

# NEO BIG BORE KIT 164cc No. 1 / 4

CODE	BLACK 212-1432750	SILVER 212-1432760
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APPLICATION : GROM (JC61/JC75) / MONKEY 125 (JB02)


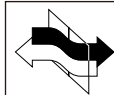



## ATTENTION!

- Must to use injection controller (i-map) sold separately to maximize engine performance. Please change specified exhaust. Other optimal products are required like as large capacity injector, etc.
- Fuel setting is required if the products combination is not pre-installed to i-map.
- Please use unlead premium gasoline. Regular gasoline will cause of trouble such as knocking, etc.

- Thank you for purchasing Kitaco product. Read and understand the instruction before installing.
- For installation, other specified tools are required. ● After installation, please use this instruction sheet as setting manual.
- ※ Please keep this instruction sheet safe because this is not included to spare parts.

## ATTENTION! (MUST READ)

- This parts is made exclusive for racing use. Note that racing parts are not covered under warranty. Installed vehicles cannot ride on the general public road. We are not responsible for violation of law or damages and accidents caused by assembling mistake and improper setting.
- i-map setting might required by installing other company products. Please set up correctly. If ride with stock condition, it might cause of unable to power up, burn, break, etc.
- Follow this instruction sheet and install correctly. Do not modify the way which is not listed or it will cause 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 to the new after break in. (about 100km)
- 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 up by using air duster.
- Oil the parts with engine oil when assembling.
- Out put characteristic of the engine will be changed from original by installing this product. Make sure to make suitable set up for the brake system, steering, etc.
- Do not check the sparking of spark plug outside of the cylinder head. There are dangerousness of explosion.
- Refer to the manufacturer HONDA service manual when installation.

	This sheet is intended for the person who has basic knowledge for maintenance. Do not operate if you do not have skill and knowledge.		Toxic, highly-volatile gasoline is used during operation. Be sure to ventilate the room. Do not operate for hours in a hermetically closed room.		<b>FLAMMABLES</b> Inflammable high gasoline is used during operation.
	Do not touch the engine parts (cylinder, crankcase, muffler, engine oil, etc) right after engine operation. Make sure to start the installation after the engine parts are completely cool.		Do not check the sparking of spark plug outside of the cylinder head. There are dangerousness of explosion.		

## SPEC

- Displacement : 164cc [BORE] 60X [STROKE] 57.9 stock size ● Compression ratio 11.5 : 1 (stock 9.3 : 1)
- Fuel : NON-LEAD PREMIUM GASOLINE TYPE

## OPTION PARTS (Please purchase in need.)

- ▼ Generally tools, other specified tools and genuine tools comply with service manual. These are not limit depending on how to install.

	NAME	CODE	PURPOSE
SPECIAL TOOLS	THICKNESS GAUGE	-	Valve clearance measurement.
	UNIVERSAL HOLDER	HONDA : 07725-0030000	Fixing cam sprocket.
	LOCK NUT WRENCH # 30/24mm	KITACO : 674-1432900	Installing / removing auto oil filter / clutch.
	GEAR HOLDER	KITACO : 674-0510900	Installing / removing auto oil filter / clutch.
	FLY WHEEL HOLDER	KITACO : 674-0500910	Installing / removing fly wheel.
	FLY WHEEL PULLER 30mm	KITACO : 674-0500130	Installing / removing fly wheel.
	UNIVERSAL BEARING PULLER DRIVER	HONDA : 07631-0010000	Removing crank shaft R side bearing.
	OUTER DRIVER 52 x 55mm	HONDA : 07749-0010000	Use when press bearing fit to R crank case.
	PILOT 22mm	HONDA : 07746-0010400	
	OIL HYDRAULIC PRESS		
CRANK SHAFT ASSEMBLY TOOL	KITACO : 674-1432700	Use when pull crank shaft into R crank case.	
MOLYBDENUM GREASE	KITACO : 0900-969-00100		
GASKETS	LIQUID GASKET KC-167	KITACO : 0900-969-00020	For crank case matching surface.
	THREE BOND 1215/1207B WORTH	HONDA RECOMMEND	

Please follow the attention below when installation.

