| STANDARD BIG BORE KIT 108cc for 12V monkey | | | | | |
|--|-------------------------------|--------------|---|-----------------------------|-------------------|
| DISCHARG | SE : (BORE) x (STROK | Œ) | STD108cc : 0 | ⊅52x51mm (STROKE I | UP) |
| | | CC | DDE | | |
| ALUMINUM C | YLINDER | 214-1083105 | ALUMINUM HARD P | LATING CYLINDER | 215-1133121 |
| ALUMINUM CYLINDE | R / SPL CAMSHAFT | 214-1083115 | ALUMINUM HARD PLATING (| CYLINDER / SPL CAMSHAFT | 215-1133122 |
| APPLICATION | | | LITTLE CUB | FNO,C50-4300001 ~ (★ |) |
| MONKEY / | FNO,Z50J-2000001 ~ | | | FNO,AA01-3000001 ~ 39 | 99999 (★) |
| GORILLA | FNO,AB27-1000001 ∼ 18 | 99999 | CHALY % 1) | FNO,CF50-3400001 ~ (★ | r) |
| MONKEY BAJA | | | SOLO | AC17 (★) | |
| DAX50 (12V) | AB26 | | GIORCUB | AF53 (★) | |
| CD50 / BENLY50S / CL50 | FNO,CD50-1500001 ~ (→ | t) | XR50R/CRF50F | AE03 | |
| JAZZ | AC09 | | ※Unable to install MON | IKEYR / RT MOTRA CHA | IY AND SLIPER |
| MAGNA50 | AC13 (★) | | — Wunable to install MONKEY R / RT, MOTRA, CHALY AND SUP — CUB with wide width camshaft. | | |
| SUPER CUB50 | FNO,C50-9000001 ~ 939 | | | | |
| *Cannot install to FI model. | FNO,C50-9400002 ~950 | 1173(★ DXのみ) | I ' | achining is required beca | iuse cylinder fin |
| | FNO,C50-9600001 ~ 009 | 5210 | and leg shield inter | | |
| | FNO,C50-0200001 ~ (★ |) | (★) models stock (thick) oil spindle might interrupt to crank | | |
| FNO,AA01-1000001 ~ 1699999 (★) | | | shaft, please change to ultra thin spindle set. (In case of the | | |
| PRESS CUB50 FNO,C50-9000001 ~ 9501323 (★) | | | stock is thin shape, do not need to change.) | | |
| | FNO,C50-9600001 ~ 0095210 (★) | | | e detail illustration under | PACKING LIST |
| | FNO,C50-0200001 ~ (★ | -) | 02]. | | |
| FNO.AA01-1000001 ~ 1699999 (★) | | | l ~- 1. | | |

- •Thank you for purchasing Kitaco product. Read and understand the instruction before installing.
- Special tools are required to install.
- After installation, please use this sheet as setting manual.

*Instruction sheet is not included to repair parts. Please keep this instruction safe.

ATTENTION (MUST READ)

- •This product is for racing use. It is out of warranty. Unable to ride on public road with installed vehicle. We are not responsible for violation of law or damages and accidents caused by assembling mistake and improper setting.
- •By installing this product, changing plug, gear, etc and setting is required. Please use Kitaco carburetor and exhaust. Using other company's product may cause of break. If riding with stock setting, it unables to power up, cause of burning and break. Please set up to match the engine. Please change stronger clutch.
- Please follow this instruction sheet. Do not modify the way which is not listed or it will cause burning, damage and trouble.
- •Please ask authorized mechanic for assembling and setting. Ask a specialist at specialty shop if you do not understand the role of the surrounding parts.
- •Change engine oil after break in (around 100km).
- Refer to the manufacturer service manual when installation.
- •Bolts and nuts may get loosen by engine vibration. Make sure not to loosen any bolts and nuts before driving.
- •Clean each parts by parts cleaner, etc and check the oil line is choked by using air duster.
- •Oil the parts with engine oil when assembling.
- Do not use engine brake, etc burden the mission. When starting engine with kick, check the gear is engaged before kick.
- •Please ride under 5,000rpm when break in.



