



DOHC HEAD CAMSHAFT SET Instruction Manual

Item No.	: 0 1 - 0 8 - 0 7 0	(10 / 10)
	: 0 1 - 0 8 - 0 7 1	(15 / 15)
	: 0 1 - 0 8 - 0 7 2	(25 / 30)
	: 0 1 - 0 8 - 0 0 1 3	(25 / 25)
	: 0 1 - 0 8 - 0 0 1 4	(30 / 30)

Available for : Motorbikes fitted with a DOHC head

- Thank you for purchasing one of our products.
- We have designed and manufactured this camshaft, making full use of our knowhow for development of Monkey and Gorilla over a period of many years. In using this camshaft, please read the instruction manual carefully to understand what is stated, and follow the instructions, without fail, because there are some noteworthy points as well as a problem of compatibility between each parts.

Please note: Illustrations and photos may vary from actual hardware.

Features

These camshafts are specially treated metal to decrease the friction.

These camshaft are easy to change timing without measuring, use set pin at cam sprocket and camshaft.

Please never fail to read the following before using the parts.

We do not take responsibility for any accident or damage whatsoever arising from the use of the products not in conformity with the instructions in the manual.

We do not take any responsibility for any glitch in parts other than the parts of our make which takes place after installation and use of this product. Please refrain from sudden gunning of the motor, sudden acceleration and sudden revving up, all of which could lead to engine breakage in the worst case as well as damage to the engine.

Always use tachometer to avoid over rev.

To adjust valve clearance, you need shim and special tool.

Caution

The following show the envisioned possibility of injuries and damages to human bodies as a result of conduct disregarding the following cautions.

- Please set the torque at the specified level, using a torque wrench to ensure the right operation.
(Improper setting of the torque could lead to breakage of bolts and tapping section, and coming off of parts.)
- Please work when the engine and the muffler are cool. (Otherwise, you will burn yourself.)
- Please prepare the right tools for the work, and do the work in a proper and right way.
(Otherwise, improper work could cause breakage of parts or injuries to yourself.)

Caution

The following show the envisioned possibility of human deaths or severe injuries to human bodies as a result of conduct disregarding the following cautions.

- Please drive the engine in a well-ventilated place without fail, and do not switch the engine on in a airtight place.
(Otherwise, you will suffer from carbon monoxide poisoning.)
- Please do not place dangerous substances like gasoline, and other flammable objects near the engine and the muffler which have heated up.
(There is a possibility of fire breaking out.)
- Please place the engine horizontally to keep it secure and to ensure the safe work.
(Otherwise, the engine would fall down and you would be hurt.)
- Please always replace damaged parts with new ones.
(The continued use of the damaged parts could lead to breakage of the engine or to an accident.)
- When you find something abnormal with your motorbike while riding down a road, please stop riding immediately and park your motorbike in a safe place. (Otherwise, this could lead to an accident.)
- Please do observe the specified number of revolutions. (Otherwise, over-revving could damage the engine, leading to an accident.)
- Please install, check and perform maintenance of parts correctly according to the instructions in the instruction manual.
(Improper installation, inspection and maintenance could lead to an accident.)
- Those who have no skills or knowledge are required not to do the work. (Improper installation of parts or work could lead to an accident.)

Please be informed that, mainly because of improvement in performance, design changes, and cost increase, the product specifications and prices are subject to change without prior notice.

This manual should be retained for future reference.

~ About the products ~



Item No.	Part Name	Qty	Repair Part	In packs of
01-08-070	Camshaft COMP. IN (10)	1	14100-D4H-T03	1
	Camshaft COMP. EX (10)	1	14200-D4H-T03	1
01-08-071	Camshaft COMP. IN (15)	1	14100-D4H-T13	1
	Camshaft COMP. EX (15)	1	14100-D4H-T13	1
01-08-072	Camshaft COMP. IN (25)	1	14100-D4H-T31	1
	Camshaft COMP. EX (30)	1	14200-D4H-T41	1
01-08-0013	Camshaft COMP. IN (25)	1	14100-D4H-T31	1
	Camshaft COMP. EX (25)	1	14100-D4H-T31	1
01-08-0014	Camshaft COMP. IN (30)	1	14200-D4H-T41	1
	Camshaft COMP. EX (30)	1	14200-D4H-T41	1

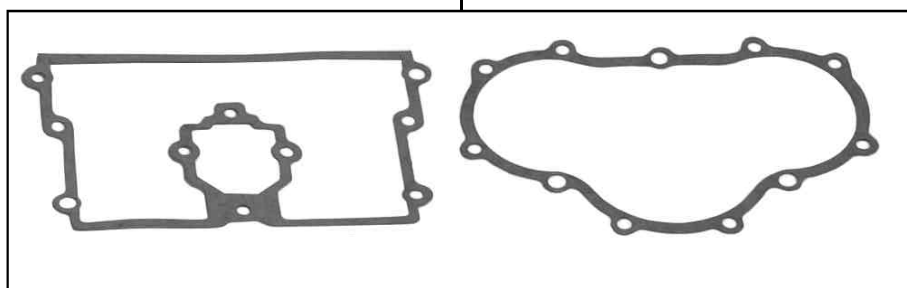
Please order repair parts with the Repair Part Item No.

