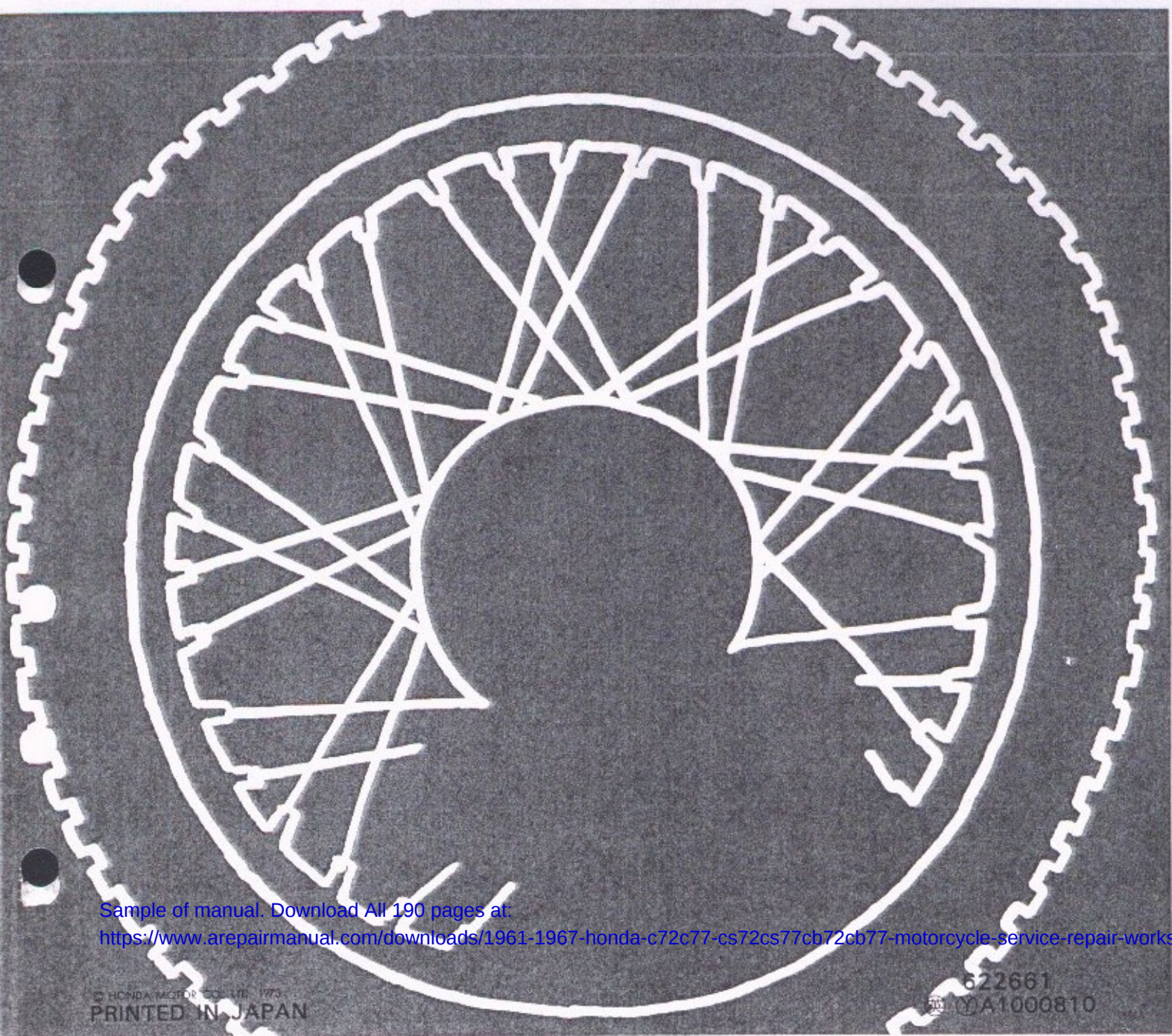


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SHOP MANUAL

HONDA
250 • 300

C72 • C77
CS72 • CS77
CB72 • CB77



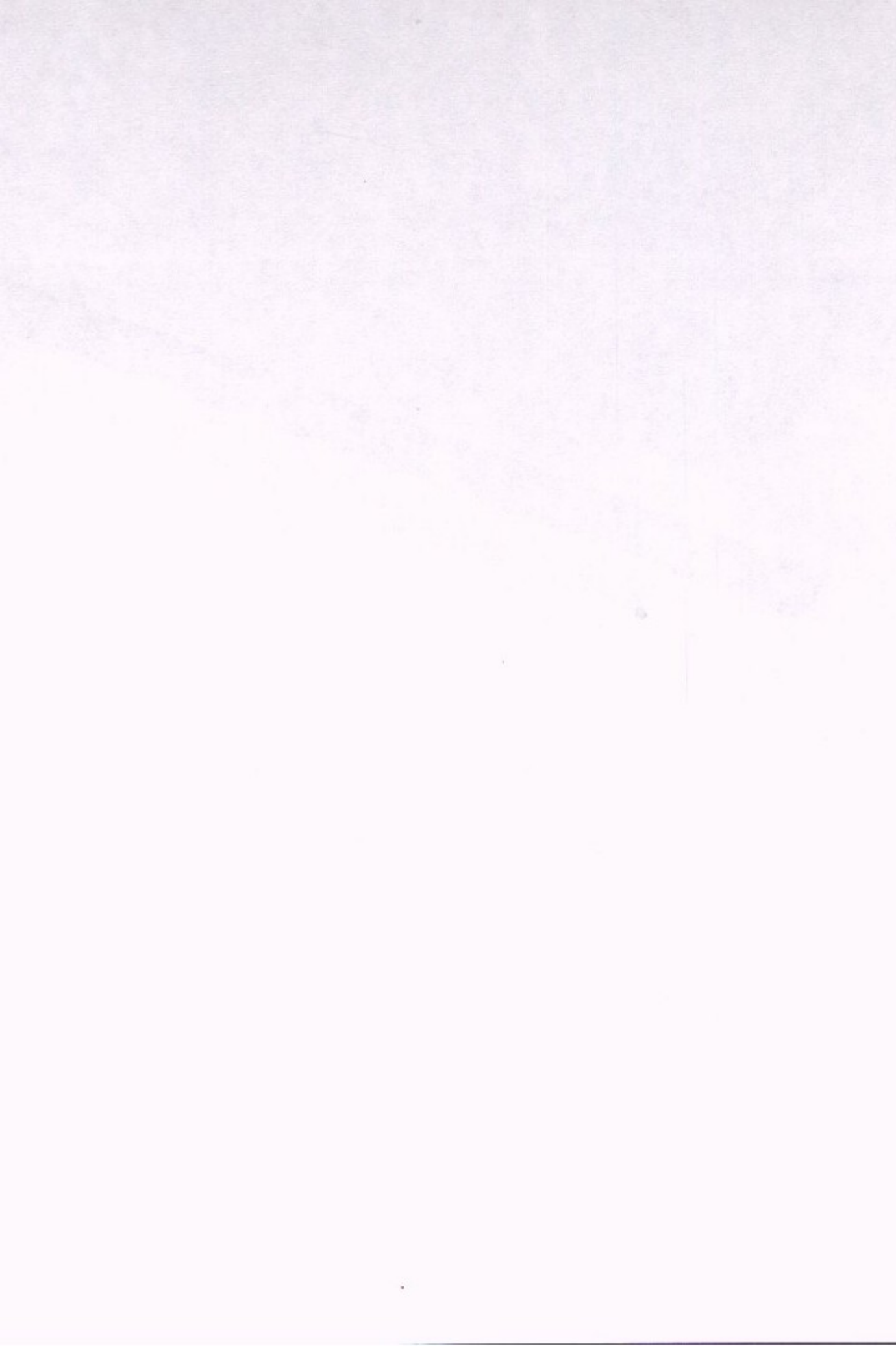
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MODEL C72/C77 CS72/CS77 CB72/CB77
SHOP MANUAL

HONDA MOTOR CO., LTD.



PREFACE

This Shop Manual contains general data and information, and procedures relative to motorcycle maintenance, over-haul and repairs for the models covered by Honda 250 and Honda 300 equivalent to Model C72-C77, CB72-CB77, CS72-CS77.

Therefore, information in this manual will be suitable instruction for servicemen and mechanics of Honda to assist them to efficiently service and repair these machines.

Now, in this case, mechanical arrangement means to repair a motorcycle when it is out of order and restore it to the ordinary state as well as to prevent it from any trouble by periodically inspecting the motorcycle.

The contents of this book are divided into five chapters, including main standards, disassembly-assembly, construction, wiring diagram and trouble shooting.

Each chapter is separated into sections. Disassembly-assembly (the 2nd chapter) is divided into 2 sections-Engine and Frame. The section of Engine is described both model C72-77, CB72-77, but that of Frame is done only model CB72-77.

In regard to the Frame of model C72-77, please refer to the previously published Shop Manual for Honda 125-150.

An effort has been made to produce a manual avoiding fundamental principle and theory by explaining the actual mechanism.

Special emphasis has been placed on illustrations and charts to make it easy for the service man to understand without reading every line. We hope this will be of some use to you.

This manual will be revised without notice.

January, 1960.

HONDA MOTOR CO., LTD.

TECHNICAL SECTION

EXPORT DEPARTMENT

No. 5-5, Yaesu-cho, Chuo-ku,

Tokyo, Japan

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MAINTENANCE STANDARDS,C72-77

For maintenance operation for HONDA 250-300, Maintenance Standards, specification and dimension are listed hereafter for reference.

EXPLANATION:

Maintenance Items	Items to be inspected, service-wise.
Standard Value	This indicates the manufacturer's standard size or the standard size after newly assembling or adjusting, and shows the size-limit of completed part in the permissible limit of adjustment.
Repairing Limit	Unusable wear limit of parts requiring correction or replacement, function-wise.
Remarks	Unmarked numbers are mm unit and inch unit shown underneath, and others according to the unit indicated.

UNIT IN CHART:

Unmarked numbers are mm unit and inch unit shown underneath, and others according to the unit indicated.