This instruction sheet is for the person who has basic knowledge for maintenance. Do not operate if you do not have any skill and knowledge



Toxic, high-volatile gasoline is used during operation. Be sure to ventilate the room. Please start engine under well-ventilated place.



FLAMMABLES
Inflammable high gasoline is used during operation. Using products causing fire or smoke is strictly prohibited.



Do not touch cylinder, crank case, exhaust, etc during or right after engine operation. It is high temperature.

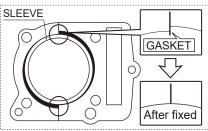


Do not spark the plug outside the cylinder for spark check. It might cause of fire and explosion.

ATTENTION WHEN INSTALLING

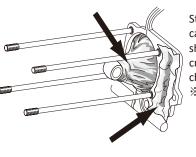
The clearance between cylinder sleeve and crank case through hole.

When installing cylinder, make sure that there is a gap more than 0.5mm all around cylinder sleeve and crank case side through hole. Because of the crank case tolerance, 0.5mm or less gap might interrupt the sleeve. In that case, shave crank case through hole sharply to make clearance more than 0.5mm. If the gasket sticks out from crank case matching surface, cylinder sleeve might touch the gasket because of deformation by thermal expansion, and it might cause of burning piston and oil leaking. Crank case hardness is more than tolerance, processing and assembling require extreme caution.



CRANK CASE FLAT SURFACE

In case of unable to insert cylinder sleeve into crank case, O is out of the hole, please shave. Make sure that there is a gap more than 0.5mm all around cylinder sleeve and crank case through hole.



Stuff clean cloth inside crank case to prevent attaching shaving powder to inside crank case, conrod and cam chain.

When changing crank shaft, disassemble crank case before shaving.



| OPTION PARTS (Sold separately. Please purchase in need.) | | | | | | | |
|--|---|--|-------------------------|--|--|--|--|
| ▼By installing big bore kit, reinforcing clutch, high geared, installing oil cooler, etc are required. | | | | | | | |
| OIL | OIL SUPER OIL COOLER KIT (3ROW CONDENSER) | | | | | | |
| SURROUNDINGS | ULTRA OIL PUMI | P KIT (For application C) | 331-1083400 | | | | |
| CLUTCH | 3 DISK DRIVE U | NIT | 307-1123500 | | | | |
| CLUTCH | MANUAL CLUTC | H KIT (3DISK) | 307-1123000 | | | | |
| ▼Changing intake pa | rts are requied. | | | | | | |
| CARBURETOR | MONKEY / | KEIHIN PCΦ20 BIG CARBURETOR | 110-1015516 | | | | |
| (Specified for | GORILLA | KEIHIN PEΦ24 | 110-1123408 | | | | |
| each model.) | GONILLA | MIKUNI VMΦ26 (Left side / SHORT / LONG TYPE) | 110-1123203/110-1013013 | | | | |
| CDI | MONKEY / GORILLA | | 766-1123300 | | | | |
| (Specified for each model.) | (Not for 6V model.) | REV CON *Recommend map : 3 | 764-1123100 | | | | |
| ▼ General and specia | I tools are required | | | | | | |
| | FLY WHEEL PUL | LER | 674-0500120 | | | | |
| KITACO | CENTER LOCK N | 674-1432900 | | | | | |
| SPECIAL TOOLS | UNIVERSAL HOL | 674-0500000 | | | | | |
| | TAPPET ADJUST | WRENCH | 674-0900200 | | | | |
| COMMERCIAL | THICKNESS GAL | JGE | - | | | | |
| | SPL HIGH CAMS | HAFT (For application C) | 300-1083100 | | | | |
| OTHERS | LOCKER ARM (T | TTANUM) NUT | 303-1013711 | | | | |
| | CAP NUT & WAS | HER SET | 313-0600000 | | | | |

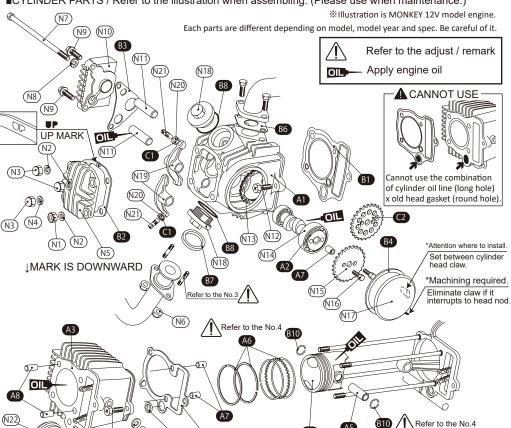
OTHER ATTENTION

 Please use unleaded premium gasoline. This is high pressure, regular gasoline may cause of knocking and breaking vehicle.

