# SHOP MANUAL



**H** Series

#### **Decimal Equivalents**

INCH			MM INCH	INCH			MM INCH				
<u>1</u> 64				.015625		33 64				.515625	
	<u>1</u> 32			.03125	1mm=		17 32			.53125	
<u>3</u> 64				.046875	.03937 inch	3 <u>5</u> 64				.546875	14mm=
		1/16		.0625				9 16		.5625	.55118 inch
<u>5</u> 64				.078125	2mm=	<u>37</u> 64				.578125	15mm=
	3/32			.09375	.07874 inch		<u>19</u> 32			.59375	.59055 inch
<u>7</u> 64				.109375	3mm=	39 64				.609375	
			1 8	.125	.11811 inch				<u>5</u> 8	.625	16mm=
<u>9</u> 64				.140625		4 <u>1</u>				.640625	.62992 inch
	<u>5</u> 32			.15625	4mm=	L	<u>21</u> 32			.65625	17mm=
11 64				.171875	.15748 inch	43 64				.671875	.66929 inch
-40		3 16		.1875	5mm=			11 16		.6875	
13 64				.203125	.19685 inch	4 <u>5</u> 64				.703125	18mm=
15	7/32			.21875			23 32			.71875	.70866 inch
1 <u>5</u> 64				.234375	6mm=	47 64				.734375	19mm=
17			1 4	.25	.23622 inch				3 4	.75	.74803 inch
17 64				.265625	7mm=	<u>49</u> 64				.765625	
10	<u>9</u> 32			.28125	.27559 inch		2 <u>5</u> 32			.78125	20mm=
<u>19</u> 64				.296875		<u>51</u> 64		40		.796875	.78740 inch
24		<u>5</u> 16		.3125	8mm=			13 16		.8125	21mm=
. <u>21</u> .64				.328125	.31496 inch	<u>53</u> 64	07			.828125	.82677 inch
	<u>11</u> 32			.34375	9mm=		<u>27</u> 32			.84375	-
<u>23</u> 64			2	.359375	.35433 inch	<u>55</u> 64				.859375	22mm=
25			<u>3</u> 8	.375					7 8	.875	.86614 inch
<u>25</u> 64	40			.390625	10mm=	<u>57</u> 64				.890625	23mm=
	13 32			.40625	,39370 inch		<u>29</u> 32			.90625	.90551 inch
<u>27</u> 64				.421875	11mm=	<u>59</u> 64		1-		.921875	_
		7 16		.4375	.43307 inch			1 <u>5</u> 16		.9375	24mm=
<u>29</u> 64	4.5			.453125		61 64	0.4			.953125	.94488 inch
24	1 <u>5</u> 32			.46875	12mm=		3 <u>1</u> 32			.96875	25mm=
31 64				.484375	.47244 inch 13mm=	63 64				.984375	.98425 inch
			1 2	.5	.51181 inch				1	1.	

