16082-041	I.D. Mark S2-2	X	S2E-16293

O = interchangeable X = not interchangeable $\square = not available$

WARRANTY INFORMATION:

To satisfy complaints from owners of early S2 motorcycles, warranty is extended to cover installation of the S2-2 oil pump on any S2 up to Engine No. S2E-16293. Even if the motorcycle warranty has expired, this pump exchange will be accepted. Send the old pump in with the warranty request. Use job code X024 (0.3 hr.). This is a factory directed modification, CLAIM TYPE 3 on the Warranty Request Form.

NOTE: Dealers subscribing to the Small Claims Option Program are required to perform this modification and submit a Warranty Request Form for each unit so modified. The Small Claims Option Program applies to claim types 1 and 2 only.

NOTE: For further information on oil pumps, see service bulletin GEN-9. ■

Date: 11-15-71 N

BULLETIN SER 73 S-1

Title: S2 CRACKED CYLINDER HEADS

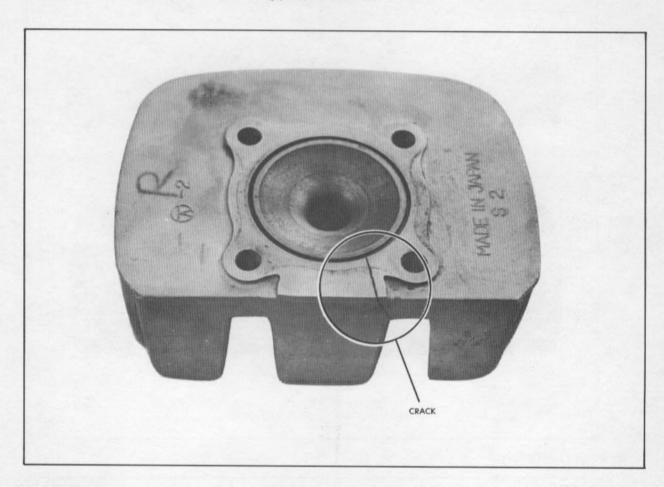
SERIES

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obsolete

PROBLEM:

On some early S2 machines, there is a slight possibility of the cylinder heads cracking as shown below. Our experience indicates that the fault may occur under conditions of hard usage, such as extended full throttle operation for long periods of time.



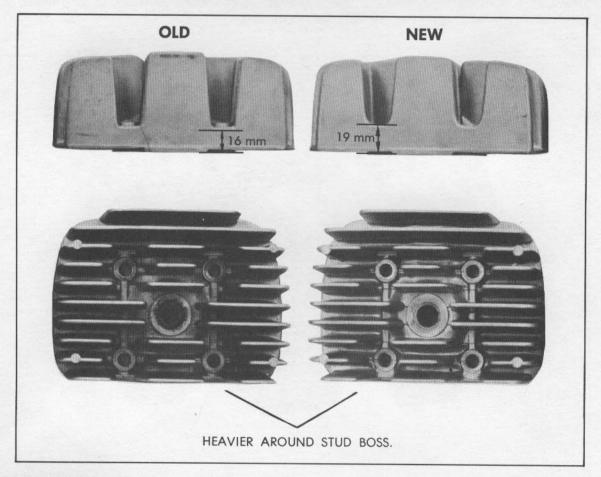
SYMPTOMS:

With a cracked cylinder head, there is a slight power loss in the high RPM range in 4th and 5th gear. On some units the engine may detonate because fuel/air mixtures are upset from leakage. Generally, a cracked head will not be visually noticeable unless the head is removed from the engine.

REMEDY:

All replacement cylinder heads in parts stock are thicker to prevent this problem; the part number is unchanged. The differences are illustrated below for identification purposes. A cracked head should be replaced immediately. Although all three heads need not be changed, they should be inspected for cracks and retorqued to 18 lb.-ft.

The new thicker cylinder heads have been installed in production from engine number S2E-07595.



PARTS INFORMATION:

	OLD	PARTS	NEW	PARTS	INTERCHANGE	FEFECTIVE
DESCRIPTION	OLD P/N	REMARKS	NEW P/N	REMARKS	OLDNEW	I.D.
S2 Cyl. Head	11001-053	See Illus.	Same	See Illus	→ 0 →	S2E-07595

O = interchangeable $X = not interchangeable \Box = not available$

WARRANTY:

This is a factory production change for routine product improvement. This bulletin is for notification of modification only, not for warranty authorization.

IGNITION SYSTEM

2/400-1

DATE: 10-10-75N

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TEMPORARY BULLETIN

EXPIRES WHEN DIRECTED BY KMC

NOTE: UNTIL YOU RECEIVE THE 1976 SERVICE BINDER, TEMPORARILY FILE THIS BULLETIN UNDER THE 'S' TAB IN THE CURRENT SER-VICE BINDER.

SERVICE INFORMATION

BACKGROUND:

THE KH400-A3 IGNITION SYSTEM CONSISTS OF THREE SIGNAL GENERATING COILS, TWO CAPACITOR CHARGING COILS, A CDI UNIT, AND THREE IGNI-TION COILS. THE COMPONENTS CAN BE TESTED BY USING EITHER OF THE TWO METHODS OUTLINED BELOW.