STANDARD BIG BORE KIT 108cc for 12V monkey

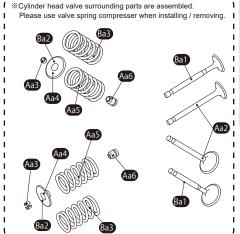
NO.2 /5

■CYLINDER PARTS / Refer to the illustration when assembling. (Please use when maintenance.)



**() is 1set QTY.

| FIGURE | CODE | NAME | QTY | | | | |
|--------|-------------|------------------------|--------|--|--|--|--|
| - | 313-1133010 | STD CYLINDER HEAD COMP | × 1 | | | | |
| Aa2 ↓ | 302-1013011 | STD VALVE SET | × 1 | | | | |
| | 302-1013100 | IN VALVE • STD | (× 1) | | | | |
| | 302-1013200 | EX VALVE • STD | (× 1) | | | | |
| Aa3 | 303-1013502 | VALVE COTTER | × 4 | | | | |
| Aa4 | 303-1013510 | VALVE SPRING RETAINER | × 2 | | | | |
| Aa5 | 303-1133010 | VALVE SPRING NEW STD | (× 2) | | | | |
| Aa6 | 303-1122507 | VALVE STEM SEAL | × 2 | | | | |



EX MARK TO EXAUST SIDE

*Basically, reuse genuine parts if it is unattached.

If there is a hard degradation like a blem, fatigue and wear etc on the reuse parts, please change to new ones.

