

HYPER PISTON KIT No.1/3

CODE	(HYPER P-KIT) 355-4030100	(HIGH COMP P-KIT) 350-4030100 ※	(HIGH CAM SHAFT) 300-4030000
APPLICATION	Z125 PRO (BR125H)		

ATTENTION !

- To bring maximum power of engine performance, exchange your stock muffler with Kitaco muffler. It needs extra air-fuel setting if using other manufacturer's muffler.
- Unlead premium gasoline is required. Low quality gasoline causes knocking with high compression piston kit.
- ※ Using high compression piston kit only is it not allowed. It causes piston failure.

- Thank you for purchasing Kitaco product. Read and understand the instruction before installing.
- There are necessary special tools to install this kit.
- The instruction is not included in repair parts, please keep this instruction and use it as a setting manual.
- ※ Please keep the instruction for later needs.

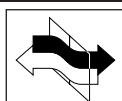
ATTENTIONS (MUST READ)

- HYPER PISTON KIT is designed and made only for race use. Each rider should follow the regulations of road traffic law in his own country. We are not responsible for violation of law or damages and accidents caused by assembling mistake and improper setting.
- I-map setting (under development) is required if using other manufacturer's parts. With Kitaco muffler, stock ECU is compatible, but i-map might be required if using racing muffler together.
- ※ I-map (injection controller) for Z125 is under development.
- HYPER PISTON KIT is not for the item just bolt-on and run. Using it without suitable setting will not make improvement of engine
- Follow the instruction, install correctly and modify.
- Do not modify the way which is not listed because it may cause seizure and damage.
- Please ask mechanic for assembling and setting.
- Please ask a specialist at specialty shop if you do not understand the role of the surrounding parts.
- Change the engine oil to new specified one after you break in (about 100km). (Our Specified Oil: elf xt3818)
- Bolts and nuts may get loosen by engine vibration. Check and make sure of each part of bolts and nuts are not loose before running.
- Each part must need to be cleaned by parts cleaner. Use air duster and check whether the oil line is choked up.
- Oil the parts with engine oil when assembling.
- Do not use rapid engine brake. For kick starting, kick the pedal after you make sure that the gear is engaged.

● Refer to the service manual for each vehicle when installing.



This instruction is for person who has knowledge for motorcycle maintenance. If you do not, do not try to install, but ask for mechanic.



Toxic, highly-volatile gasoline is used during operating. Be sure to ventilate the room. Do not operate for hours in a hermetically closed room.



FLAMMABLES
Inflammable gasoline is used during operation. Using flammable things such as smoking is strictly prohibited.



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.



HIGH VOLTAGE
Wear insulated glove when checking the sparking outside the cylinder.

SPECIFICATIONS

- Displacement : 124cc
- Stock [Bore] 56.0X [Stroke] 50.6mm
- Compression ratio 12.1:1 (Stock 9.8:1)
- Fuel type : **Unlead Premium gasoline**
- VALVE CLEARANCE STANDARD (COLD)
- IN VALVE : 0.06 ± 0.02mm EX VALVE : 0.10 ± 0.02mm

REQUIRED TOOL & REPLACEMENT PARTS

- GENERAL TOOLS
- THICKNESS GAUGE

REQUIRED OPTIONAL PARTS (Sold separately)

	NAME	CODE	QTY	REFERENCE
RECOMMENDED ENGINE OIL	ELF 4ST ENGINE OIL 5w40 1L	968-2000021	× 1	
	PANOLIN STREET 4T RACE 10W/50 1L	968-2996001	× 1	

PACKING LIST			HYPER PISTON	HIGH COMP	
FIG	NAME	CODE	355-4030100	350-4030100	REFERENCE
A	HIGH CAMSHAFT	300-4030000	× 1	-	
B1	φ 56 HIGH COMP PISTON	351-4021000	× 1	× 1	
B2	φ 56 PISTON RING (0.8-0.8-1.5)	352-4021000	× 1	× 1	
B3	PISTON PIN 13 × 40 × 8	353-0001340	× 1	× 1	
B4	PISTON PIN CLIP 13mm	354-0000130	× 2	× 2	
C1	HEAD GASKET (φ 56)	961-4021000	× 1	× 1	
C2	BASE GASKET	962-4021000	× 1	× 1	
C3	INTAKE PIPE SIDE GASKET	950-4030000	× 1	× 1	
C4	HEAD SIDE GASKET	966-4030000	× 1	× 1	
OP1	EX GASKET (K-12)	70-963-14012	× 1 ※	× 1 ※	※ option parts
OP2	NUT (TITANIUM)	303-1013711	× 2 ※	× 2 ※	※ option parts