## MUST HAVE OPTION PARTS (Please purchase them.)

	NAME	CODE	REMARK
ELECTRICAL	INJECTION CONTROLLER (i-map) For each model	-	Coupler on SET
	PC INTERFACE CABLE	763-0500900	Use when connect to PC for making user original map.
INTAKE	BIG THROTTLE KIT (JC61) GROM	403-1432100	For NEO cylinder head.
	BIG THROTTLE BODY KIT (JC75/JB02)	403-1300100	
FUEL	LARGE CAPACITY INJECTOR	-	Injector is different from models. Please choose right injector that other option.
DRIVE	CLUTCH DISK KIT	307-1432500	6 DISKS
OIL	SUPER OIL COOLER KIT For each model	-	Recommend engine oil.
	elf MOTO4 PROTECH 5w40 1L		
RECOMMEND OIL	PANOLIN STREET 4T RACE 10W50 1L		

## ATTENTION OF INJECTION CONTROLLER (i-map)

The pre-installed (set) i-map cannot deal with the processed intake / exhaust port and processed combustion chamber. Air / fuel setting is required for the parts combination that is not included in pre-installed map or combination with other manufacturer's product. In that case, please make original map on user setting map.  
※ Computer, PC interface cable and facility for air fuel ratio is required to make original map.



Inspect standard and service limit. Change to new ones if there is wear or damages. Failure to correct inspection will cause severe engine troubles.

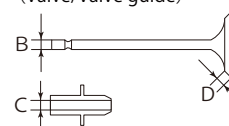
## SERVICE GUIDE (If there is a hard degradation like a blem, fatigue and wear etc on the reuse parts, please change to new ones.) Unit : mm

	ITEM	STANDARD (mm)	LIMIT (mm)	REMARK
CAMSHAFT	A Cam lobe height	IN 33.47 ~ 33.71	33.22	
		EX 33.32 ~ 33.56	32.97	
VALVE VALVE GUIDE	- VALVE CLEARANCE	IN 0.10 ± 0.02	-	
	- (When cooled)	EX 0.17 ± 0.02	-	
	B STEM O.D.	IN 4.975 ~ 4.990	4.965	
		EX 4.955 ~ 4.970	4.945	
	C GUIDE I.D.	IN/EX 5.000 ~ 5.012	5.04	
CAMCHAIN TENSIONER	D VALVE SEAT WIDTH IN/EX	1.0	1.5	
	E ROD O.D.	11.985 ~ 12.000	11.94	
CYLINDER	- SPRING FREE LENGTH	111.3	109	
	F I.D.	60.010 ~ 60.030	60.060	
PISTON	G O.D. (Measurement standard position.)	59.980 ~ 59.990	59.95	(8mm from bottom of skirt.)
	H PISTON PIN BORE I.D.	13.002 ~ 13.010	13.020	
PISTON PIN	I O.D.	12.994 ~ 13.000	12.98	
	J CONROD BIG END	SIDE CLEARANCE 0.10 ~ 0.35	0.5	
CRANK SHAFT	K	RADIAL CLEARANCE 0.006 ~ 0.020	0.05	
	L CONROD SMALL END I.D.	13.010 ~ 13.028	13.05	
	M CRANK SHAFT RUNOUT	-	TIR0.10	

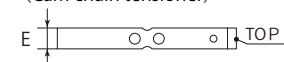
(Camshaft)



(Valve/Valve guide)

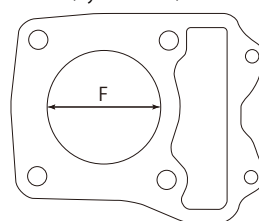


(Cam chain tensioner)

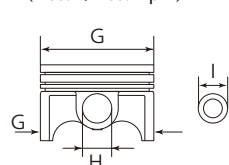


Inspect rubber on tensioner push rod end whether there is distortion / crack.

(Cylinder I.D.)

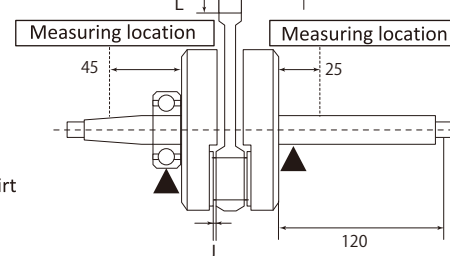


(Piston/Piston pin)



G: 8mm from bottom of skirt

(Crankshaft)