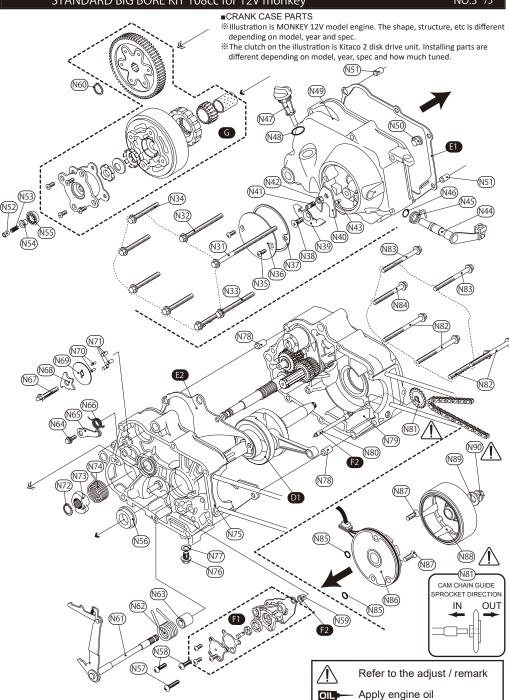
| | | , , | | | | |
|------------|--------------|---|-------------|-------------|-------------|-------------|
| ▼ P | ACKING I | LIST 01 | | | | |
| FIGURE | CODE | NAME | 214-1083105 | 214-1083115 | 215-1133121 | 215-1133122 |
| A1 | 313-1133110 | STD CYLINDER HEAD ASSY (VALVE ASSEMBLED) | × 1 | × 1 | × 1 | × 1 |
| A2 | 300-1083100 | SPL HIGH CAMSHAFT (For application C) | OP | × 1 | OP | × 1 |
| A3 | 311-1123200 | Φ52.0 CYLINDER T2 (88/108cc) | × 1 | × 1 | - | - |
| | 311-1083701 | Φ52.0 CHROME CYLINDER (88/108cc) | - | - | × 1 | × 1 |
| A4 | 351-1133101 | Φ52.0 PISTON (88cc) 3R (0.8-0.8-1.5) | × 1 | × 1 | × 1 | × 1 |
| A5 | 353-0001336 | PISTON PIN 13x36 | × 1 | × 1 | × 1 | × 1 |
| A6 | 352-0006520 | Φ52.0 PISTON RING (88/108cc) 3R (0.8-0.8-1.5) | × 1SET | × 1SET | × 1SET | × 1SET |
| A7 | 70-989-08120 | DOWEL PIN 8x12L | × 2+1 | × 2+1 | × 2+1 | × 2+1 |
| A8 | 70-989-08140 | DOWEL PIN 8x14L | × 2 | × 2 | × 2 | × 2 |
| В↓ | 960-1016088 | RUBBER SEAL SET-A (88/108cc) MONKEY BC SUS RUBBER SEAL | × 1SET | × 1SET | - | - |
| | 960-1123088 | RUBBER SEAL SET-A (88/108cc) ROUND HOLE SUS RUBBER SEAL | - | - | × 1SET | × 1SET |
| B1 | 961-1123200 | HEAD GASKET (88/108cc) LONG ROUND HOLE STANLESS STEEL | (× 1) | (× 1) | - | - |
| | 961-1123088 | HEAD GASKET (88/108cc) ROUND HOLE STANLESS STEEL | - | - | (× 1) | (× 1) |
| B2 | 966-1015022 | CYLINDER HEAD COVER GASKET | (× 1) | (× 1) | (× 1) | (× 1) |
| В3 | 966-1015110 | R HEAD SIDE COVER GASKET (12v) | (× 1) | (× 1) | (× 1) | (× 1) |
| B4 | 966-1015021 | L HEAD SIDE COVER GASKET | (× 1) | (× 1) | (× 1) | (× 1) |
| B5 | 966-1015010 | RUBBER SEAL 16mm | (× 1) | (× 1) | (× 1) | (× 1) |
| В6 | 950-1015010 | MANIFOLD RUBBER SEAL | (× 1) | (× 1) | (× 1) | (× 1) |
| B7 | 70-963-11001 | EX GASKET (H-1) | (× 1) | (× 1) | (× 1) | (× 1) |
| B8 | 967-1015000 | O RING 30.8mm | (× 2) | (× 2) | (× 2) | (× 2) |
| B9 | 962-1083600 | BASE RUBBER SEAL | (× 1) | (× 1) | (× 1) | (× 1) |
| B10 | 354-0000130 | PISTON PIN CLIP 13mm | (× 2) | (× 2) | (× 2) | (× 2) |
| | | OPTION PARTS (CYLINDER HEAD PARTS) | | | | |
| C1 | 303-1013711 | TAPPET ADJUST TITANUM NUT (1pc) | OP | OP | OP | OP |
| | | | | | | |

| ▼ O | ▼ OPTION PARTS | | | | | | |
|------------|----------------|---|-----|--|--|--|--|
| FIGURE | CODE | NAME | QTY | | | | |
| C2 | 303-1133900 | LIGHTWEIGHT CAM SPROCKET 28T (12v MONKEY) | OP | | | | |

▲() is 1set QTY.

▲OP is option parts. Please purchase separately depending on setting.

| | STOCK PARTS (TORQUE / REMARK) | | | | | | | |
|--------|-------------------------------|-----|------------------|--------|----------------------------|-----|---------------------|--|
| FIGURE | NAME | QTY | TORQUE | FIGURE | NAME | QTY | TORQUE | |
| N1 | M6 NUT | × 1 | 12N·m (1.2kgf·m) | N13 | CAM CHAIN | × 1 | | |
| N2 | 6mm FLAT WASHER | × 3 | | N14 | CAMSHAFT | × 1 | | |
| N3 | M6 CAP NUT | × 3 | 12N·m (1.2kgf·m) | N15 | CAM SPROCKET | × 1 | | |
| N4 | 6mm COPPER FLAT WASHER | × 1 | | N16 | M5 BOLT | × 2 | 8N • m (0.8kgf • m) | |
| N5 | CYLINDER HEAD COVER | × 1 | | N17 | L CYLINDER HEAD SIDE COVER | × 1 | | |
| N6 | M6 FLANGE NUT | × 2 | 12N·m (1.2kgf·m) | N18 | TAPPET CAP | × 2 | 12N·m (1.2kgf·m) | |
| N7 | M6 x 110 BOLT | × 1 | 10N·m (1.0kgf·m) | N19 | LOCKER ARM | × 2 | | |
| N8 | 6mm SEALING WASHER | × 1 | | N20 | TAPPET ADJUST NUT | × 2 | 10N·m (1.0kgf·m) | |
| N9 | M6 x 20 BOLT | × 2 | 10N·m (1.0kgf·m) | N21 | TAPPET ADJUST SCREW | × 2 | | |
| N10 | R CYLINDER HEAD SIDE COVER | × 1 | | N22 | CAM CHAIN GUIDE ROLLER | × 1 | | |
| N11 | LOCKER ARM SHAFT | × 2 | | N23 | ROLLER PIN | × 1 | 10N·m (1.0kgf·m) | |
| N12 | M6 BOLT | × 2 | 10N·m (1.0kgf·m) | N24 | 8mm SEALING WASHER | × 1 | | |