MAINTENANCE STANDARDS (Model C72)

This maintenance standards is listed only about the data of Model C72. In this list, dimensions without units indicate "mm" (upper step) and "inch" (down step), and others according to the units indicated.

1. GENERAL PERFORMANCE

Item		Standard	Repairing Limit	Remarks
Compression pressure		8.5kg/cm ² 120.87 lb/in ²	7.0 99.54 lb/in ²	Check with kick
Fuel consumption		42~45km/ℓ 26.04~27.90 mile/ℓ	29 17.98	35km/h(21.7mile/h)
Lubricant consumption		120cc/1000km or less 120cc/620mile	200/1000 more 200/620mile	
Max. speed		130km/h 80.60mile/h	90 less 55.80mile/h	The posture is leaning forward one thirds of the body

2. ENGINE

A. Cylinder, Cylinder Head

Item		Standard	Repairing Limit	Remarks
Cylinder	Inner dia.	53.99~54.00 2.1255~2.1259	54.1 more 2.129	
	Max. out of round	within 0.001	0.05 more 0.00019	
	Taper	within 0.001	0.05 more 0.00019	
Over size of cylinder	Over size	0.25 0.00984		3 category of 0.25 (0.00984) over size
Cylinder head valve sheet	Width	1.0~1.5 0.0393~0.0590	2.0 more 0.0787	
	Angle	45°		
Compression ratio		8.3 0.326		The capacity of the combustion chamber, 16.94cc
Cylinder head gasket surface	Flatness	within 0.03 0.0011	0.06 more 0.0023	
Cylinder head gasket	Thickness	1.0~1.1 0.039~0.043		In case of binding
Cylinder strut nut	Tightness	2.1 m-kp 15.189 ft-lb		

B. Crank Shaft (Piston, Connecting Rod)

Item		Standard	Repairing Limit	Remarks
Piston	Top diameter	53.55~53.60 2.108~2.110	53.5 less 2.106	The progressive direction of the lower parts of skirt
	Max. dia.	$54 + 0$ $- 0.02 = D$	53.9 less 2.122	
	Out of round	$D - 0.14 -$ $0.16 = d$ $D - 0.005 -$ $0.006 = d$		
Piston & cylinder	Min. clearance	0	0.1 more 0.0039	
Piston pin	Dia.	15.0~15.0006 0.59~0.5907	15.05 more 0.5925	
Piston over size	Over size	0.25 0.0098		3 category of 0.25 (0.0098) over size
	Taper	$D - 0.08d - 0.08$ $D - 0.0031d - 0.003$		
Top-2nd ring	Thickness	2.4~2.6 0.094~0.102	2.3 less 0.0905	
	Width	1.780~1.795 0.0700~0.0706	1.7 less 0.0669	
	Tension	0.75~1.05kg(top) 0.70~1.00kg(2nd) 1.653~2.315 lb 1.543~2.205 lb	0.6kg less 1.3230 less	Tangential tension In case of binding
	End gap	0.15~0.35 0.0059~0.0137	0.8 more 0.0314	
	Clearance	0.01~0.04 0.0003~0.0015	0.1 more 0.0039	
Top-2nd ring & ring groove	Thickness	2.4~2.6 0.0944~0.1023	2.0 less 0.0787	
	Width	2.780~2.795 0.1094~0.1100	2.7 less 0.10629	
	Tension	0.7~0.9kg 1.5435~1.9845 lb	0.5 less 1.1025 lb	Tangential tension
	End gap	0.1~0.3 0.0039~0.0118	0.8 more 0.0314	In case of binding
	Clearance	0.01~0.04 0.0003~0.0015	0.1 more 0.0039	
Oil ring	Over size	0.25 0.0098		3 category of 0.25(0.0098) over size
	Out. dia.	14.994~15.0 0.5903~0.5905	14.95 less 0.5885	
Piston pin	Total length	45.5~45.7 1.7913~1.7992		

Item		Standard	Repairing Limit	Remarks
Piston pin & piston	Clearance	0~0.012 0~0.0004	0.05 more 0.00196	In cold, push in softly by fingers
Connecting rod small end	In. dia.	15.016~15.043 0.5911~0.5922	15.08 more 0.5936	
Con. rod small end & piston pin	Clearance	0.016~0.049 0.0006~0.0019	0.08 more 0.0031	
Con. rod small end	Swing		3.0 more 0.118	Max. amplitude to axial direction of crank pin
Lower end of con. rod	Axial clearance	0.07~0.33 0.0027~0.012	0.5 more 0.0196	
	Diagonal clearance	0.006~0.016 0.0002~0.0006	0.05 more 0.00196	
Big end-small end of con. rod	Amount of parallel	within 0.02 0.00078	over 0.1 0.0039	At length of 100mm (3.93in)
	Distortion	within 0.02 0.00078	over 0.1 0.0039	At length of 100mm (3.93in)
Baranser weight crankpin	Out. dia.	24.99~25.00 0.9838~0.9842	24.95 or less 0.9822	
R. L. crank shaft	Dia. of shaft	30.82~30.86 1.213~1.214	30.6 or less 1.204	
Crank shaft bearing	Axial clearance	0.005 0.00019	over 0.1 0.0039	Center bearing
	Radial clearance	0.014~0.016 0.0005~0.0006	over 0.05 0.0019	
Crank shaft combination	Max. swing	0.03 less 0.0011	over 0.1 0.0039	In case of supporting center bearing, the swing of both ends
Cam chain	Overall length	723.0~723.8	over 728	
		28.46~28.49	28.66	