# NEO BIG BORE KIT 164cc No. 2/4

CODE      BLACK      212-1432750      SILVER      212-1432760

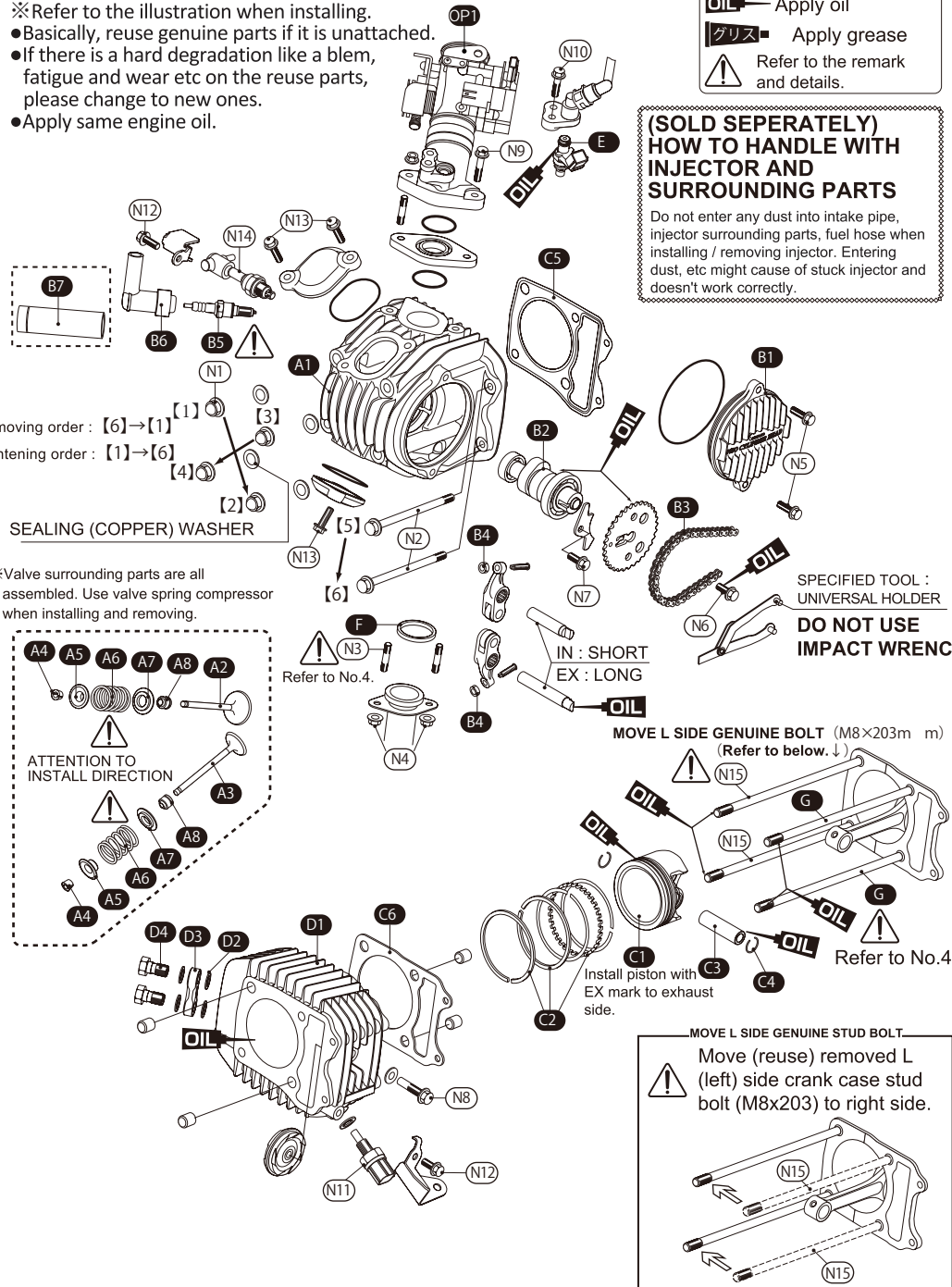
## CYLINDER HEAD & CYLINDER PARTS

- ※Refer to the illustration when installing.
- 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.
- Apply same engine oil.