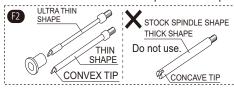


▲ BIG BORE KIT PACKING LIST is on (No,2) too.

| ▼ P/ | ACKING L | JST 02 | | | | |
|-------------|-------------|--|-------------|-------------|-------------|-------------|
| FIGURE | CODE | NAME | 214-1133121 | 214-1133122 | 215-1133121 | 215-1133122 |
| D1 | 309-1083500 | STROKE UP CRANK SHAFT COMP (12V CRANK) | × 1 | × 1 | × 1 | × 1 |
| E1 | 966-1015004 | R CRANK CASE COVER GASKET | × 1 | × 1 | × 1 | × 1 |
| E2 | 966-1015023 | CRANK CASE GASKET | × 1 | × 1 | × 1 | × 1 |
| | | OPTION PARTS (OIL PUMP) | | | | |
| F1 | 331-1083400 | ULTRA OIL PUMP KIT (For application C) | OP | OP | OP | OP |
| F2 | 331-1083003 | OIL PUMP SPINDLE SET | OP ※ | OP ※ | OP ※ | OP ※ |
| | | OPTION PARTS (CLUTCH) | | | | |
| G | 307-1016500 | 2 DISK DRIVE UNIT | OP | OP | OP | OP |
| | 307-1016000 | MANUAL CLUTCH KIT | OP | OP | OP | OP |
| | 317-1083010 | ULTRA CLUTCH KIT TYPE X (For MONKEY 4 speed) | OP | OP | OP | OP |
| | 317-1123710 | ULTRA CLUTCH KIT TYPE X (For MONKEY 5 speed type II / III) | OP | OP | OP | OP |
| | | OPTION PARTS (FOR AUTO CLUTCH) | | | | |
| - | 966-1015011 | CLUTCH OUTER COVER GASKET (For auto clutch) | OP | OP | OP | OP |
| - | | OPTION PARTS (FOR STARTER MOTOR MOD | DEL) | | | |
| - | 966-1085023 | L CRANK CASE COVER GASKET (For starter motor model) | OP | OP | OP | OP |

▲OP ※ is option. Please purchase in case of (★) models.

▲() is 1SET QTY. ▲OP is option. Please purchase to match setting.



In case of \bigstar mark models, stock spindle interrupts crank shaft. Please change to ultra thin spindle set (illustration left side). (If the stock shape is thin, do not need to change.)