Without the repair part item No., we may not be able to provide the correct parts.

Some parts are only available as a set. Please order them with the set number.

Gasket set

0 0 0 1 0 2 6 4 : Cylinder head gasket set



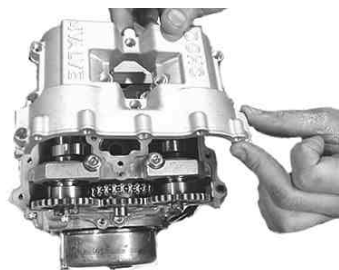
~ Installation Procedures ~

⚠ **Caution** : Always use a torque wrench to screw parts tight and securely to the specified torque.

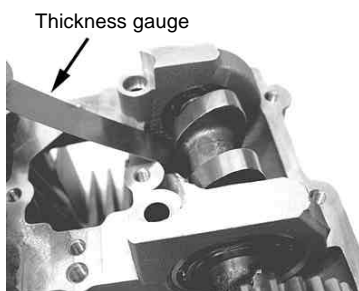
⚠ **Warning** : This Installation Instruction is prepared for those who have acquired basic skill and knowledge. Therefore, those who are technically inexperienced or unskilled are requested not to do the installation work.

Please refer with Cylinder Head installation manual.

Remove L side cover and Head cover.



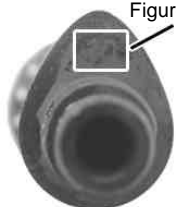
Remove camgear and both IN and EX camshaft.
Install camshaft and adjust valve clearance.



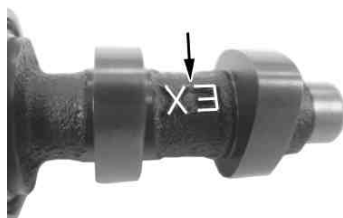
01-08-072 Install as stamped (IN, EX) of the camshaft.



Figures stamped here



Other than 01-08-072, you can install either IN or EX because it is the same design.



If you need adjust clearance,

- Use a valve punner or valve lap to remove valve lifters.
- When you cannot easily remove shims, use a pair of tweezers or magnet.
- (Keep the removed lifters and shims in an orderly way so you can see where to reinstall them back.)
- Be sure to reinstall back the valve lifters at its original place.



How to figure out a size of new shims:

- Wipe off oil adhering to the shims. Measure the thickness of the shims with a micrometer, and take a note of it.

- A : Thickness of the shims to be figured out
- B : The valve clearance measured
- C : The valve clearance to be measured
- D : The thickness of the shim removed





$$A = (B - C) + D$$



The shim is set at 1.20 mm to 2.9 mm, evenly spaced at 0.025 mm apart.

Though the shim is available from us, a Honda's genuine one is also compatible. For its part No., please see the attached sheet.

- * Be sure to check the size of new shims with a micrometer whether or not it is correct.

	
1.80 mm	1.825 mm
	
1.85 mm	1.875 mm
Honda-made genuine shims	

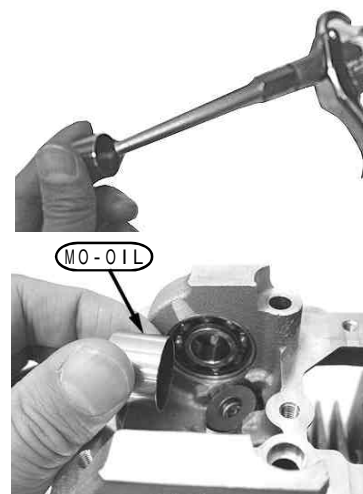
Install valve lifter.

- Attach the new shims to the valve spring retainer.
- Degrease the valve lifter, and blow air into the shim-mounting portion of the valve lifter to clean the portion.
- Apply molybdenum disulfide solution to the sliding surface of the valve lifter, and attach it.

⚠ **Caution** : Be sure to install back the lifter in its original location.

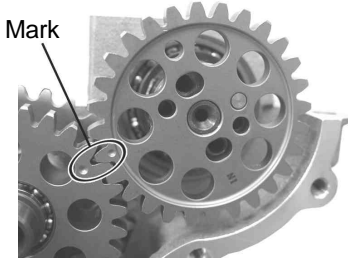
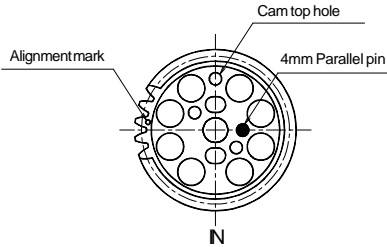
Attach the camshaft, and check the valve clearance with the thickness gauge.