**OIL** → Apply oil  
**グリス** → Apply grease  
 Refer to the remark and details.

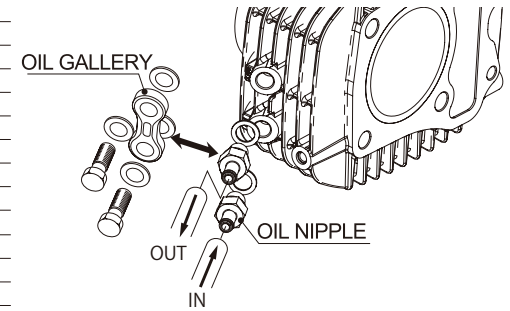
### (SOLD SEPERATELY) HOW TO HANDLE WITH INJECTOR AND SURROUNDING PARTS

Do not enter any dust into intake pipe, injector surrounding parts, fuel hose when installing / removing injector. Entering dust, etc might cause of stuck injector and doesn't work correctly.



## CYLINDER OIL LINE

This big bore kit has bypassed oil line on right side of the cylinder. It is enable as oil line of oil cooler, etc by removing oil gallery and installing oil nipple.



▼GENUINE PARTS (TORQUE)			
FIGURE	NAME	QTY	N · m
N1	CYLINDER HEAD CAP NUT 8mm	4	24
N2	FLANGE BOLT M6 × 90	2	12
N3	EXHAUST PIPE STUD BOLT	2	11
N4	FLANGE NUT 8mm	2	27
N5	L SIDE COVER BOLT M6 × 20	2	12
N6	CAM SPROCKET BOLT M8 × 22	1	27
N7	ROCKER ARM SET PLATE BOLT M6 × 12	1	12
N8	CAM CHAIN GUIDE ROLLER PIN BOLT M8	1	10
N9	INTAKE PIPE BOLT M6 × 30	1	12
N10	INJECTOR MOUNTING BOLT	2	12
N11	OIL TEMPERATURE SENSOR M10	1	14.5
N12	FLANGE BOLT M6 × 14	2	12
N13	TAPPET CAP BOLT M6 × 20	4	12
N14	O2 SENSOR	1	24.5
N15	L STUD BOLT M8 × 203 (REUSE)	2	11

PACKING LIST				BLACK	SILVER	REMARK / TORQUE
FIGURE	NAME	CODE	212-1432750	212-1432760		
A	NEO CYLINDER HEAD ASSY	BLACK 313-1432750	x1	-		
		SILVER 313-1432760	-	x1		
A1	NEO CYLINDER HEAD comp	BLACK -	x1	-		
		SILVER -	-	x1		
A2	IN VALVE φ 30	302-1432601	x1	x1		
A3	EX VALVE φ 24.5	302-1432602	x1	x1		
A4	VALVE COTTER	303-1128512	x4	x4		
A5	VALVE SPRING RETAINER	303-1432510	x2	x2		
A6	VALVE SPRING	303-1432000	x2	x2	Narrower side is facing to combustion chamber.	
A7	VALVE SPRING SEAT	303-1432504	x2	x2		
A8	VALVE STEM SEAL	303-1128511	x2	x2		
B1	NEO SIDE COVER	SILVER 310-1432700	-	x1		
		BLACK 310-1432710	x1	-		
B2	NEO HIGH CAM SHAFT	300-1432700	x1	x1	No decompression function.	
B3	CAM CHAIN 90L	-	x1	x1		
B4	TAPPET ADJUST TITANIUM NUT	303-1013711	x2	x2	9.0N · m	
B5	IRIDIUM PLUG (IY24)	025-015-0240000	x1	x1	9.0N · m (Refer to No.0.4.)	
B6	PLUG CAP (70B)	751-0500110	x1	x1		
B7	PLUG WRENCH 13mm	674-0400900	x1	x1		
C	NEO PISTON KIT 164cc	350-1432700	x1	x1		
C1	φ 60 PISTON	351-1432700	x1	x1		
C2	φ 60 PISTON RING (0.8-0.8-1.5)	352-0006600	x1	x1		
C3	PISTON PIN 13 × 40	353-0001340	x1	x1		
C4	PISTON PIN CLIP 13mm	354-0000130	x2	x2		
C5	HEAD GASKET (φ 63)	961-1432320	x1	x1		
C6	BASE RUBBER SEAL	962-1432300	x1	x1		
D1	φ 60 CYLINDER (For 164cc)	SILVER 311-1444160	-	x1		
		BLACK 311-1444150	x1	-		
D2	ALMINUM SEALING WASHER 10mm	771-0500999	x4	x4		
D3	OIL GALLERY (BLACK) T4	771-9000450	x1	-	T4/28.5mm	
	(SILVER) T4	771-9000460	-	x1		
D4	ALUMINUM BANJO BOLT M10 × P1.25	771-0900900	x2	x2	15N · m	
E	LARGE CAPACITY INJECTOR x1.6/x1.9/x2.6	-	OP	OP	(OP: option) Keep out dust!	
F	EX GASKET (H-06)	70-963-11006	x1	x1		
G	STUD BOLT M8X210	303-1432520	x2	x2	11N · m	
H1	CRANK SHAFT ASSY	309-1432100	x1	x1	L side bearing pressed in.	
H2	BEARING # 63/22X	315-1413010	x2	x2	R side need to press in.	
I1	R CRANK CASE GASKET	70-966-14324	x1	x1		
I2	L CRANK CASE GASKET	70-966-14325	x1	x1		