#### **Unit Conversion Table**

•					
cc	x	.0610	=	cu in	
cc	X	.02816	=	oz (imp)	
cc	X	.03381	=	oz (US)	
cu in	X	16.39	=	cc	
ft-lbs	X	12	=	in lbs	
ft-lbs	X	.1383	=	kg-m	
gal (imp)	X	4.546	=	litres	
gal (imp)	X	1.201	=	gal (US)	
gal (US)	X	3.7853	=	liters	
gal (US)	X	.8326	=	gal (Imp)	
grams	X	.03527	=	oz	
in	x	25.40	=	mm	
in lbs	x	.0833	=	ft-lbs	
in lbs	X	.0115	=	kg-m	
kg	x	2.2046	=	lbs	
kg	X	35.274	=	OZ	
kg-m	X	7.233	=	ft-lbs	
kg-m	x	86.796	=	in-lbs	
kg/cm²	x	14.22	=	lbs/in <sup>2</sup>	
km	x	.6214	=	mile	
lb	x	.4536	=	kg	
lb/in²	x	.0703	=	kg/cm <sup>2</sup>	
litre	x	28.16	=	oz (imp)	
litre	x	33.81	=	oz (US)	
litre	x	.8799	=	qt (imp)	
litre	x	1.0567	=	qt (US)	
metre	x	3.281	=	ft	
mile	x	1.6093	=	km	
mm	x	.03937	=	in	
oz (imp)	x	35.51	=	cc	
oz (US)	x	29.57	=	СС	
oz (weight)	x	28.35	=	grams	
gt (imp)	х	1.1365	=	litre	
qt (imp)	x	1.201	=	qt (US)	
qt (US)	x	.9463	=	litre	
qt (US)	x	.8326	=	qt (imp)	
kg/cm <sup>2</sup>	x	98.07	=		
lbs/in²	x	6.896	=	kPa	
kPa	x	.1450	=	lbs/in <sup>2</sup>	
°C → °F: 9			Λ.		
$^{\circ}\text{C} \rightarrow ^{\circ}\text{F}: \frac{9 ( C + 40)}{5} - 40 = ^{\circ}\text{F}$					
° - ° - 5	$^{\circ}F \rightarrow ^{\circ}C: \frac{5 (^{\circ}F + 40)}{} - 40 = ^{\circ}C$				
$^{\circ}\text{F} \rightarrow {}^{\circ}\text{C}: \frac{3}{9} - 40 = {}^{\circ}\text{C}$					

#### List of Abbreviations

ABDC ATDC BBDC BDC BTDC cc cu in ft ft-lbs gal hp in in-lb kg kg/cm² kg-m	after bottom dead center after top dead center before bottom dead center bottom dead center before top dead center cubic centimeters cubic inches foot, feet foot-pounds gallon, gallons horsepower inch, inches inch-pounds kilogram, kilograms kilograms per square centimeter kilogram meters
km	kilometer
kph	kilometers per hour
lb, lbs	pound, pounds
lbs/in <sup>2</sup>	pounds per square inch
ltr	liter, litre
m	meter, meters
mi	mile, miles
mm	milimeters
mph	miles per hour
oz	ounce, ounces
psi	pounds per square inch
qt	quart, quarts
rpm	revolutions per minute
sec	second, seconds
SS	standing start
TDC	top dead center
"	inch, inches
r/min	revolutions per minute
Q	liter, litre
kPa	kilo-Pascals

# SHOP MANUAL

H1 (1969~1975) KH500 (1976~1977) H2 (1972~1975)



## **H** Series

#### **Foreword**

This shop manual covers maintenance and repair of all models in the H Series. Before starting to service a motorcycle, careful reading of the applicable section is recommended to eliminate unnecessary work.

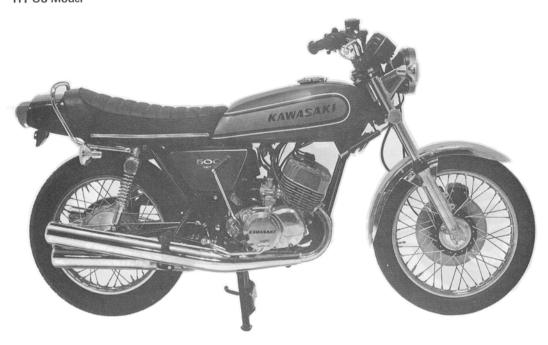
Wiring diagrams, and an alphabetical index can be found at the rear of the manual. (KH500 is not a new model, but model name was changed from H1 to KH500 in the 1976 model.)