For example, you have got a right valve clearance when you can put in a thickness gauge at 0.15mm but not at 0.18mm.



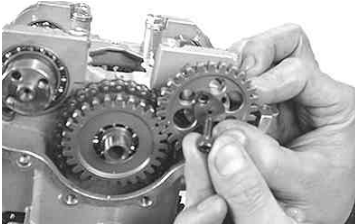
Align the alignment mark (IN mark) on the provided intake cam gear with the one on the center cam gear COMP. Then align the cam top with the top hole on the cam gear. And place the supplied 4mm parallel pin right in the position shown in the figure below and insert it. And install it using the supplied cam gear washer and 5x12 socket cap screw.

⚠ Caution: Never fail to align the alignment marks.



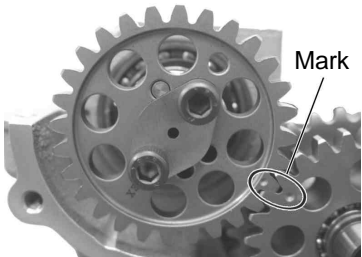
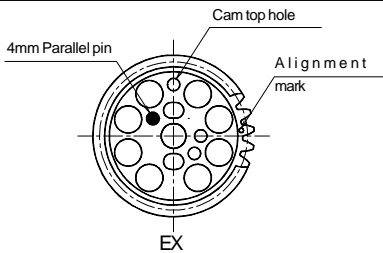
⚠ Caution: Do not place the parallel pin in the wrong place.

⚠ Caution: Check the side of IN or EX.



Just like the intake cam gear, place the exhaust cam gear (EX marked) in the position shown in the figure below to install it.

⚠ Caution: Be sure to align the alignment marks.



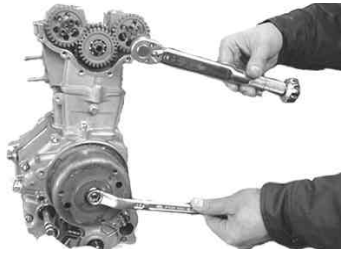
⚠ Caution: Do not place the parallel pin in the wrong place.

⚠ Caution: Check the side of IN or EX.

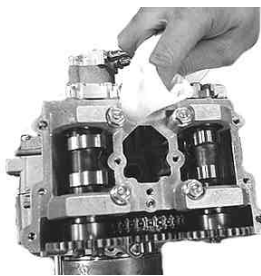
Fix the crank, and tighten the socket cap screw, which holds the cam gear, to the specified torque.

⚠ Caution: Apply the specified torque.

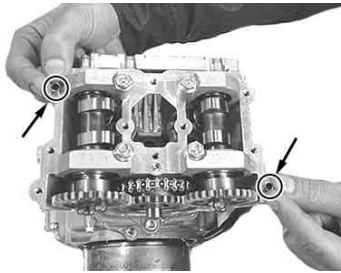
Torque: 10 N · m (1.0 kgf · m)



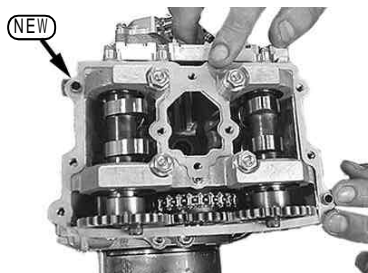
Attach the supplied 6x20 socket cap screw to the side of the cylinder head, and tighten it up. Degrease well the head-cover mounting surface of the cylinder head.



Insert the supplied 7x10 dowel pin to the dowel hole.

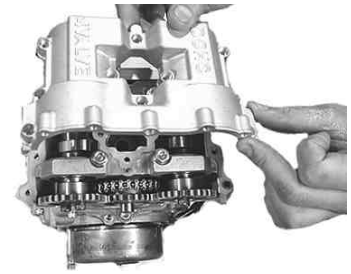


Attach the cylinder head cover gasket.



Cut off the sticking-out cylinder head cover gasket.

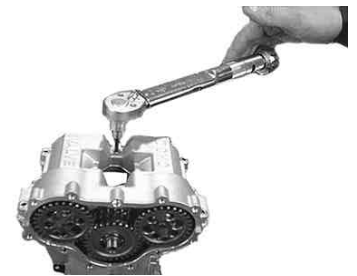
Attach the cylinder head cover to the cylinder head.



Install cylinder head cover with 5x22 screw (apply Alumi-special paste).

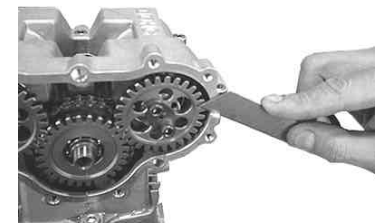
⚠ Caution: Apply the specified torque.