C. Cam-Timing and Valve Mechanism

Item		Standard	Repairing Limit	Remarks
Ex. In. valve guide	In. dia.	7.0~7.01 0.2755~0.2759	over 7.05 0.2775	
Ex. valve	Overall length	88.65~88.85 3.490~3.498	88.2 or less 3.472	
	Out. dia. of stem	6.97~6.98 0.2744~0.2748	6.95 or less 0.273	
	Thickness of head	1.0 0.03937	0.5 or less 0.01968	
	Overall length	89.18~89.38 3.511~3.518	88.7 or less 3.492	
In. valve	Out. dia. of stem	6.97~6.98 0.2744~0.2748	6.95 or less 0.273	

Item		Standard	Repairing Limit	Remarks
Ex. In. valve	Thickness of head	1.0 0.03936	0.5 or less 0.019	At 34.5mm(1.35) of binding length At 27.5mm(1.08) of max. lift
	Width	1.0~1.5 0.0393~0.059	over 20 0.787	
Ex. valve stem and guide	Clearance	0.02~0.04 0.0007~0.0015	over 0.08 0.0031	
In. valve stem and guide	Clearance	0.01~0.03 0.00039~0.0011	over 0.07 0.00275	
Valve spring outer	Free length	43.82 1.725	42.3 or less 1.665	
	Tension	11.6~12.4kg 24.2~25.8kg 25.57~27.3 lb 53.36~56.8 lb		
	Decline	within 1. 0.03937	1.5 more 0.059	
Valve spring inner	Free length	34.66 1.364	33.4 less 1.314	
	Tension	3.9~4.3kg 14.5~15.5kg 8.59~9.48 lb 31.97~34.17 lb		
	Decline	within 1. 0.0393	1.5 more 0.059	
Cam shaft	Shaft dia.	19.98~19.99 0.786~0.787	19.95 less 0.785	P. 6 cam Non-clearance
	Bend of shaft	within 0.01 0.0003	0.05 more 0.0019	
	Height of cam	26.98~27.02 1.062~1.063 (-) (+)	26.7 less 1.051	
	Clearance	0.003~0.03 0.00011~0.0011	0.08 more 0.0031	
Cam shaft and bear- ing of journal	Opening angle	before lower dead point 25°	± 5°	
Valve timing Ex. (at 1.1mm(0.043) of lift length)	Closing angle	after upper dead point 10°	± 5°	
Valve timing In. (at 1.1mm(0.043) of lift length)	Opening angle	before upper dead point 10°	± 5°	
	Closing angle	after lower dead point 25°	± 5°	
Cam sprocket	Bottom diameter	74.766 2.943	74.2 less 2.922	In case of having some trouble on slipper surface
Rocker arm	To fix steps on slipper face		0.3 more 0.0118	

Item		Standard	Repairing Limit	Remarks
Rocker arm crankpin	In. dia.	130~13.027 0.511~0.512	13.1 more 0.515	Cool state
	Out. dia.	12.966~12.984 0.510~0.511	12.9 less 0.5078	
	Clearance to rocker arm	0.16~0.61 29 0.006~0.024	0.1 more 0.0039	
	Ex. In. valve adjust	Tappet clearance 0.09~0.11 0.0035~0.0043	out of standard	
Cam chain tensioner spring	Free length	73 2.874	70 less 2.755	
	Tension	16.0~16.2kg 35.28~35.71 lb	10 less 22.05	
Cam chain tensioner roller	Out. dia.	59.2~59.8 2.33~2.35	58.5 less 2.303	

D. Upper Crank Case

Item		Standard	Repairing Limit	Remarks
Hole, shift drum	In. dia.	34.0~34.02 1.338~1.339	34.2 more 1.346	
	In. dia. of axle	12.0~12.01 0.472~0.473	12.2 more 0.4803	
Cam chain guide roller pin	Out. dia.	13.966~13.984 0.549~0.550	13.9 less 0.547	
	In. dia.	14.0~14.01 0.5511~0.5515	14.1 more 0.5551	
Chain guide roller				

E. Clutch · L. Crank Case Cover

Item		Standard	Repairing Limit	Remarks
Clutch center	In. dia.	25.0~25.021 21.0~21.084	24.9 20.9 less	
		0.984~0.985 0.826~0.830	0.980 0.822	
		within 0.1 0.0039	0.2 more 0.0078	
Primary drive sprocket	Bottom diameter	39.11~39.21 1.5397~1.5436	38.3 less 1.5078	
Clutch friction disc	Thickness	4.8~4.9 0.1889~0.1929	4.4 less 0.1732	
	Strain	within 0.2 0.0078	0.5 more 0.0196	