MAKE SURE TO FOLLOW THE FOLLOWING INSTRUCTION WHEN ASSEMBLING

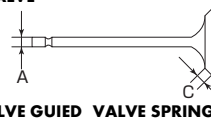


Inspect each parts service standard and limit before using OEM parts.
Exchange new ones when worn or damaged. Even new parts might have distortion.
Installing without inspection causes severe engine trouble.

SERVICE GUIDE

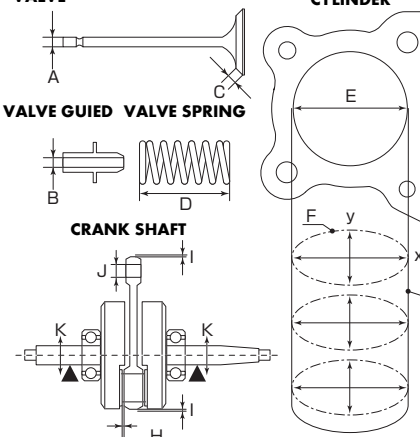
			STANDARD (mm)	LIMIT (mm)	CAUTION
VALVE	A Stem O.D.	IN	4.475 ~ 4.490	4.46	
		EX	4.462 ~ 4.472	4.44	
	B Guide I.D.	IN/EX	4.500 ~ 4.512	4.58	
VALVE GUIDE	C Valve seat width	IN/EX	0.80 ~ 1.15	-	Inspect contact width of valve sheet with red lead and so on. If it is not consistent, seat polishing is required.
VALVE SPRING	D Free length	IN/EX	36.8	35.5	Narrower side faces combustion chamber.
CYLINDER	E I.D.		55.986 ~ 55.998	56.09	Measure all the cylinder, including new one. Polishing surface might be required if cylinder / cylinder head mating place has distortion.
	F Circularity		0.01	0.05	
	G Cylindricity		0.01	0.05	
CRANK SHAFT	H Connecting rod large end	Side clearance	0.1 ~ 0.2	0.4	Make sure that the crankshaft rotates smoothly.
		Radial clearance	0.006 ~ 0.020	0.07	
	J Connecting rod small end	I.D.	13.003 ~ 13.014	13.05	
	K Run out		TIR 0.03 以下	TIR 0.08	

VALVE

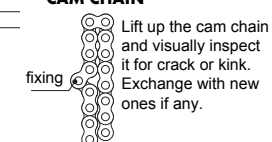


VALVE GUIDED VALVE SPRING

CYLINDER



CAM CHAIN



CAM CHAIN GUIDE / TENSIONER GUIDE
Exchange them if there are kink or partially wear.

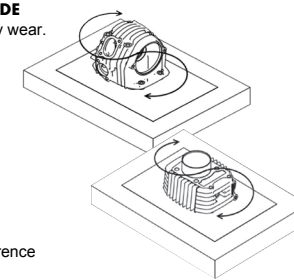
CAM CHAIN TENSIONER

Visually inspect it if there are tensioner push rod distortion or crack (same as O-ring).
Exchange it if crack or partial wear.

CYLINDER HEAD / CYLINDER MATING SURFACE

Inspect cylinder / cylinder head mating surface with straight edge / sickness gauge.
If distortion is found, polish them like figure-eight.

※ Polish them to the minimum.



F: (difference between X & Y)
G: (difference between X & Y as well as difference among upper, middle and lower circles).

