



• Thank you for purchasing the 4 Valve Cylinder Head for Honda Grom. Please read the instruction carefully and retain them for future reference.

NOTICE

- Follow the steps as described in the instructions for proper installation.
- Correct tools must be used for proper installation.
- Do not modify any parts during installation.
- Maintenance and repairs should be performed by our professionals only.

****IT IS MANDATORY THAT THE INSTALLATION OF THIS KIT BE PERFORMED BY A PROFESSIONAL MECHANIC ONLY.**

SYMBOL EXPLANATION

	Apply engine oil before installation.
	Apply molybdenum disulfide oil before installation.
	Apply screw glue before installation.
	Apply grease before installation.
	Make sure all screws are tightened to OEM torque specifications before starting the engine.
	If any information dealt with in the manual remains unclear seek professional assistance.

1-1 ACCESSORIES

1 Cylinder head X1 	2 Camshaft X1 	3 Intake manifold X1 	4 Manifold thermal insulation gasket X1 	5 Manifold gasket X2
6 Piston X1 	7 Piston Ring X1 	8 C-Ring X2 	9 Piston Pin X1 	10 Intake Rocker Arm X1
11 Exhaust rocker arm X1 	12 Cover X1 	13 O-Ring X2 	14 M8 x 46 Stud X2 	15 Exhaust pipe gasket X1
16 M8 screw X4 	17 D20xd12.5xt2 mm Gasket X4 	18 M6x10 mm screw X1 	19 Spark plug adapter cover X1 	20 Intake manifold sealing O-ring X1
22 Plate Stopper X1 	23 IN Valve (D24) X2 	23 EX Valve (D21) X2 	24 Valve spring X4 	25 Valve spring lower gasket X4
26 Rocker arm shaft x2 	27 Valve latch X8 	28 Bearing X1 	29 Valve guide X4 	30 Valve oil seal X4

31 Valve spring washer X4 	32 Screw, Tappet bolt X4 	33 Tappet Nut rX4
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- NOTE 1** Some parts are installed in the cylinder head prior to purchase.
- NOTE 2** If the items you received are not the same as shown here, contact your local distributor.

1-2 OPTIONAL ACCESSORIES

1 Ceramic coated cylinder (61mm) 	2 Throttle body (34mm) 	3 Injector (160 c.c.)
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2-1 SPARK PLUG SPECIFICATIONS

NOTE It is recommended to use NGK ER9EHIX, however, some spark plugs may require an adaptor cover (Accessory 19).

2-2 GEAR TIMING ADJUSTMENTS

Figure 1

1. Remove the ignition timing cap. Using the proper tool, rotate the flywheel until the TDC mark (A) is properly aligned with the timing mark (B) on the crank cover.
2. To verify if the engine timing is correct, check if the mark on the camshaft (C) is correctly aligned with the mark on the cylinder head (D).