| [| STOCK PARTS (TORQUE / REMARK) | | | | | | | | | |
|-----|-------------------------------|-------------------------|-----|-------|------------|--------|------------------------------|-----|-------|------------|
| ٦ [| FIGURE | NAME | QTY | TOF | RQUE | FIGURE | NAME | QTY | TOF | RQUE |
| | N31 | M6 x 100 BOLT | × 1 | 10N•m | (1.0kgf•m) | N61 | GEAR SHIFT ARM COMP | × 1 | | |
| | N32 | M6 x 65 BOLT | × 1 | 10N∙m | (1.0kgf•m) | N62 | GEAR SHIFT ARM RETURN SPRING | × 1 | | |
| | N33 | M6 x 55 BOLT | × 1 | 10N•m | (1.0kgf•m) | N63 | 12.2mm COLLAR | × 1 | | |
| | N34 | M6 x 40 BOLT | × 5 | 10N•m | (1.0kgf•m) | N64 | DRUM STOPPER ARM PIVOT BOLT | × 1 | 12N•m | (1.2kgf•m) |
| | N35 | M5 x 12 SCREW | × 2 | | | N65 | DRUM STOPPER ARM | × 1 | | |
| | N36 | CLUTCH COVER | × 1 | | | N66 | DRUM STOPPER ARM SPRING | × 1 | | |
| | N37 | CLUTCH COVER GK | × 1 | | | N67 | M6 BOLT | × 1 | 12N•m | (1.2kgf•m) |
| | N38 | M6 x 16 SCREW | × 1 | 10N•m | (1.0kgf•m) | N68 | DRUM STOPPER PLATE | × 1 | | |
| | N39 | LIFTER SETTING PLATE | × 1 | | | N69 | SHIFT DRUM SIDE PLATE | × 1 | | |
| ı | N40 | CLUTCH LIFTER PLATE | × 1 | | | N70 | ROLLER 3 x 8.5 | × 2 | | |
| | N41 | CLUTCH ADJUST SCREW | × 1 | | | N71 | SHIFT DRUM PIN | × 3 | | |
| | N42 | M6 NUT | × 1 | 10N•m | (1.0kgf•m) | N72 | 16mm CIRCLIP | × 1 | | |
| | N43 | CLUTCH ARM STOPPER PIN | × 1 | | | N73 | KICK SPRING RETAINER | × 1 | | |
| ı | N44 | CLUTCH LIFTER ARM | × 1 | | | N74 | KICK STARTER SPRING | × 1 | | |
| | N45 | CLUTCH ARM SPRING | × 1 | | | N75 | R CRANK CASE | × 1 | | |
| | N46 | O RING 14 x 1.5 | × 1 | | | N76 | DRAIN BOLT | × 1 | | |
| | N47 | FILER CAP | × 1 | | | N77 | DRAIN COCK RUBBER SEAL | × 1 | | |
| | N48 | O RING 18 x 3 | × 1 | | | N78 | DOWEL PIN 10 x 14 | × 2 | | |
| | N49 | R CRANK CASE COVER | × 1 | | | N79 | L CRANK CASE | × 1 | | |
| | N50 | CLUTCH PUSH ROD | × 1 | | | N80 | OIL PUMP SPINDLE | × 1 | | |
| | N51 | DOWEL PIN 8 x 12 | × 2 | | | N81 | CAM CHAIN GUIDE SPROCKET 25T | × 1 | | |
| - [| N52 | OIL THROUGH | × 1 | | | N82 | M6 x 65 BOLT | × 4 | | |
| | N53 | OIL THROUGH SPRING | × 1 | | | N83 | M6 x 60 BOLT | × 2 | | |
| | N54 | OIL THROUGH GUIDE | × 1 | | | N84 | M6 x 50 BOLT | × 1 | | |
| | N55 | OIL THROUGH BEARING | × 1 | | | N85 | O RING 7 x 2 | × 2 | | |
| | N56 | 17mm COLLAR | × 1 | | | N86 | STARTER COIL ASSY | × 1 | | |
| | N57 | M6 x 22 SCREW | × 1 | | (1.0kgf•m) | N87 | M6 x 16 PLATE SCREW | × 2 | 10N•m | (1.0kgf·m) |
| Į | N58 | M6 x 16 SCREW | × 2 | 10N•m | (1.0kgf·m) | N88 | FLYWHEEL | × 1 | | |
| | N59 | OIL PUMP SPINDLE COLLAR | × 1 | | | N89 | 10mm WASHER | × 1 | | |
| ı | N60 | 17mm CIRCLIP | × 1 | | | N90 | M10 NUT | × 1 | 42N•m | (4.2kgf•m) |

STANDARD BIG BORE KIT 108cc for 12V monkey

NO.4 /5

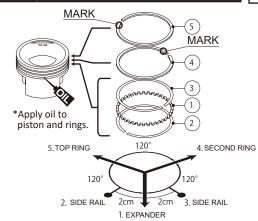
INSTALLING PISTON RING Install piston ring as illustration.