HYPER PISTON KIT No.2/3

CODE	(HYPER P-KIT) 355-4030100	(HIGH COMP P-KIT) 350-4030100	(HIGH CAM SHAFT) 300-4030000
APPLICATION	Z125 PRO (BR125H)		

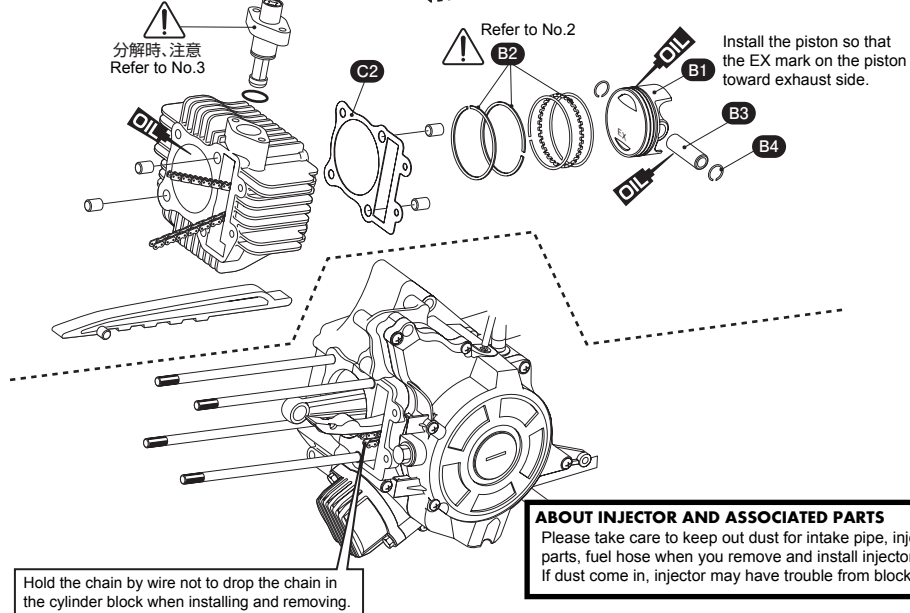
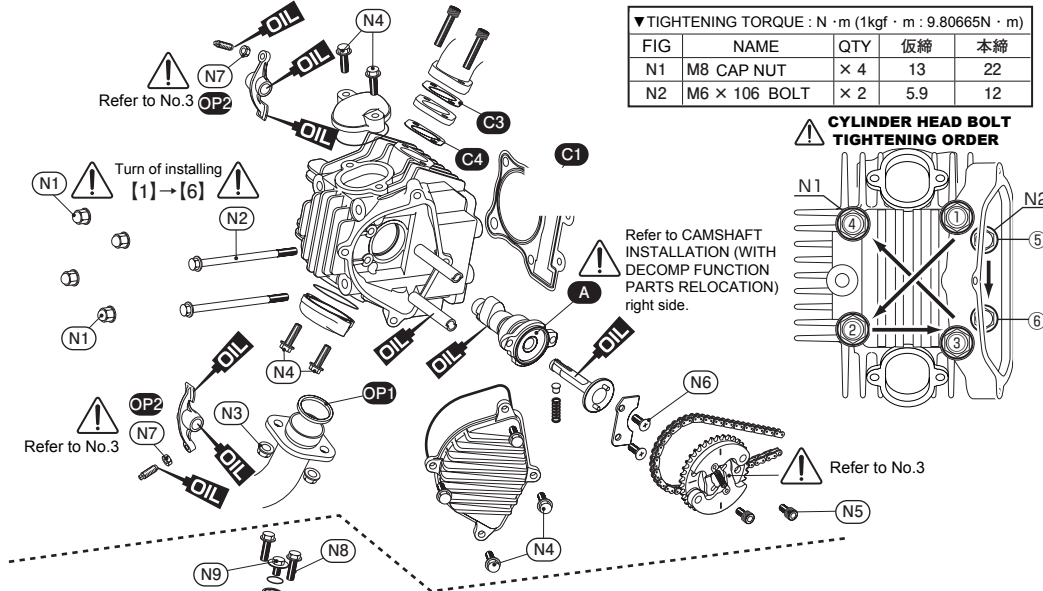
CYLINDER PARTS

Reuse Honda genuine parts that are not in the kit.
Change the reusing parts with new parts if there are significant blem, fatigue and wear.
Clean the parts before installation

Refer to adjustment / confirmation
 Apply engine oil

▼TIGHTENING TORQUE : N · m (1kgf · m : 9.80665N · m)

FIG	NAME	QTY	仮締	本締
N1	M8 CAP NUT	× 4	13	22
N2	M6 × 106 BOLT	× 2	5.9	12



TIGHTENING TORQUE : N · m (1kgf · m : 9.80665N · m)