Item		Standard	Repairing Limit	Remarks
Clutch plate	Strain	within 0.2 0.0078	0.5 more 0.0196	At 25mm (0.98) of binding length At 23mm (0.90) of max. lift
	Width of hook	13.7 ~ 13.8 0.5393 ~ 0.5433	13.0 less 0.5118	
Teeth and outer of clutch pressure plate	Rotary play	within 0.2 0.0078	0.8 more 0.0314	
Clutch spring	Free length	33.4 1.3149	32.4 less 1.2755	
	Tension	15.3 ~ 16.7kg 19.8kg	15.0 less 123.075	
		33.736 ~ 36.823 lb 43.659lb		

F. Transmission

Item		Standard	Repairing Limit	Remarks
Mission case lubricating oil	Capacity	1.5ℓ 0.396 gal U.S.	out of standard	In crank and mission
Main shaft	Out dia.	24.959 ~ 24.98 0.9826 ~ 0.9834	24.9 less 0.980	
Main shaft and M2 gear	Clearance	0.07 ~ 0.074	0.1 more 0.0039	
Axial direction of main shaft	Clearance	0.1 ~ 0.75 0.0039 ~ 0.0295	1.2 more 0.0472	
Turning direction of M3 gear	Clearance	0.03 ~ 0.078 0.0011 ~ 0.0030	0.1 more 0.0039	
Teeth surface of gear relating to mission	Axis play	0.089 ~ 0.178	0.2 more 0.0078	
Top gear bush 18℄	In. dia.	18.0 ~ 18.018 0.708 ~ 0.709	18.1 more 0.712	
Top gear bush 20.5℄	In. dia.	20.5 ~ 20.52 0.8070 ~ 0.8078	20.6 more 0.811	
Top gear bush & main shaft	Clearance	0.04 ~ 0.082 0.0016 ~ 0.0032	0.1 more 0.0039	
Drive sprocket	Bottom dia.	71.5 ~ 71.51 65.649 ~ 65.776 2.814 ~ 2.815 2.584 ~ 2.589	70.5 less 64.7 less 2.77 2.54	Spline parts
	Rotary play	0.03 ~ 0.078	0.5 more 0.019	
Primary driven sprocket	Bottom dia.	136.06 ~ 136.16 5.356 ~ 5.360	135.3 less 5.326	
Main shaft & top gear bearing	Axis play	0.005	0.1 more 0.0039	

Item		Standard	Repairing Limit	Remarks
Counter shaft	Radius play	0.01~0.02	0.05 more	
	In. dia.	24.37~24.38 4	24.4 more 0.960	
	In. dia.	0.959~0.9598 17.084~17.134	17.2 more 0.677	
Bush	Out. dia.	0.672~0.674 17.094~17.112		
	In. dia.	0.672~0.673 14.413~14.431	14.45 more 0.5688	
		0.567~0.568		
Counter shaft & bush	Clearance	0.028~0.04 0.0011~0.0015	0.1 more 0.0039	
Counter shaft & C2 gear	Rotary play	0.01~0.098 0.00039~0.0038	0.5 more 0.0196	
Low gear bush	In. dia.	17.13~17.15 0.674~0.675	17.2 more 0.677	
Low gear bush & 14mm bush	Clearance	0.02~0.058 0.00078~0.0022	0.1 more 0.0039	
Kick starter spindle	Out. dia.	14.341~14.353 0.564~0.565	14.25 less 0.561	
Kick starter spindle & each bush	Clearance	0.06~0.09 0.0023~0.0035	0.15 more 0.0059	
Kick spindle pole	R-part		with step 0.3 more 0.0118	
Kick spindle pole spring	Free length	14 0.5511		
Primary chain	Loosing	5~10 0.1968~0.3937	2.0 less 0.787	

G. Magneto, Contact Point

Item		Standard	Repairing Limit	Remarks
Contact breaker arm spring	Tension	0.2~0.4 0.85~1.05kg 0.441~0.882 1.847~2.315		In case of 24.5mm (0.964) of binding length
Contact point	Gap	0.3~0.4 0.0118~0.0157	out of standard	In case of 25.9mm (1.019) of max. lift
Ignition timing	Crank angle	after upper dead point 5°		
Spark advancer ; beginning of advance angle	Rotary number	1100r.p.m.		
Spark advancer ; end of advance angle	Rotary number	3000r.p.m.	out of standard	

Item		Standard	Repairing Limit	Remarks
Spark advancer ; max. advance angle	Crank angle	40°	37° — 43°	By kick 1500 ~ 800r.p.m. At 3000r.p.m. Air-gap (in radius)
Magneto spark character	3 needle gap	8mm more 0.3149	7 less 0.2755	
Magneto charging character	Charge current	2.0A ~ 3.0A	2A less	
Dynamo starter & rotor	Gap	0.5 0.0196	0.8 more 0.0314	

