

BL Motorcycles Ltd

Professional Workshop Manual - English Translation

Barossa - Barossa SANYANG NCA250. - WORKSHOP MANUAL ENGINE

PREFACE

This shop manual describes the technical feature and servicing procedures for the SANYANG NCA250. All information, illustrations, directions and specifications included in this publication are base on SANYANG NCA250. SANYANG reserves the right to make changes at any time without notice and without incurring any obligation whatever.

SANYANG INDUSTRY CO.,LTD.
SERVICE DIVISION

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1.GENERAL INFORMATION

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SERVICE RULES:

- (1) Use new packings, gaskets, O-rings and cotter pins space and clipes whenever reassembling.
- (5) Clean all removed parts in or with solvent, and lubricate their sliding surfaces upon disassembly.
- (2) When tightening bolts or nuts, begin on center or

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larger diameter bolts and tighten them in criss-cross pattern in two or more steps if necessary. (6) Coat or fill parts with specified grease where specified.

(3) Use genuine SANYANG parts and lubricants or those equivalent. When parts are to be reused, they must be inspected carefully to make sure they are not damaged or deteriorated and in good usable condition.

(7) Upon assembling, check every possible part for proper installation and movement or operation.

(4) Use special tool when use of such a tool is specified.

(8) Work safely and give your work your undivided attention. Exchange signals as frequently as possible when a work involves two or more workers. Do not run the engine unless the shop or working area is well ventilated.

Symbol Marks:

: Apply engine oil.

NOTE: Things must be noticed.

CAUTION: Things that could cause damage to the engine parts.

: Apply grease.

WARNING: Things that could cause damage to the person or partner.

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SPECIFICATIONS

ITEM NCA250

DIMENSIONS Overall length 2180mm

Overall width 960mm

Overall height 1130mm

Wheel base 1480mm

Ground clearance 160mm

Dry weight 175kg

FRAME Type Double pipe

Front suspension and travel Telescope 165mm

Rear suspension and travel Swing arm 63mm

Front tire size and tire pressure 90/90-18 2.25Kg/C

Rear tire size and tire pressure 130/90-15 2.50Kg/C

Front brake Disk

Rear brake Drum

Fuel capacity 14 liter

Fuel reserve capacity 2.0 liter

Caster angle 26 °

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Front fork oil capacity 160c.c

ENGINE Type Air cooled 4 stroke O.H.C. engine

Cylinder arrangement Double cylinders 15~ inclinde from vertical

Bore & stroke 53 x53mm

Displacement 233.9c.c.

Compression ratio 9.5:1

Oil capacity 1.1 ~1.5 liter (1.3 liter for change)

Intake valve opens 0° BTDC

closes 30 ° ABDC

Exhaust valve opens 35° BBDC

closes -5 ° ATDC

Valve clearance IN. 0.08mm

EX . 0.10mm

Idle speed 1500 rpm

DRIVE TRAIN Clutch Wet muti-plate type

Transmission 5-speed internatlonl

Primary reduction ratio 3.83

Gear ratio I 2.46

II 1.777

III 1.333

IV 1.083

V 0.913

Final reduction ratio 2.285

Gearshift pattern 1|N|2|3|4|5

ELECTRICAL Ignition system C.D.I. unit

Ignition timing "F" mark BTDC 15° ±20° /1500rpm

Full advance BTDC 29.5° ±2° /4000rpm

Starting system Electrical motor starter

Alternator A.C. generator

Battery capacity 12V 9AH

Fuse 20A±2/15A±2/10A±4

Spark plug A6RTC

Spark plug gap 0.6~0.7mm

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ENGINE

TIGHTEN LOCATION Q'TY THREAD DIA(mm) TORQUE(kgf·cm)

Oil plate pan screw 3 8 80~120

Crank shaft bolt 5 16 180~220

Crank shaft nut 1 16 70~110

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Cylinder head nut 3 7 80~120
Cylinder head cover 2 6 80~120
Cam shaft sprocket bolt 10 6 80~120
Crank case bolt 7 6 80~120
L crank case cover bolt 1 6 80~120
Fly wheel bolt 3 10 400~500
A.C.G. socket bolt 4 5 50~70
Start motor bolt 10 6 80~120
R crank case cover bolt 8 6 80~120
Cam shaft holder nut 1 12 180~220
Primary drive gear nut 3 16 400~500
Oil pump flat bolt 1 6 80~120
Clutch lock nut 1 16 400~500
Shift drum stopper 1 6 80~120
Shift cam bolt 1 6 80~120
Cam chain adjuster screw 6 6 80~120
Drain oil bolt 8 150~250
Gear shift spindle bolt 6 100~150