FIG	NAME	QTY	N · m	FIG	NAME	QTY	N · m
N1	M8 CAP NUT	× 4	22	N6	M6 × 14 COUNTERSUNK SCREW	× 2	5.2
N2	M6 × 106 BOLT	× 2	12	N7	TAPPET ADJUST NUT	× 2	8.8
N3	M8 FLANGE NUT	× 2	12	N8	M6 × 25 FLANGE HEXAGON BOLT	× 2	5.2
N4	M6 × 20 BOLT	× 8	5.2	N9	CAM CHAIN TENSIONER CAP BOLT	× 1	5.2
N5	M6 × 12 CAP BOLT	× 2	12				

CAMSHAFT INSTALLATION (WITH DECOMP FUNCTION PARTS RELOCATION)

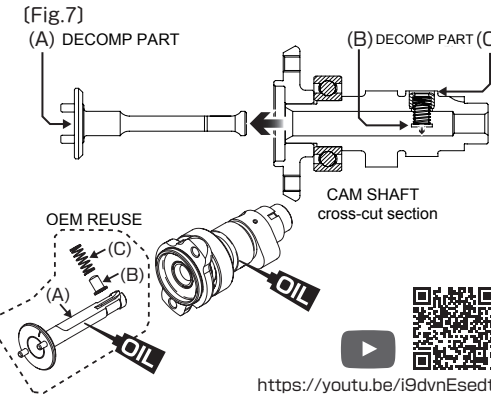
DISASSEMBLING

- * Pliers / tweezers is required to relocate the decomp parts.
- * With a plier, pull out the part (A). Be careful not to hurt the parts.
- * With a plier, pull out the part (C)

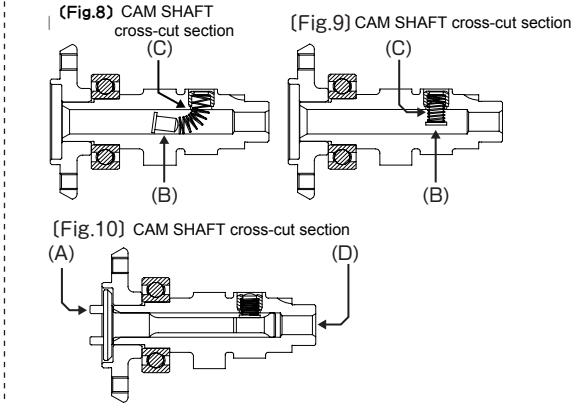
INSTALLING

- * Install decompression parts to Kitaco high camshaft.
- * Press (C) with tweezers to install it inside the camshaft.
- * Install (B) inside (C) to correct the direction.

CAMSHAFT DISASSEMBLING



CAMSHAFT INSTALLATION



INSTALLING PISTON RINGS

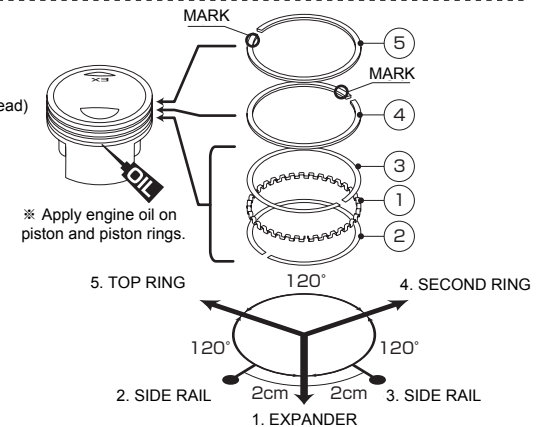
Install the piston rings as it is shown.

"POINT"

- Set ring's disconnected part as it is shown.
- Stamped side of top ring & second must be set upward (face to cylinder head)
- There is no specified direction for EXPANDER and SIDE RAIL rings.

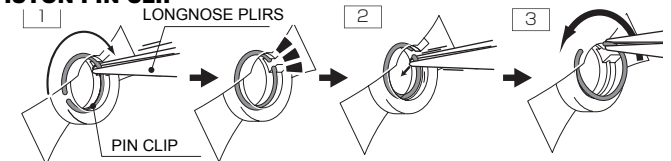
PARTS DATE (Install in order)

No.	NAME	PCS
1	EXPANDER	× 1
2/3	SIDE RAIL (BOTH SAME)	× 2
4	SECOND RING (BLACK)	× 1
5	TOP RING (WHITE)	× 1



HOW TO REMOVE AND INSTALL PISTON PIN CLIP

- 1) Pinch the pin clip by longnose pliers and turn the cutout section the groove section of the piston.
- 2) Pinch the cutout section of pin clip by longnose pliers and pull in to inside of the hole, and remove to out side of the piston.
- 3) Remove completely by turn the pin clip slowly.