TESTING:

METHOD 1: THE KAWASAKI CD IGNITION TESTER (P/N 56019-201) IS THE MOST RELIABLE MEANS OF CHECKING ALL COMPONENTS OF THE IGNI-TION SYSTEM. THE TEST SEQUENCE OUTLINED BELOW TRACES THE IGNI-TION SIGNAL FROM THE SPARK PLUGS BACK TO ITS SOURCE AT THE MAGNETO. NEGATIVE TEST RESULTS AT ANY POINT IN THE SEQUENCE OF TESTS INDICATE A PROBLEM IN THE SYSTEM. CONTINUED TRACING OF THE SYS-TEM UNTIL THE RESULTS ARE POSITIVE WILL ISOLATE THE DEFECTIVE COMPONENT. USE THE INSTRUCTIONS PROVIDED WITH THE TESTER TO FAMILIARIZE YOURSELF WITH ITS OPERATION, AND PERFORM THE FOL-LOWING TESTS. REFER TO THE TABLE FOR CONNECTIONS AND STANDARD TEST VALUES. TEST #1 - IGNITION COIL OUTPUTS & SPARK PLUG CHECK

TEST #2 - CDI UNIT OUTPUT TO IGNITION COIL

TEST #3 - MAGNETO (CAPACITOR) CHARGING COIL OUTPUT TO CDI UNIT

TEST #4 - SIGNAL GENERATING COILS

		CONNE	TECTED			
TEST NO.	CYL.	CONNECT YELLOW TEST LEAD TO:	LOCATION	TESTER ACCESSORY REQUIRED	RANGE	DIAL
1	R C L	SPARK PLUG LEAD SPARK PLUG LEAD SPARK PLUG LEAD	AS CLOSE TO SPARK PLUG AS POSSIBLE	MM-1 CLIP	HIGH	80
2	R C L	GREEN WIRE BLUE WIRE ORANGE WIRE	TWO-PIN CONNECTORS FROM CDI UNIT TO IGNITION COILS	LOAD COIL TEST JUMPER LEADS	HIGH	65
3		RED WIRE WHITE WIRE	SIX-PIN CONNECTOR FROM MAGNETO TO CDI UNIT	TEST JUMPER LEADS	HIGH	60
	R	GREEN/WHITE	SIX-PIN CONNECTOR	TEST JUMPER	LOW	60
4	C	BLUE/WHITE RED/WHITE	FROM MAGNETO TO	LEADS		

METHOD 2: ALTHOUGH THIS METHOD IS NOT AS THOROUGH, THE CONDITION OF SOME OF THE COMPONENTS CAN BE DETERMINED USING AN OHMMETER (WHEN KAWASAKI CD IGNITION TESTER IS NOT AVAILABLE). COILS CAN BE CHECKED FOR BROKEN OR BADLY SHORTED WINDINGS, BUT AN OHMMETER CANNOT DETECT LAYER SHORTS OR SHORTS RESULTING FROM INSULATION BREAKDOWN UNDER HIGH VOLTAGE.

- TEST #1 IGNITION COILS:

 RESISTANCE BETWEEN THE GREEN, BLUE, OR

 ORANGE WIRES AND THE CORE (BLACK WIRE) IS

 0.7 OHMS.
- TEST #2 CAPACITOR CHARGING COILS:

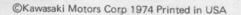
 RESISTANCE BETWEEN THE RED AND BLACK WIRES
 IS 210-240 OHMS.

 RESISTANCE BETWEEN THE WHITE AND BLACK WIRES
 IS 180-210 OHMS.
- TEST #3 SIGNAL GENERATING COILS
 RESISTANCE BETWEEN THE GREEN/WHITE, BLUE/WHITE,
 OR RED/WHITE WIRES AND GROUND IS 60-75 OHMS.
 THE CLEARANCE BETWEEN THE COIL CORES AND THE
 FLYWHEEL IS 0.4-0.5MM

WARRANTY INFORMATION:

THIS BULLETIN IS SERVICE INFORMATION ONLY, NOT WARRANTY AUTHORIZATION.





REFER TO BULLETIN SER '74 H-27

PROBLEM

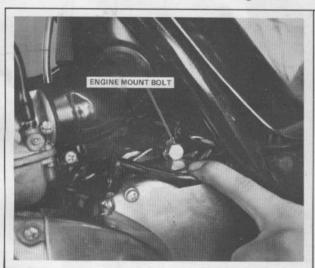
On the early S3 motorcycles engine misfiring and fouling spark plugs may become a problem when the electrical system is under a heavy load. For example, with the headlight on the turn signals may produce misfiring when they flash.

CAUSE

This problem is directly related to the new rubber mounting system of the engine isolating it from the frame. The engine is grounded only indirectly through the shift linkage, drive chain, and control cables. These components are all poor conductors and with exposure to water and dirt their ability to ground the engine becomes even worse. This decreases the voltage to the ignition system resulting in engine misfiring. Operating the lights, turn signals or horn further aggravates the problem.

SOLUTION

This problem has been cured in production after frame number S3F-005187 by the addition of a ground wire between the frame and the engine chain cover. A heavy gauge lead is used to assure the least possible resistance between the engine and frame.





INSTALLATION

For proper ignition performance under all conditions this ground wire (P/N 26011-084) must be installed on all S3 motorcycles before frame number S3F-005187.

- STEP 1 Remove the rear engine mount bolt shown in the first photo. The engine chain cover does NOT have to be removed to do this.
- STEP 2 Push the LH engine bracket upwards exposing the mounting tab on the frame. Sand or scrape the paint from the outside surface of the tab. Push the engine bracket back into place.
- STEP 3 Remove the chain cover screw shown in the second photo. Put the screw through one end of the ground wire and reinstall the screw. Do not tighten. Put the engine mounting bolt through the other end of the ground wire while reinstalling it.
- STEP 4 Tighten the engine mounting bolt and the chain cover screw.

Please see reverse side for additional information.

PARTS INFORMATION

DESCRIPTION	PART NUMBER	EFFECTIVE I.D.	REMARKS
Ground Wire	26011-084	S3F-005187	Attaches from rear frame mount to chain cover screw.

WARRANTY INFORMATION

Install the ground wire on all S3 motorcycles before frame number S3F-005187.