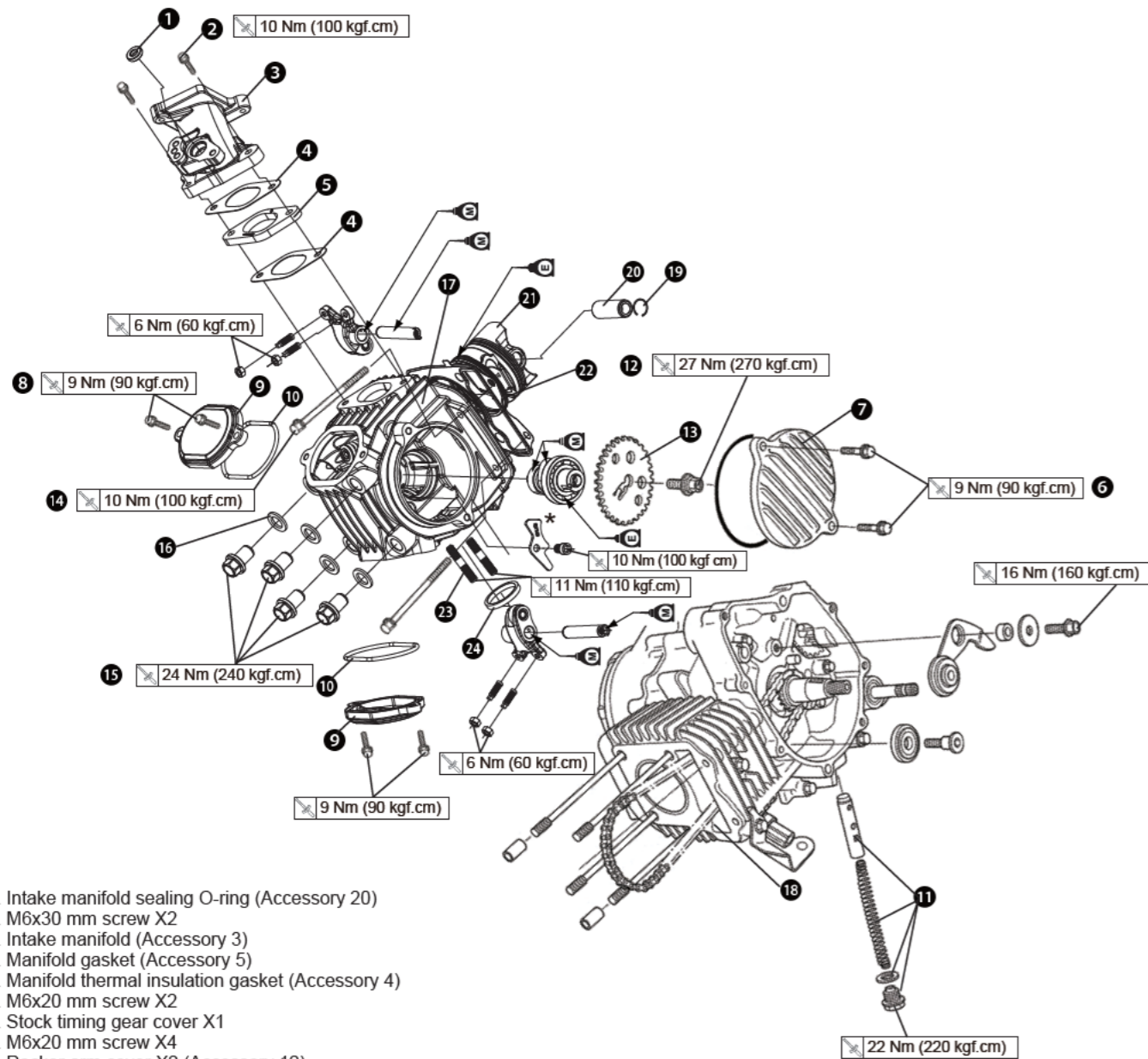
NOTE When installing the camshaft, make sure the chain is always tense.

CAUTION! It is important to adjust the timing gear properly before dismantling.

CAUTION! To avoid changing the setting or causing timing error of the valves, do not attempt to turn the crank while working on the engine.

WARNING! Following the installation of the timing gear and chain, check if the timing marks are still aligned correctly. Before starting the engine, perform a cold test by manually turning the crank to prevent any damages that could occur to the engine.

2-3 ENGINE EXPLODED VIEW



1. Intake manifold sealing O-ring (Accessory 20)
2. M6x30 mm screw X2
3. Intake manifold (Accessory 3)
4. Manifold gasket (Accessory 5)
5. Manifold thermal insulation gasket (Accessory 4)
6. M6x20 mm screw X2
7. Stock timing gear cover X1
8. M6x20 mm screw X4
9. Rocker arm cover X2 (Accessory 12)
10. O-Ring (Accessory 13)
11. M14x10 mm screw X1 + Tensioner guide set
12. M8x16 mm screw X1
13. Stock timing gear X1
14. M6x90 mm screw X2
15. M8 mm screw X4 (Accessory 16)
16. D20xd12.5xt2 mm gasket X4 (Accessory 17)
17. Cylinder head (Accessory 1)
18. Genuine ceramic coated cylinder
19. C-Ring (Accessory 8)
20. Piston Pin (Accessory 9)
21. Piston (Accessory 6)
22. Piston ring (Accessory 7)
23. M8x46 Stud (Accessory 14)
24. Exhaust pipe gasket (Accessory 15)

NOTE * Symbol on camshaft plate stopper must be facing the outside.