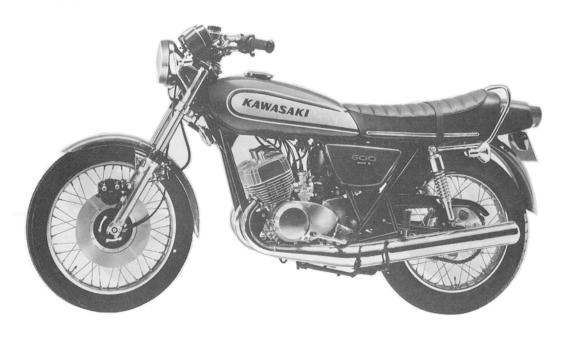
### **Table of Contents**

I.	Sp	ecifications 1	6. Front Fork, Steering Stem 83
	•	Performance Curves 3	7. Rear Shock Absorbers
II.	En	gine: General Maintenance	8. Hydraulic Steering Damper 93
•		Engine Construction 5	9. Drive Chain
		Minor Disassembly 5	10. Fuel, Oil Tanks
		Engine Removal 6	11. Stands, Footrests
		Engine Mounting 9	13. Mufflers, Exhaust Pipes 99
	5.	Engine Adjustments 9	
		Idling, Cable 9	V-a. HI Electrical System  1. AC Generator, Rectifier 101
		Starter Lever	2. Voltage Regulator
		Oil Pump	3. Ignition System 105
		Clutch	
		Shift pedal linkage 12	V-b. H2 Electrical System
Ш,	Er	ngine: Detailed Maintenance	<ol> <li>Rectifier and Voltage Regulator 113</li> <li>Ignition System 115</li> </ol>
		Air Cleaner	3. Test Procedures
	2.	Cylinder, Cylinder Head 14	
		Piston, Piston Pin	VI. Troubleshooting
		Piston Rings 20	Periodic Maintenance Guide 127
		Engine, Left Side	Torque Table 128
		Right Cover	Wiring Diagrams 129
		Clutch, Clutch Release 27	Supplement
		Primary Gear	1. Engine: Detailed Maintenance 137
	9.	External Gear Shift Mechanism 32	Ignition Timing Adjustment 137
	10.	Crankcase	Lubrication System 138
	11.	Crankshaft	2. Frame
	12.	Transmission 39	Front Fork 141
	13.	Kick Starter 41	3. Electrical System 146
	14.	Lubrication System 43	Ignition Circuit 146
	15.	Carburetors 46	Regurator/Rectifier 147
VΙ	. <b>F</b> ı	rame	Dinamo Test 149
		Frame	Distributer Test 150
		Swing Arm 54	CDI unit Test 151
		Wheels	Regurator Test 152
		Hubs, Brakes, Sprockets 61	Wiring Diagrams
		Disc Brake 69	Index
		Handlebars	
	٥,	Hallulevals	