H. Oil Pump • Oil Filter

Item		Standard	Repairing Limit	Remarks
Oil pump drive gear	Gearing eccentric	0.063 less	0.1 more 0.0039	Adjust by packing In case of binding
Oil pump drive gear & center crank gear	Back lash	0.01 less 0.0039	0.5 more 0.0196	
Oil pump packing	Thickness	0.4 0.0157		
Addendum and internal wall of oil pump gear	Clearance	0.025 ~ 0.05 0.00098 ~ 0.0019	0.1 more 0.0039	
Oil pump gear	Back lash	0.106 ~ 0.210 0.0041 ~ 0.0082	0.5 more 0.0196	
Side and side cover of oil pump gear	Clearance	0.089 ~ 0.04 0.00350 ~ 0.0330	0.15 more 0.0059	
Gear pin and gear	Clearance	0.05 ~ 0.13 0.0019 ~ 0.0051	0.1 more 0.0039	
Oil filter shaft and oil filter rotor	Clearance	0.012 ~ 0.048 0.000472 ~ 0.00188	0.1 more 0.0039	
Oil filter rotor	Out. dia.	57 2.244		
Oil filter chain	loosing	5 ~ 10 0.196 ~ 3.937	15 more 5.905	

I. Kick • R. Crank Case Cover

Item		Standard	Repairing Limit	Remarks
Kick starter joint & hole of crank case cover	Clearance	0.08 ~ 0.205 0.00314 ~ 0.0080	0.5 more 0.0196	In case of use
Kick starter spring	Torque	47.6km·kg 344.290ft·lb	40 less 289.32	

J. Under Crank Case and Change

Item		Standard	Repairing Limit	Remarks
Shift drum	Out. dia.	33.95~33.97 1.336~1.337	33.9 less 1.334	
	Out. dia. of axial part	11.966~11.984 0.4722~0.4718	11.9 less 0.4685	
Shift drum & hole of crank case	Clearance	0.025~0.075 0.00098~0.0029	0.2 more 0.00787	
Shift drum	Groove width	8.50~8.515 0.334~0.335	9.0 more 0.354	
Shift fork	In. dia. of hole	34.0~34.02 1.338~1.339	34.1 more 1.34	
	Thickness at end	4.9~5.0 0.1929~0.1968	4.5 less 0.177	D6×P1.0 D8×P1.25
		0.1 within 0.0039	0.8 more 0.031	
Setting stud bolt of upper, under crank case	Torque	0.5~0.7m·kg 3.616~5.063ft·lb	out of standard	
Stud	Torque	1.7~2.0m·kg 12.29~14.46ft·lb		

3. FRAME

A. Handle

Item		Standard	Repairing Limit	Remarks
Throttle grip	Play	2~4 0.0787~0.157	out of standard	Check by external periphery
Throttle wire difference between outer & inner	Length	61 2.4015		
Brake lever	Play	25~30 0.984~1.181	out of standard	Check by lever end
Clutch wire ditto	Length	118 4.645		Check by lever end
Clutch lever	Play	15~25 0.590~0.984	out of standard	

B. Front Cushion

Item		Standard	Repairing Limit	Remarks
Front cushion under bush	Out. dia.	26.04~26.07 1.025~1.026	out of standard	
Pivot bush & suspension arm	Clearance	0.037~0.08 0.1014~0.00314		
Pivot collar	Overall length	24.5~24.6 0.964~0.968		
Pivot bush & collar	Clearance	0.016~0.07 0.00062~0.0027	0.3 more 0.0118	
Front cushion	Stroke	60.3 2.374		
Front cushion damper	Damping force	38~45kg 83.79~99.22 lb	20 less 44.10	by 0.5 m/sec 119.68 inl of piston White spindle oil #60
	Oil capacity	39cc	25 less	
Front cushion spring	Free length	278.8 10.976	268 less 10.551	
	Tension	127.5kg 281.13 lb	110 less 242.55	
	Fall	1" within	out of standard	

C. Front Fork • Steering • Fuel Tank

Item		Standard	Repairing Limit	Remarks
Steering head stem nut	Torque	6.5~7.5m·kg 47.014~54.2ft·lb	out of standard	
Steering head	Angle	90°		Angle between trident and head pipe
Caster		60°		
Trail		75 2.952		
Fuel tank	Capacity	11.8 l 3.117 gal U.S.		

D. Frame Body

Item		Standard	Repairing Limit	Remarks
Steel ball	Out. dia.	1/4" 0.0098		
Rear fork pivot bolt bush	In. dia.	12.2 ~ 12.3 0.480 ~ 0.480	12.6 more 0.496	

E. Saddle • Stand

Item		Standard	Repairing Limit	Remarks
Side & main stand spring	Max. tension	38kg 83.790 lb		
Brake pedal	Foot width	20 ~ 30 0.787 ~ 1.181	out of standard	

F. Rear Fork • Chain Case

Item		Standard	Repairing Limit	Remarks
Rear brake torque link end	Hole	12.1 ~ 12.2 0.467 ~ 0.480	12.4 more 0.488	
Rear fork pivot bush	Out. dia.	28.0 ~ 28.03 1.102 ~ 1.103		
Drive chain	Amount of sag	10 ~ 20 0.393 ~ 0.787	out of standard	95 teeth