NOTE Refer to the image for disassembly. Install according to the reverse order of disassembly. Please refer to the provided tightening torque value of screws.

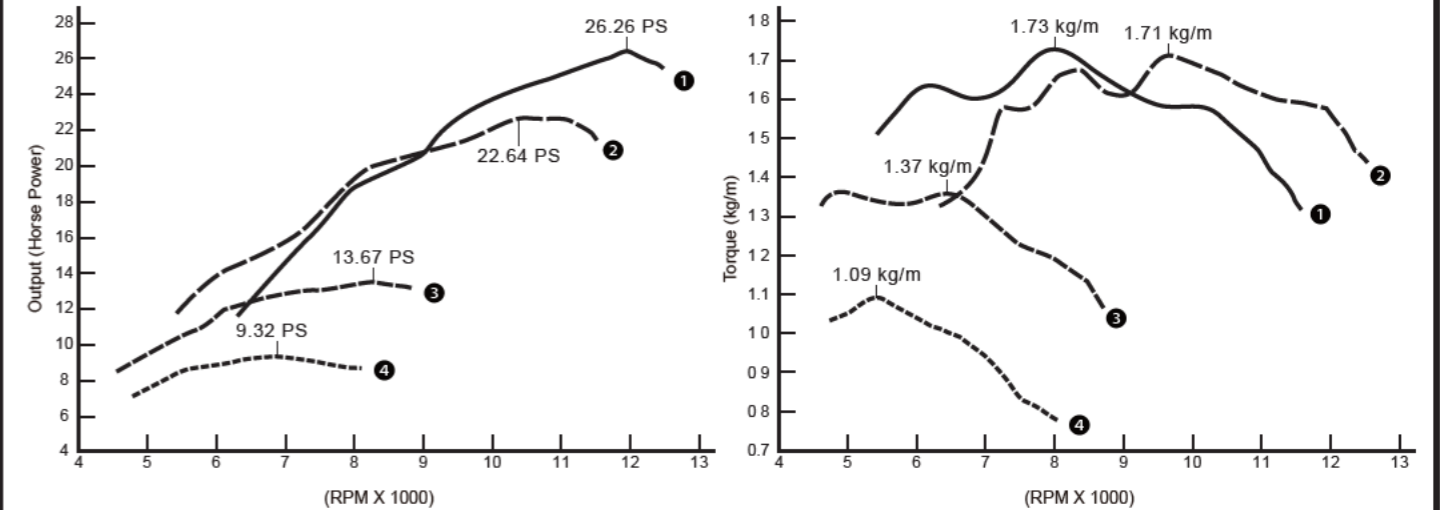
3 CAMSHAFT SPECIFICATIONS



- New rocker arm design to reduce the friction loss and improve the engine response.

DURATION AT1.0mm	VALVE LIFT	INTAKE OPEN/CLOSE	EXHAUST OPEN/CLOSE	LOBE CENTER	RUNNING CLEARANCE
IN-260/ EX-265	IN-8.5mm EX-8.5mm	INO BTDC-55° / INC ABDC-25°	EXO BBDC-27.5° / EXC ATDC-57.5°	IN-105 / EX-105	IN-0.10mm EX-0.17mm

4 POWER CURVE DIAGRAM



NOTE 1 KOSO MSX 4V Cylinder head (M)+KOSO MSX 4V Ceramic coated cylinder (61mm)+KOSO MSX 4V Camshaft+ECU+KOSO MSX Throttle body (34 mm)+KOSO Injector (160 c.c.)+KOSO Intake+After Market Exhaust+Factory standard setting.