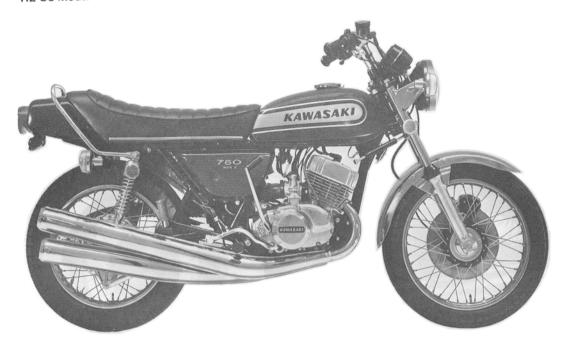
H1 US Model



H1 European Model



H2 US Model



H2 European Model



### ${f I}$ . Specifications

	KH500	H2-C
Overall length Overall width Overall height Wheelbase Road clearance Dry weight Fuel tank capacity Oil tank capacity	82.1 in. (2,085 mm) *2,125 mm 32.9 in. (835 mm) *825 mm 44.9 in. (1,140 mm) *1,100 mm 55.5 in. (1,410 mm) 5.7 in. (145 mm) 423 lbs. (192 kg) *194 kg 4.2 U.S. gal. (16 liters) 2.5 U.S. qt. (2.3 liters)	83.1 in. (2,110 mm) *2,175 mm 32.7 in. (831 mm) 46.5 in. (1,180 mm) 57.0 in. (1,448 mm) 5.5 in. (139 mm) 452 lbs. (205 kg) *208 kg 4.5 U.S. gal. (17.0 liters) 2.1 U.S. qt. (2.0 liters)
Performance Climbing ability Braking distance Minimum turning radius SS 1/4 mile	27° 41 ft.@31 mph (12.5 m@50 kph) 94.5 in. (2,400 mm) 14.1 sec.	40° 39.4 ft. @31 mph (12 m@50 kph) 94.5 in. (2,400 mm) 12.0 sec.
Engine Type Bore and stroke Displacement Compression ratio Maximum horsepower Maximum torque Port timing Inlet — Open — Close Scavenge— Open — Close Exhaust — Open — Close Carburetor type Lubrication system Engine oil Starting system Ignition system Firing order Ignition timing Spark plugs	2-stroke, 3 cylinder, piston valve 2.36 x 2.31 in. (60 x 58.8 mm) 30.4 cu.in. (498.0 cc) 6.8:1 52 hp/7,000 r.p.m. 39.1 ft-lb (5.4 kg-m)/6,500 rpm  76° BTDC 76° ATDC 59.5° BBDC 89° BBDC 89° BBDC Mikuni VM28SC Injectolube oil injection 2-stroke engine oil Kick starter Electronic CDI Left, right, center 23° BTDC @4,000 rpm NGK B-9HS-10	2-stroke, 3 cylinder, piston valve 2.80 x 2.48 in. (71 x 63 mm) 45.6 cu.in. (748.0 cc) 7.0:1 71 hp/6,800 r.p.m. 57.1 ft-lb (7.9 kg-m)/6,500 rpm  75° BTDC 75° ATDC 58° BBDC 89° ABDC 89° ABDC Mikuni VM30SC Injectolube oil injection 2-stroke engine oil Kick starter Electronic CDI Left, right, center 23° BTDC @4,000 rpm NGK B-9HS-10
Transmission Type Clutch Gear ratio 1st 2nd 3rd 4th 5th	5-speed, constant mesh, return shift Wet, multi-disc 2.20 (33/15) 1.40 (28/20) 1.09 (25/23) 0.92 (23/25) 0.81 (21/26)	5-speed, constant mech, return shift Wet, multi-disc 2.17 (26/12) 1.47 (28/19) 1.11 (20/18) 0.92 (23/25) 0.81 (17/21)

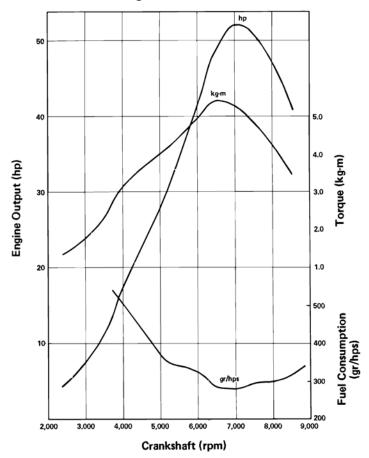
	KH500	H2-C
Primary reduction ratio	2.41 (65/27)	1.88 (60/32)
Final reduction ratio	3.00 (45/15)	3.13 (47/15)
Overall drive ratio	*2.81 (45/16) ① 3.00 (45/15) 5.83 (5th) *5.47 (5th) ① 5.83 (5th)	4.76 (5 th)
Transmission oil	SAE 10W30 or 10W40	SAE 10W30 or 10W40
Transmission oil capacity	1.3 U.S. qt. (1.2 liters)	1.5 U.S. qt. (1.4 liters)
Electrical Equipment		
Generator	Mitsubishi F005T10271 Minimum output 5.5A-12V @1,800 rpm	Mitsubishi F-6061DL Minimum output 4.0A-12V @1,800 rpm
Regulator	Mitsubishi X009T30471	Mitsubishi X009T30171
Ignition coil	Diamond TU-29M-125	Mitsubishi F006T40871
Battery	Yuasa 12N9-3B 12V-9AH	Furukawa 12N5.5-4A 12V-5.5AH
Headlamp type	Sealed beam	Sealed beam
Headlamp type	*Semi-sealed beam	*Semi-sealed beam
Headlamp	12V 50/35W	12V 35/25W
Неашапр	*12V 45/40W	*12V 35/35W©12V 36/36W
Tail/Brake lamp	12V 27/8W *12V 21/5W	12V 23/8W *12V 21/5W
Speedometer lamp	12V 3W	12V 3W
Tachometer lamp	12V 3W	12V 3W
Neutral indicator lamp	12V 3W	12V 3W
_	12V 3W	12V 3W
Brake light failure indicator	124 344	
lamp	12V 1.5W	12V 1.5W
High beam indicator lamp	12V 1.5W 12V 23W *12V 21W	12V 23W *12V 21W
Turn signal lamps (four) Turn signal indicator lamp	12V 23W 12V 21W	12V 3W
Turn signar indicator famp		
Frame	1	Tubulan dauble aradle
Type	Tubular, double cradle	Tubular, double cradle
Steering angle	39°	39°
Caster	63°	63.5°
Trail	4.3 in. (108 mm)	4.1 in. (104 mm)
Tires: Front	3.25H-19 4PR	3.25H-19 4PR
Rear	4.00H-18 4PR	4.00H-18 4PR
Suspension		
Front	Telescopic fork	Telescopic fork
Rear	Swing arm	Swing arm
Suspecsion stroke		
Front	5.5 in. (140 mm)	5.5 in. (140 mm)
Rear	2.8 in. (70 mm)	3.1 in. (80 mm)
Front fork oil capacity,	5.75 U.S. oz. (170 cc)	5,92 U.S. oz. (175 cc)
(for each fork)		
Front fork oil type	SAE 10W	SAE 10W
Brakes		
Type Front	Disc brake	Disc brake
Rear	Internal expansion, leading-trailing	Internal expansion, leading-trailing
Rear brake drum inside dia.	7.1 x 1.4 in. (180 x 35 mm)	7.9 x 1.4 in. (200 x 35 mm)
Effective disc diameter	9.7 in. (245 mm)	9.7 in. (245 mm)
Directive disc diameter		out notice and may not apply to every count