G. Rear Cushion

Item		Standard	Repairing Limit	Remarks
Rear cushion	Stroke	61 2.401		
Rear cushion damper	Damping force	50 ~ 56kg 110.25 ~ 123.48 lb	30 less 60.15	At 0.5m/sec (19.68) of piston White spindle oil # 60
	Oil capacity	39cc	30 less	
Rear cushion spring	Free length	218.4 ~ 218.9 8.598 ~ 8.618	207 less 8.149	
	Tension	150 ~ 166kg 330.75 ~ 366.03 lb	143kg less 315.315 lb	
	Tangential angle	1° within	out of standard	

H. Front Wheel

Item		Standard	Repairing Limit	Remarks
Front wheel hub ball bearing	Axial play	0.005 less	0.1 more 0.00393	
	Radial play	0.01 ~ 0.02	0.05 more	
Front brake panel spacer	Out. dia.	21.972 ~ 21.993 0.8650 ~ 0.8658	21.9 less 0.8622	
	Overall length	34.9 ~ 35.1 1.374 ~ 1.381		
Front axle distance collar	Overall length	49.8 ~ 50.2 1.960 ~ 1.976		
Brake cam	Thickness	11.9 ~ 12.1 0.468 ~ 0.476		
Front brake shoe	Out. dia.	174.1 ~ 174.4 6.854 ~ 6.866		Cutter out. dia.
Front brake lining	Thickness	3.5 ~ 4.5 0.137 ~ 0.177	2.5 less 0.0984	
Brake drum	In. dia.	174.8 ~ 175.2 6.881 ~ 6.897	176.0 more 6.929	
Brake shoe spring	Free length	55 2.165	58 more 2.283	
Front axle	Out. dia.	15.0 0.5905	14.9 less 0.586	
Front axle	Bend	0.05 within	0.2 more 0.0078	Both ends support on V block, measure bend at center part
Front wheel rim	Lateral deflection	1.0 within 0.0393	3.0 more 0.118	
Front tire	Air pressure	1.5kg/cm ² 21.330 lb/in ²	out of standard	

I. Rear Wheel

Item		Standard	Repairing Limit	Remarks
Final driven sprocket	Bottom dia.	145.76 5.738	144.7 less 5.696	
Rear wheel hub bearing	Axial play	0.005 within 0.000196	0.1 more 0.00393	
	Radial play	0.01~0.02	0.05 more	
Rear axle distance collar	Overall length	73.8~74.2 2.905~2.921		
Rear axle sleeve	Overall length	9.5~9.7 0.374~0.381		
Rear wheel axle	Out. dia.	16.9~17.0 0.665~0.669	16.85 less 0.663	
Rear brake shoe	Bend	0.05 within	0.2 more 0.0078	
	Out. dia.	174.1~174.3 6.854~6.862		Cutter out. dia.
Rear brake lining	Thickness	3.5~4.5 0.137~0.177	3.0 less 0.118	
Rear brake shoe spring	Free length	27.88 1.0976	32.0 more 1.259	
Rear brake cam	Thickness	11.9~12.1 0.468~0.476		
Rear brake pedal	Foot width	20~30 0.7874~1.1811	out of standard	
Rear wheel rim	Lateral deflection	1.0 within 0.0393	3.0 more 0.181	
Rear tire	Air pressure	2.0kg/cm ² 28.44 lb/in ²	out of standard	

MAINTENANCE STANDARDS,CB72·77

For maintenance operation for HONDA 250·300, Maintenance Standards, specification and dimension are listed hereafter for reference.

EXPLANATION :

Maintenance Items	Items to be inspected, service-wise.
Standard Value	This indicates the manufacturer's standard size or the standard size after newly assembling or adjusting, and shows the size-limit of completed part in the permissible limit of adjustment.
Repairing Limit	Unusable wear limit of parts requiring correction or replacement, function-wise.
Remarks	Unmarked numbers are mm unit and inch unit shown underneath, and others according to the unit indicated.

UNIT IN CHART :

Unmarked numbers are mm unit and inch unit shown underneath, and others according to the unit indicated.

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MAINTENANCE STANDARDS (Model CB72, CB77)

In this list, the dimensions without units indicate "mm" (upper step) and "inch" (down step), and others according to the units indicated. Mark* is exclusively used only for model CB77 and others are common both model CB72 and CB77.

1. GENERAL PERFORMANCE

Item		Standard	Repairing limit	Remarks
Compression pressure		10.5kg/cm ² 149.31lb/in ²	8.0kg/cm less 113.76 lb/in ²	Measure with kick
Fuel Consumption		45km/ℓ 127 Br m.p.g.	26km/ℓ less 73 Br mpg	Speed 40km/h (24.8m.p.h.)
Compression ratio		9.3~9.7	out standard	
Lubricating oil consumption		120cc/1000km less 120cc/620mile	200cc/ 1000km more 200cc/ 620 mile	
Lubricating oil capacity		1500cc	out standard	Check with oil gauge
Rear wheel output		16PS more * 18PS more	12.5PS less 14PS less	(Max. output)
Caster		62°	out standard	(Referential value)
Trail		85°	out standard	(Referential value)