"POINT"

- •Divide ring as following illustration.
- Top and second ring marked face to upward (head direction).
- •There is no specified direction for expander and side rail.

| PARTS DATA (Install in numecrial order) | | | | | |
|---|-----------------------|-----|--|--|--|
| FIGURE | NAME | QTY | | | |
| 1 | EXPANDER | × 1 | | | |
| | SIDE RAIL (BOTH SAME) | × 2 | | | |
| 4 | SECOND RING (BLACK) | × 1 | | | |
| 5 | TOP RING (WHITE) | × 1 | | | |

*Install piston with EX mark to exhaust side.



INSTALLING / REMOVING FLYWHEEI 1

- 1) Firstly, set to compression top dead center (flywheel T mark and crank case matching mark are matched.) Fix flywheel by specified tool universal holder to remove flywheel center nut.
- 2) Install flywheel puller to flywheel with rotating left (counter clockwise) to install firmly deeply. UNIVERSAL HOLDER Fix flywheel puller by spanner, etc, then rotate handle to right side to pull out flywheel.

FLAT WASHER FLYWHEEL PULLER CENTER NUT

Stud bolt swelling side is crank case side.

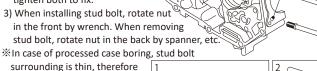
※Apply screw lock to stud bolt part (4 pcs).

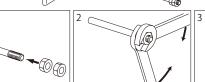
REMOVING / INSTALLING STUD BOLT

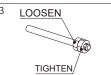
(Orifice enlargement machining when installing oil pump.)

- 1) Install 2pcs M6 nuts to stud bolt.
- 2) Hang spanner to each nut. tighten both to fix.
- 3) When installing stud bolt, rotate nut in the front by wrench. When removing
- surrounding is thin, therefore use screw lock and tighten a half of specified torque. (Install

muffler stud bolt as same.)







STUD BOLT

CASE MACHINED : TORQUE : 5N·m (0.5kgf·m)

USUALLY: TORQUE: 12N·m (1.2kgf·m)

ADJUSTMENT AND INSTALLING EACH PARTS / CHECK POINT

HOW TO ADJUST VALVE TIMING AND CHECK VALVE CLEARANCE

INSTALLING CAMSHAFT

- 1) Rotate crank shaft to counterclockwise to match fly wheel "T" mark and crank case matching mark.
- 2) Apply clean oil to camshaft and camshaft bearing. Face cam lobe to piston side, install camshaft to inside cylinder head while pushing locker arm.
- 3) Install dowel pin to cam sprocket, match cam sprocket O mark and cylinder head nod. Then install cam chain to sprocket. (Align crank shaft center, cam shaft center and O mark in a straight line.)
- *Refer to the compression top dead center illustration.
- 4) Install cam sprocket to camshaft, tighten cam sprocket bolt. (TORQUE: 0.8kgf·m)

VALVE CLEARANCE SETTING

- 5) Rotate crank shaft to counterclockwise to match fly wheel "T" mark and L crank case matching mark. Move locker arm to check piston position is at compression top dead
- 6) Insert thickness gauge between adjust screw and valve stem to adjust intake and exhaust valve clearance.
- **OVALVE CLEARANCE**

IN: 0.05~0.07mm EX: 0.07~0.09mm

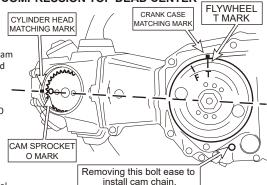
ADJUSTMENT

- 7) Loosen lock nut and rotate adjust screw to adjust specified valve clearance. After adjustment, tighten lock nut while fixing adjust screw. After tightening lock nut, check the valve clearance again. (TORQUE: 0.9kqf·m)
- 8) Check the tappet cap O ring, please change it in need, apply oil to tappet cap O ring, install tappet cap and cylinder head L side cover.