# NEO BIG BORE KIT 164cc No. 3/4

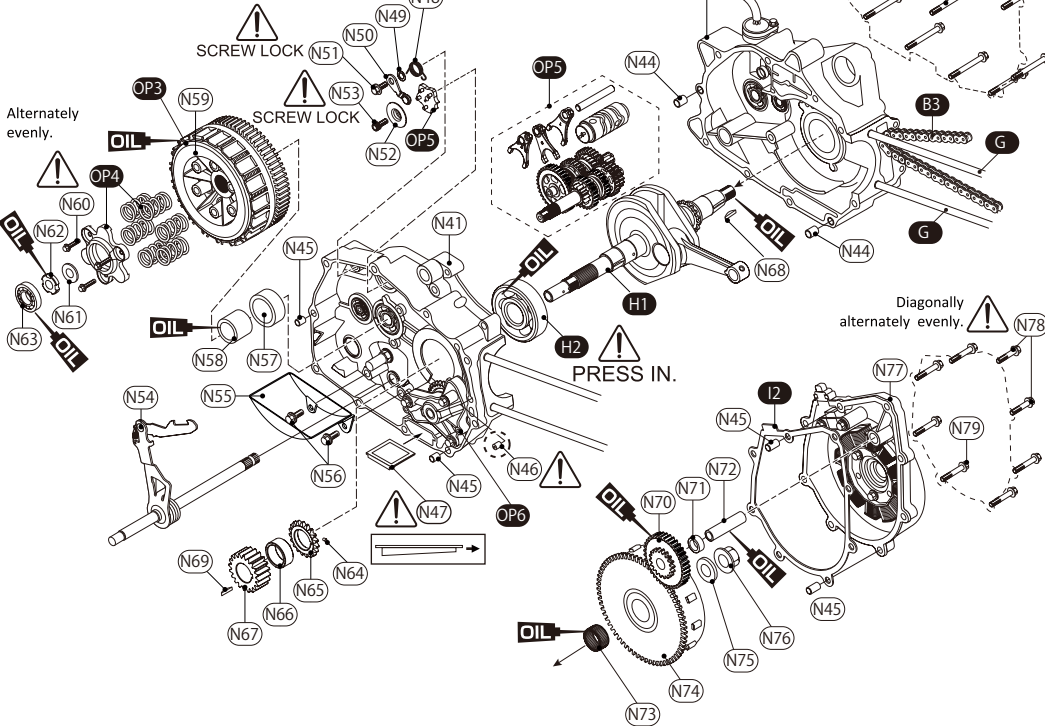
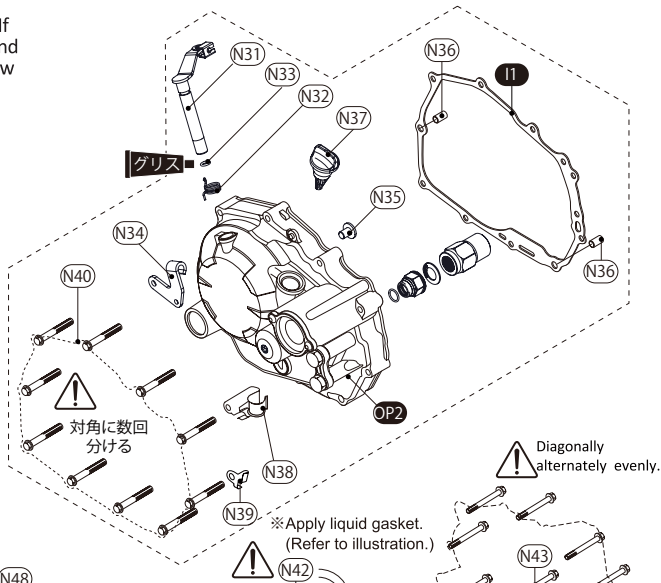
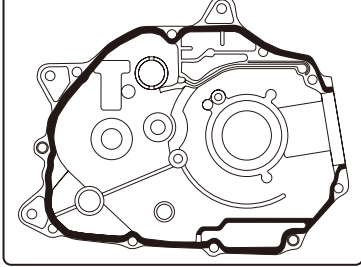
CODE	BLACK	212-1432750	SILVER	212-1432760
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※Refer to the illustration when installing.  
Basically, reuse genuine parts if it is unattached. If there is a hard degradation like a blem, fatigue and wear etc on the reuse parts, please change to new ones.