FRAME

TIGHTEN LOCATION Q'TY THREAD DIA(mm) TORQUE(kgf·cm)
Front wheel nut 1 14 600~800
Rear wheel nut 1 14 1000~1200
Rear fork pivot nut 1 14 800~1000
Engine hanger nut 3 10 450~550
Handle pipe upper holder bolt 4 8 180~250
Steering stem nut 1 22 600~900
Front fork nut 1 22 400~500
Rear shock absorber 4 10 300~400
Rear brake torque link 2 8 150~200
Front fork top bridge 2 7 100~140
Rear fork bottom bridge 2 8 240~300
Final drive sprocket 1 10 270~330
Seat bolt 4 6 200~250
Drive sprocket bolt 2 6 100~140

STANDARD TORQUE

TYPE	TORQUE(kgf·cm)	TYPE	TORQUE(kgf·cm)
5 mm bolt, nut	45~60	5 mm bolt	35~50
6 mm bolt, nut	80~120	6 mm bolt	70~110
8 mm bolt, nut	180~250	6 mm flange bolt, nut	100~140
10 mm bolt, nut	300~400	8 mm flange bolt, nut	240~300
12 mm bolt, nut	500~600	10 mm flange bolt, nut	350~450

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Torque specifications listed below for respective locations.

TROUBLE SHOOTING

A. HARD START OR CANNOT START

start engine with choke closed engine knocks, but no
starting follow the starter keypoints to re-start inspection adjustment cause
loosen carburetor drain
screw, check inner side for
gasoline
enough gasoline supplied for carbuerator
remove spark plug,insert it
into plug cap, check the spark by touching engine
grid

test cylinder

compression spark plug jump spark weak or no spark

normal compression pressure too low or no

pressure

engine dose not fire

spark plug dry no gasoline in the tank

fuel tube between gasoline tank and
carburetor clogged.

float chamber fuel tube clogged

gasoline cover air hole clogged

fuel filter clogged

fuel filter screen clogged

gasoline auto fuel cup faulty

spark plug faulty

fouled spark plug

CDI unit fualty pulse coil faulty

high voltage coil cable open or

short high voltage coil open or short

main switch faulty

A.C.G. faulty

Battery faulty

valve too tight, no gap

valve seat faulty

cylinder, piston, piston ring

faulty cylinder gasket leak

valve burnt out

valve timing faulty

crankcase leak when wmpress

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Fuel tube clogged
muffler clogged
auto air cut poor action inlet duct has air in
ignition timing incorrect
carburetor fuel adjusting screw set faulty
air cleaner clogged symptom
no gasoline supplied
for carburetor
remove and check the
spark plug again
spark plug wet carburetor fuel level too high
auto air cut poor action throttle excessively
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B. ROTATION ROUGH (LACKS POWER)

symptom inspection adjustment cause
start engine and slightly
apply fuel
engine speed up engine speed can't up
adjust ignition timing use timing tester
valve ad juster poor ignition timing correct ignition timing incorrect
valve clearance correct valve coearance incorrect
compression pressure check
compression normal pressure to low
carburetor block check
remove spark plug no clogged block air cleaner clogged
fuel tube clogged air hole on the fuel tank cap blocked exhaust tube clogged auto air cut faulty carburetor vacuum
diaphragm worn auto fuel cup faulty
faulty CDI unit
faulty A.C.Generator
fuaty valve seat
cylinder, piston worn gasket leak valve timing incorrect
piston ring worn

remove and clean
remove dirt
spark plug improper heat range
spark plug clearance misadjustment no fouled
discolored dirt and color change valve clearance misadjustment
valve seat worn
check crankcase oil level
for too much or dirt
oil lever normal oil too much too much oil

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too little oil oil no replacement

check cylinder head lubrication

normal abnormal oil tube clogged lean projection from oil pump

engine too hot

no overheating overheated piston, cylinder worn lean mixture poor gasoline carbon in burning chamber too much ignition timing too early (C.D.I. faulty)

clutch slip

high speed

continue working

no knock shock knocks carbon in burning chamber too