2. ENGINE

A. Cylinder, Cylinder Head

Item		Standard	Repairing Limit	Remarks
Cylinder sleeve	Difference between max. in. dia. and min. in. dia.	within 0.01 0.0003	0.05 more 0.00196	After boring, honing should be enforced
Cylinder sleeve	In. dia.	54.00~54.01 2.1259~2.1263 * 60.00~60.01 2.3622~2.3625	54.10 more 2.129 60.10 more 2.366	After boring, honing should be enforced
Cylinder barrel	Height	83.45~93.5 3.285~3.681	out standard	
Cylinder sleeve	Out. dia.	62.02~62.03 2.441~2.442 67.02~67.03 2.638~2.6389		(Referential value)
	Inlaying space	0.02~0.05 0.00078~0.00196		Be pressed in at the normal temperature

Item		Standard	Repairing Limit	Remarks
Cylinder oversize	Over size	0.25 0.0098		3 category of 0.25
Cylinder head (Cam shaft bearing part)	In. dia.	41.994~42.01 1.653~1.653	42.06 more 1.655	
Cylinder head rocker arm pin	In. dia.	17.0~17.018 0.669~0.669	17.05 more 0.671	
Cylinder head rocker arm pin	Combustion chamber capacity	29.3~29.7cc		(Referential value)
Cylinder head latching force	Bend	0.03 less 0.001	0.06 more 0.002	
Cylinder head head cover attaching face)	Bend	0.03 less 0.001	0.06 more 0.002	
Cylinder head inlet port)	In. dia.	25.5 1.003		
Carburetor insulator	Gap of the in. dia. of inlet port	0.5 less 0.0196	1.0 more 0.039	
Cylinder head gasket	Width	1.0~1.1 0.039~0.043		When tightening
Cylinder packing	Width	0.3~0.4 0.0118~0.0157		When tightening
Tachometer gear	In. dia. of Bush	7.0~7.015 0.275~0.276	7.2 more 0.283	
Tachometer gear	Out. dia. of Bush	13.982~14.0 0.550~0.551		
Tachometer gear "O" ring, 14m/m	Tightness	0.4 0.015		Unless omission, there are no troubles
Tachometer gear and bush	Clearance	0.028~0.043 0.0011~0.0016	0.2 more 0.0078	Unless omission, there are no troubles
Cylinder head cover	Flatness	0.03 less 0.001	0.06 more 0.002	
Breather shield plate	Thickness	1.0 0.0393		
Breather shield plate	Attaching direction	put forward on arrow		Be careful of the mark
Cylinder head cover	Tighting torque	1.9~2.3m·kg 13.74~16.63ft·lb	1.9m·kg less 13.74ft·lb	8 spots are equal
Cylinder head cap	Tighting torque	0.45m·kg 3.25ft·lb	0.35m·kg less 2.53ft·lb	
Cylinder head cap "O" ring	Dia.	3.2 0.125	2.5 less 0.0984	

I/ **B. Crank Shaft, Connecting Rod, Piston**

Item		Standard	Repairing Limit	Remarks
Crank shaft comp.	Crank angle II B1	180°		
	Crank angle (II B)	360°		
Sprocket, center crank shaft	Tooth	16		
	Bottom dia.	36.285 ~ 36.286 1.42854 ~ 1.42857		
Gear, center crank shaft sprocket	NO. of tooth	22		
	Thickness of cross over teeth	15.295 ~ 15.337 0.602 ~ 0.603	15.1 less 0.594	NO. of cross teeth 3
	Out. dia.	47.9 ~ 48.0 1.885 ~ 1.889	47.7 less 1.877	
	Out. dia.	38.003 ~ 38.015 1.4961 ~ 1.4966	38.05 more 1.498	
	Radial clearance	0.006 ~ 0.014	0.05 more	
Center crank weight	Out. dia. of pin	25.991 ~ 25.999 1.0232 ~ 1.0235	25.95 less 1.021	
Center crank shaft, pressed part	in. dia.	25.0 ~ 25.02 0.984 ~ 0.985	0.00401	(Referential value)
R. crank shaft, bearing part	In. dia.	25.907 ~ 25.921 1.019 ~ 1.020		
R. crank shaft, bearing part	Out. dia.	29.983 ~ 29.993 1.1804 ~ 1.1808	29.95 less 1.179	
Crank shaft comp.	Max. swing	0.03 less 0.001	0.1 more 0.003	
R. Crank shaft key groove	Width	4.0 ~ 4.03 0.157 ~ 0.158	4.10 more 0.161	
	Thickness	4.0 ~ 4.1 0.157 ~ 0.161		(Referential value)
	Length	be processed with one cutter		(Referential value)
L. crank shaft pin, pressed part	In. dia.	25.907 ~ 25.921 1.019 ~ 1.020		
L. crank shaft pressed part	Out. dia.	30.002 ~ 30.015 1.181 ~ 1.186	25.95 less 1.021	
		* 30.004 ~ 30.009 1.1812 ~ 1.1814	* 29.97 less 1.179	
Primary drive sprocket	No. of tooth	15		
	Measuring bottom dia.	39.11 ~ 39.21 1.539 ~ 1.543	38.9 less 1.531	