●Apply same engine oil.

- Apply oil.
- Apply grease.
- Refer to the remark and details.

## WHERE TO APPLY LIQUID GASKET (N42) L CRANK CASE ASSY



## OPTION PARTS

FIGURE	NAME	CODE	QTY	REMARK
OP1	BIG THROTTLE KIT (For NEO CYLINDER HEAD.)	(specified for each model)	1	
OP2	CLUTCH COVER	Black 307-1432200	1	(Silver) 307-1432210
OP3	CLUTCH DISK UNIT	307-1432500	1	6 DISK
OP4	REINFORCED CLUTCH LIFTER SET	307-1452600	1	
OP5	4th CLOSED GEAR SET	305-1432200	1	NORMAL MISSION STYLE.
OP6	SUPER OIL PUMP KIT	331-1432000	1	Increases oil flow by 40%.

## ▼GENUINE PARTS (REMARK / TORQUE)

FIGURE	NAME	QTY	TORQUE	REMARK
N31	CLUTCH LEVER	1		
N32	CLUTCH LEVER SPRING	1		
N33	O RING 8.8 × 1.9	1		Exchange to new one if damaged. / Apply grease.
N34	CLUTCH CABLE RECEIVER	1		
N35	CLUTCH LIFTER ROD	1		
N36	DOWEL PIN 8 × 12	2		Exchange to new one if damaged.
N37	OIL LEVEL GAUGE	1		
N38	HIGH TENSION CODE & SENSOR CODE CLIP	1		
N39	SENSOR CODE CLIP	1		
N40	FLANGE BOLT M6 × 40	10	10 N · m	Install / remove diagonally alternately evenly.
N41	R CRANK CASE	1		
N42	L CRANK CASE	1		Refer to the illustration where to apply liquid gasket.
N43	FLANGE BOLT M6 × 60	11	12 N · m	Install / remove diagonally alternately evenly.
N44	DOWEL PIN 10 × 12	2		
N45	DOWEL PIN 8 × 12	4		
N46	ORIFICE	1		Remove when using Kitaco clutch cover.
N47	ENGINE OIL STRAINER SCREEN	1		Please wash when disassembling / be careful of insert direction
N48	SHIFT DRUM STOPPER SPRING	1		
N49	FLAT WASHER	1		
N50	SHIFT DRUM STOPPER ARM	1		
N51	SHIFT DRUM STOPPER ARM BOLT	1	12 N · m	Apply screw lock.
N52	SHIFT DRUM STOPPER HOLDER	1		
N53	SHIFT DRUM INSTALLATION BOLT	1	10 N · m	Apply screw lock.
N54	GEAR SHIFT SPINDLE comp	1		
N55	OIL SEPARATOR PLATE	1		
N56	FLANGE BOLT M6 × 16	2	10 N · m	
N57	COLLAR	1		
N58	CLUTCH OUTER GUIDE	1		Apply OIL.
N59	CLUTCH ASSY	1		
N60	FLANGE BOLT M6 × 20	2	12 N · m	Install / remove diagonally alternately evenly.
N61	WASHER 14.2 × 26 × 3	1		
N62	CLUTCH CENTER LOCK NUT	1	64 N · m	Apply OIL.
N63	LIFTER BEARING	1		Apply OIL.
N64	DOWEL PIN 3 × 5	1		
N65	OIL PUMP DRIVE GEAR	1		
N66	PRIMARY DRIVEN COLLAR	1		
N67	PRIMARY DRIVE GEAR	1		
N68	WOODRUFF KEY 4mm	1		
N69	WOODRUFF KEY 4mm	1		
N70	STARTER REDUCTION GEAR	1		Apply OIL.
N71	STARTER REDUCTION COLLAR	1		
N72	REDUCTION GEAR SHAFT	1		
N73	NEEDLE BEARING	1		
N74	STARTER DRIVEN GEAR / FLY WHEEL	1		
N75	WASHER 12 × 24 × 2.3	1		
N76	FLANGE NUT 12mm	1	64 N · m	Apply OIL.
N77	L CRANK CASE COVER	1		
N78	FLANGE BOLT M6 × 28	2	10 N · m	Install / remove diagonally alternately evenly.
N79	FLANGE BOLT M6 × 35	6	10 N · m	Install / remove diagonally alternately evenly.