NOTE 2 KOSO MSX 4V Cylinder head (M)+KOSO MSX 4V Ceramic coated cylinder (61mm)+KOSO MSX 4V Camshaft+ECU+KOSO MSX Throttle body (34 mm)+KOSO Injector (160 c.c.)+KOSO Hurricane multi air filter (Hi-density sponge)+After Market Exhaust+Factory standard setting.

NOTE 3 Genuine Cylinder head+KOSO MSX 4V Ceramic coated cylinder (61mm)+KOSO MSX 2V Camshaft+KOSO MSX Throttle body (34 mm)+KOSO Hurricane multi air filter (Low-density)+Factory standard setting.

NOTE 4 Stock Engine

NOTE Test results vary with testing environment and weather. This test chart is for reference only.

!!! WARNING !!!

This is an aftermarket part built for racing purposes only.

Koso is not responsible for any damages caused to the parts, vehicle, or to yourself and others.

Engine parts are not under warranty nor is collateral damage or cost of labor, in cases of malfunction.



Tips & Important notes

Read this document carefully and retain for future reference. Any failure to respect those conditions can cause engine problems and severe damages.

THIS IS AN AFTERMARKET PART BUILT FOR RACING PURPOSES ONLY. KOSO IS NOT RESPONSIBLE FOR ANY DAMAGES CAUSED TO THE PARTS, VEHICLE, OR TO YOURSELF AND OTHERS. ENGINE PARTS ARE NOT UNDER WARRANTY NOR ARE COLLATERAL DAMAGE OR COST OF LABOR, IN CASES OF MALFUNCTION.

- Installation of this kit must be done by a professional certified mechanic
 - Instructions must be followed accordingly to assure proper installation
 - **Some modifications or additional parts may be require, refer to table on page 2 of this document.**
- ✓ RPM should be maintained below 12 500 at all time. Over-revolution can cause the valves to hit the piston and damage engine parts.
 - ✓ Optimal Air/Fuel ratio (14.7) is very important. Running too lean can cause the piston to over-heat and damage engine parts.
 - ✓ As these parts are made for racing purpose, keeping the throttle wide-open for a long period can cause the engine to over-heat. It is not recommended to travel long distance on the highway.
 - ✓ Recommended engine oil is Motul 300V 10W40, but customer might have to adjust viscosity (5W / 10W / 15W) depending of the local climate. It is also mandatory to check oil level every ride to make sure that the oil level is correct at all time.
 - ✓ Recommended fuel is "Unleaded premium grade with high octane".
 - ✓ Keep the air filter clean at all time to assure better performance.
 - ✓ Engine maintenance has to be done more frequently when using racing parts.
 - ✓ Timing adjustment is very important to avoid pre-ignition.



Additions / Modifications

	YES mandatory	Suggested not mandatory	Note
When using 170cc big bore kit only			
Customer must change or add following parts :			
Hurricane Air Filter #DK623000		X	
Throttle body #DY623013		X	
Connecting Tube #DM623000		X	
Rubber intake #DM623K10		X	
Intake manifold #DP623001		X	
Injector #DB008160	X		
Injector adapter #DB623000	X		
Camshaft #MM623002		X	
Hi-Flow oil pump #NF623000	X		
Spark Plug #NGK-ER9EHIX		X	
Mini 3 Air/Fuel ratio #BA003214		X	
ECU modification		X	
Addition of a fuel control box		X	
Other	X		Proper exhaust system must be used to prevent re-flow pressure and heat.
When using 170cc big bore kit and 4 valves cylinder head			
Customer must change or add following parts :			
Hurricane Air Filter #DK623000	X		
Throttle body #DY623013	X		
Connecting Tube #DM623000	X		
Rubber intake #DM623K10	X		
Intake manifold #DP623001	X		
Injector #DB008160	X		
Injector adapter #DB623000	X		
Hi-Flow oil pump #NF623000	X		
Spark Plug #NGK-ER9EHIX	X		
Mini 3 Air/Fuel ratio #BA003214		X	
ECU modification ?	X		
Addition of a fuel control box	X		
Other	X		Proper exhaust system must be used to prevent re-flow pressure and heat.