<sup>\* :</sup> European Model

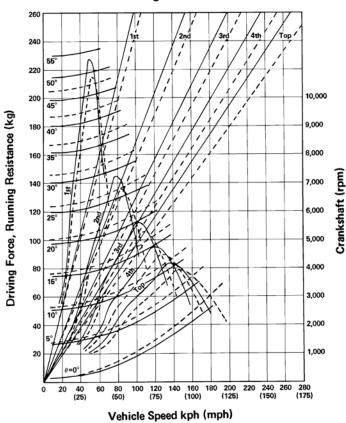
(F): French Model

(I): Italy Model

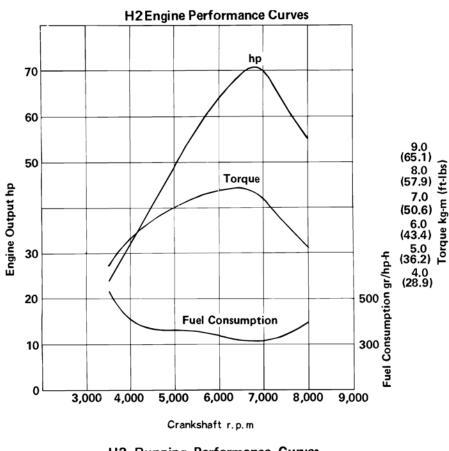
#### **KH500 Engine Performance Curves**

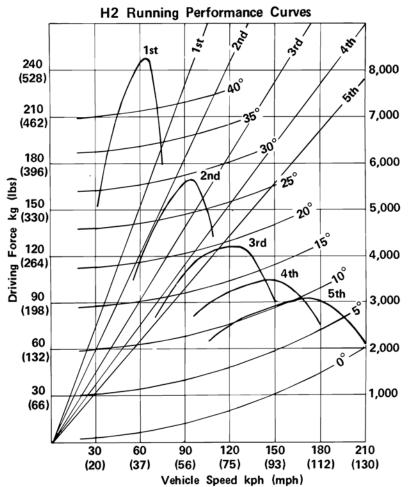


#### **KH500 Running Performance Curves**



--- US Model ---- European Model





Crankshaft rpm