# NEO BIG BORE KIT 164cc No. 4/4

CODE BLACK 212-1432750 SILVER 212-1432760

## ADJUSTMENT AND INSTALLATION OF EACH PARTS / REMARKS

### INSTALLING PISTON RING

Install piston ring as following illustration.

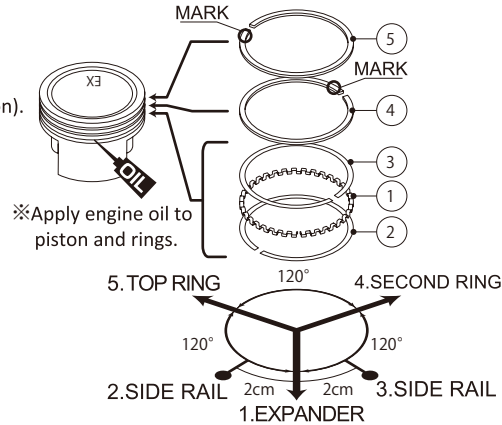
#### "POINT"

- 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 ON ILLUSTRATION (Install in numerical order)

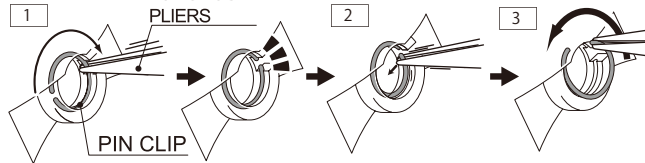
FIGURE	NAME	QTY
1	EXPANDER	× 1
2/3	SIDE RAIL (BOTH SAME)	× 2
4	SECOND RING (BLACK)	× 1
5	TOP RING (WHITE)	× 1

※ Install piston with EX mark to exhaust side.



### HOW TO REMOVING&INSTALLING PISTON PIN CLIP

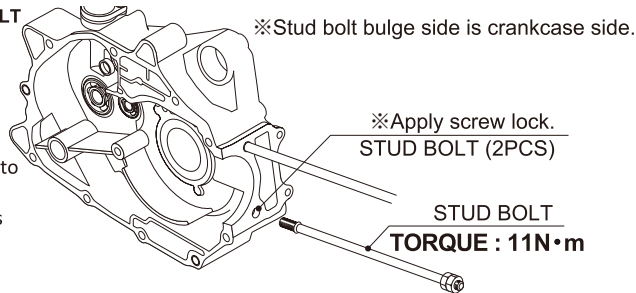
- 1) Sand the pin clip by longnose pliers and pull pin clip cut out section close to piston cut out section.
- 2) Sand the pin clip cut out section by longnose plier to pull inside, then pull yo outside to remove.
- 3) Rotate slowly to remove pin clip.



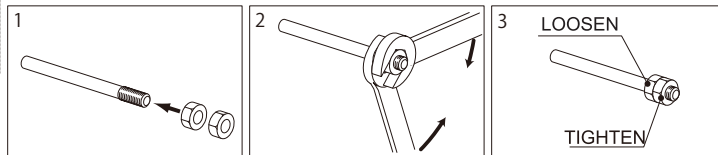
- ※ Pin clip might pop off. Be careful of it when installation.
- Install pin clip in reverse order of removing.

### INSTALLING / REMOVING STUD BOLT

- 1) Install 2PCS nuts (M8) to stud bolt.
  - 2) Use spanner, etc to each nut to tighten both nut to fix.
  - 3) When installing stud bolt, use wrench to rotate front side nut. When removing, use spanner, etc to rotate inner nut.
- (Please install stud bolt for muffler as same process.)