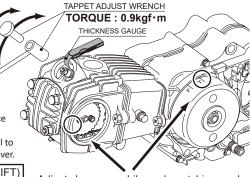
SERVICE GUIDE VALVE TIMING DEGREE (AT1mm LIFT)

| ı | *Compared to sock head, valve train layout and timing is different. | | | | | | |
|---|---|---------|----------|----------|--|--|--|
| ı | SPL CAMSHAF | OPEN | CLOSE | | | | |
| ı | USING | INTAKE | BTDC 7° | ABDC 41° | | | |
| ı | NEW STD CYLINDER HEAD | EXHAUST | BBDC 46° | ATDC 11° | | | |
| ı | USING STOCK HEAD | INTAKE | BTDC 4° | ABDC 37° | | | |
| ı | OSING STOCK FILAD | EXHAUST | BBDC 46° | ATDC 9° | | | |

COMPRESSION TOP DEAD CENTER



VALVE CLEARANCE ADJUSTMENT



Adjust clearance while each matching mark are matched (compression top dead center).

START ENGINE AFTER INSTALLATION

A time lag of circulation engine oil around engine inside may cause of burning. In case of the engine with oil check bolt, remove check bolt and spark plug, then kick to the (cranking) oil comes out from check bolt. After check it, put check bolt and spark plug back and start engine.

BREAK IN (HEAT TREATMENT)

Please do break in with low (short) gear (in case of 5speed model, please use 4speed) and total 2 hours without applying force to engine.

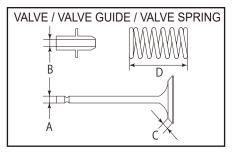
ADDITIONAL TIGHTENING

After break in, cylinder, cylinder head stud bolts might get distortion and elongation because of cooling and heating. Additional tightening to even the power. The bolts of cylinder head for most of the models are 4pcs + hexagon bolts or 2 pcs. After the engine becomes room temperature, loosen a nut of 4pcs stud bolt, then apply oil to nut, washer and stud bolt screw part and tighten with specified torque.

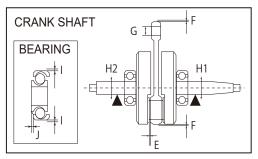
Secondly, loosen diagonally stud bolt nut, then as same as previous, apply oil to nut, washer and stud bolt screw part and tighten with specified torque. (continue)

(ATTENTION! Do not loosen all 4pcs nut at once. Please operate one by one.)

Finally, apply oil to bolts and tighten with specified torque as same to finish.



| SEF | RVICE GUIDE CYLINDER HEAD | BASIC VALUE (mm) | USAGE (mm) |
|-----|-----------------------------|--------------------------------------|------------------|
| Α | IN VALVE STEM DIAMETER | φ 5,445 $\sim \varphi$ 5,465 | ~ φ 5.400 |
| | EX VALVE STEM DIAMETER | φ 5.430 $\sim \varphi$ 5.445 | ~ φ 5.400 |
| В | IN VALVE GUIDE I.D. | φ 5.475 $\sim \varphi$ 5.485 | φ 5.500 ~ |
| | EX VALVE GUIDE I.D. | φ 5.475 $\sim \varphi$ 5.485 | φ 5.500 ~ |
| C | IN VALVE SEAT CONTACT WIDTH | 0.8 ± 0.1 mm | 1.3mm ~ |
| | EX VALVE SEAT CONTACT WIDTH | 0.8 ± 0.1 mm | 1.5mm ~ |
| D | OUTER VALVE SPRING | 30 ± 0.3 mm | ~29mm |



| SEI | SERVICE GUIDE (CRANK SHAFT) | | | | | | | |
|-----|---|--------------------|------------|--|--|--|--|--|
| | • | BASIC VALUE (mm) | USAGE (mm) | | | | | |
| Е | CONROD BIG END SIDE GAP | 0.1 ~ 0.35 | 0.5 ~ | | | | | |
| F | CONROD BIG END VERTICAL GAP | 0 ~ 0.01 | 0.05 ~ | | | | | |
| G | CONROD SMALL END I.D. | 13.013 ~ 13.043 | 13.05 ~ | | | | | |
| Н | LEFT SIDE CRANK SHAFT SHAKE | 0~0.05 | 0.08 ~ | | | | | |
| I | INSIDE BEARING, OUTER RING VERTICAL GAP | 0.05 ~ 0.09 | 0.10 ~ | | | | | |
| J | INSIDE BEARING, OUTER RING SIDE GAP | $0.005 \sim 0.040$ | 0.050 ~ | | | | | |