- * Please take care for snapping of pin clip.
- Install method is inverse process.

HYPER PISTON KIT No.3/3

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APPLICATION	Z125 PRO (BR125H)		

REMOVING & INSTALLING CAM SPROCKET

● REMOVING

- 1) Make sure that the alternator flywheel "T" mark is aligned with crankcase notch.
- 2) Remove camshaft chain tensioner (see chain tensioner illustration)

ATTENTION :

Turn the crankshaft, pulling the chain upward if there is camshaft chain slack.

● INSTALLING

- 1) Turn the alternator rotor nut counterclockwise to align the "T" mark line on the rotor with the projection of the alternator cover.
If not aligned, reinstall camshaft sprocket.

- 2) Hang the alternator rotor nut on tool to stable the crankshaft, tighten camshaft sprocket bolt (apply to screw agent)

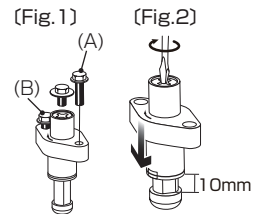
- 3) Install camshaft chain tensioner. (Refer to chain tensioner figure.)

- 4) Check the valve timing as mentioned. Turn camshaft anticlockwise twice and recheck the valve timing when the crankshaft get to TOP DEAD CENTER. (If the timing mark is matched, the valve timing is correct.)

ATTENTION!

If you turn the crankshaft in the wrong timing, the valve may bump to piston and bend the valve.
Stop and check the valve timing if you feel friction when turning the crankshaft.

ADJUSTING CAM TENSIONER



CAM CHAIN TENSIONER

ATTENTION!

Cam chain tensioner is not returnable, therefore once the push rod projects, it will not return back. Remove tensioner completely when tensioner's body comes off from the cylinder. Turn the crankshaft after you finish removing the tensioner or camshaft timing will go wrong and cause damage.

● REMOVING TENSIONER

- Remove the chain tensioner cap bolt [A] and chain tensioner mounting bolt [B]. Loosen the chain tensioner mounting bolt [B] fully.

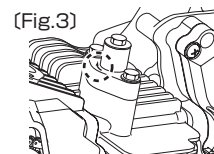
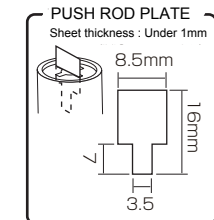
- The tensioner can not be removed in a state where the push rod is extended. While turning the push rod clockwise with a flat tip screw-driver, remove the tensioner with chain tensioner mounting bolt [B]

● INSTALLING TENSIONER

- Turn the push rod clockwise with a flat tip screwdriver, until the protruded length becomes to about 10mm [Fig.2]
- ※ Do not turn the rod counterclockwise at installation. This could detach the rod and the tensioner cannot be reinstalled.

- Insert a suitable holder plate to hold compression of the rod.
- ※ Install the chain tensioner so that the mark faces to the forward.

- Remove the plate and install the cap bolt.



HOW TO ADJUST VALVE CLEARANCE

- 1) Turn the crankshaft counterclockwise to align the "T" mark line on the rotor with the notch.
※ Align the "T" mark after the intake valve (rocker arm) has moved down and then moved up.
- 2) Insert thickness gauge between the intake & exhaust valves to inspect the valve clearance.

● VALVE CLEARANCE STANDARD (COOL)

IN VALVE

EX VALVE : 0.10 ± 0.02mm

ADJUSTMENT

- 1) Loosen lock nut, turn adjust screw to adjust specified valve clearance. After that, tighten the lock nut, adjust valve clearance again.

(TIGHTENING TORQUE : 8.8N · m)

- 2) Replace the O-rings with new ones if necessary.

Apply engine oil to O-ring and install valve adjust hole cap, cam sprocket cover, alternator rotor cap and timing inspection cap.

Valve clearance is adjusted at TDC (top dead center) in the compression stroke when the marks are aligned .