**ATTENTION!**  
Please reuse removed L (left side) crank case stud bolt (M8x203) move to right side.



### TIGHTENING PLUG

Tighten spark plug in 9N · m with using torque wrench. In case of not using torque wrench, tighten by hand till it touches the plug washer, then use plug wrench to tighten 120° if its new, 30° if its reusing. Do not tighten more, it causes of breaking screw thread.



## ADJUSTMENT AND INSTALLATION OF EACH PARTS / REMARKS

### HOW TO INSTALL / REMOVE CAM SHAFT REMOVE

- 1) Remove cam sprocket cover, O-ring, crank shaft hole cap and timing hole cap.
- ※ Recommend to loosen cam chain tension by removing flange bolt when removing / installing cam sprocket. (If oil comes out, please wipe it.)

### INSTALL

- 1) Set camshaft to compression top dead center, then hook cam chain to cam sprocket with cam sprocket "O" mark matches to cylinder head matching mark and install to camshaft temporarily.
- 2) Rotate crank shaft counter clockwise to match fly wheel matching mark "T" and crank case matching mark with cam sprocket "O" mark is align to cylinder head matching mark at compression top dead center. If not matched, reassemble cam sprocket.
- 3) Stable cam sprocket with using universal holder (specified tool) to tighten cam sprocket bolt.
- 4) Inject 4.0cc engine oil to inside push rod through flange bolt (M6x18) hole, then tighten with new sealing washer and bolt.

### SET UP VALVE CLEARANCE

- 1) Rotate crank shaft counter clockwise to match flywheel "T" mark and crank case matching mark. Move rocker arm to check piston position is at compression top dead center. (Able to check with rocker arm sagging. If there is no play, rotate crank shaft again.)
- 2) Insert thickness gauge between adjust screw and valve stem to check intake and exhaust valve clearance.

### STANDARD VALVE CLEARANCE (COOLED) :

IN : 0.10 ± 0.02mm

EX : 0.17 ± 0.02mm

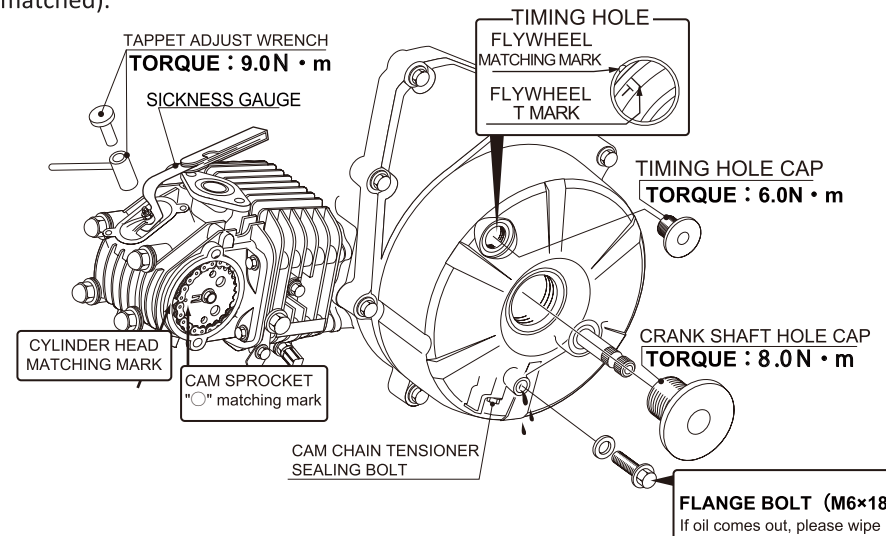
### ADJUSTMENT

- 1) Loosen lock nut and rotate adjust screw to adjust specified valve clearance. After adjustment, tighten lock nut while adjust screw is stabled. After tightening lock nut, check the valve clearance again.
- 2) Check each hole cap O-ring condition and change it in need. Apply engine oil to O-ring, then install valve adjust hole cap, cam sprocket cover, crank shaft hole cap and timing hole cap.

(TORQUE / crank shaft hole cap : 8.0N·m / timing hole cap : 6.0N·m)

### COMPRESSION TOP DEAD CENTER / VALVE CLEARANCE ADJUSTMENT

Adjust clearance of valve clearance at compression top dead center (each matching mark is matched).



FLANGE BOLT (M6×18)  
If oil comes out, please wipe it.