Torque: 6 N · m (0.6 kgf · m)

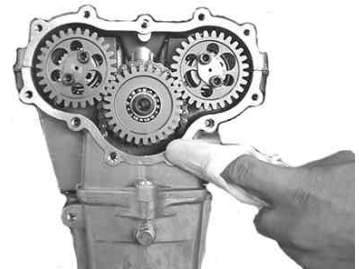


With a cutter knife, cut off the gasket squeezing out of the cylinder head side to make the surface flat.

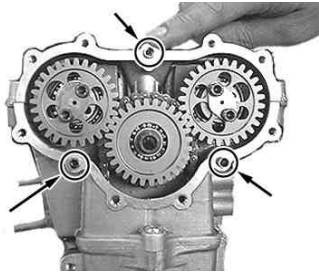
⚠ Caution: Be careful not to scratch the side-cover mating surface.



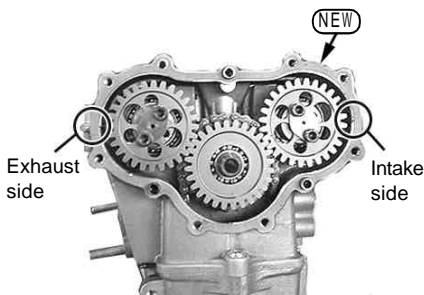
Degrease well the side-cover mounting surface.



Insert the 7x10 dowel pin into the dowel hole on the side-cover mating surface.



Lightly apply liquid gasket to the intake and exhaust sides of the cylinder head cover gasket which was attached to the mating surfaces of the cylinder head cover and cylinder head, and then install the cylinder head side cover gasket.



Attach the cylinder head left side cover to the cylinder head with nine 5x22 and two 5x15 socket cap screws. (See the foto below.) Lightly apply "Alumi Special", the heat-resistant lubricating agent, to the threaded portion of the screws.

⚠ Caution: Be sure to fit the screws in the right positions.



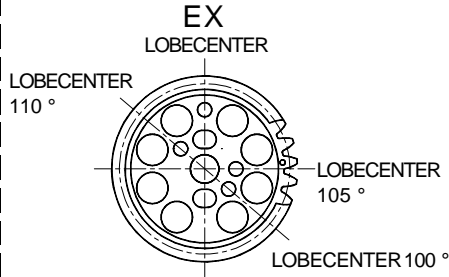
Tighten each socket cap screw diagonally in a few steps to the specified torque.

⚠ Caution: Apply the specified torque.
Torque: 6 N · m (0.6 kgf · m)



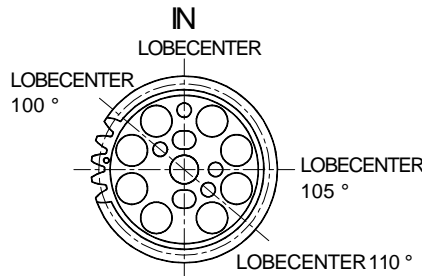
Positions of Cam Gear and Dowel Pin:

Change of the position of a cam gear dowel pin will make it possible to change the valve timing. The lobecenter at each dowel pin position is as per the illustration below. However, as this is just for your reference only, figure out the exact angle with a timing protractor and dial gauge.



Positional relationship between a dowel hole and lobecenter

Crank angle (BTDC)



Positional relationship between a dowel hole and lobecenter

Crank angle (ATDC)

Caution:

Shifting of the pin position from the originally pre-set position will degrade the performance. If you would change the pin position, please always try to do so without changing the cam top position as per the above illustrations. Those who are not familiar with the valve timing are required not to shift the position.

⚠ Caution:

When you adjust the valve timing with the head installed to the motorcycle, valve lifters sometimes fall off at the time you remove the camshaft at the exhaust side. If the valve lifters have fallen off, detach the head cover, and reinstall back the shims and valve lifters at the original positions.

Valve Timing Adjustment:

Set the piston at the top dead center (TDC) position. Attach the timing protractor to the crankshaft, and set the protractor dial at "0" and tighten the nut. Recheck that the piston is at TDC. (In case it is not right on the TDC, adjust it with a pointer.)

Timing protractor : Item No. 00-01-0062

Set a magnet base stand so the dial gauge is vertical to the cylinder head valve lifter surface. At this point, pressing the dial gauge. And set the dial at "0". (Use a special rod so the dial gauge rod does not interfere with the camshaft) Rotate the crank shaft counter clock wise viewed at the left side of the engine, and read the lobecenter.

Honda-Made Genuine Shim List

Part Number	Description	Part Number	Description	Part Number	Description
14901 -KT7-000	Tappet shim (1.200)	14946 -KT7-000	Tappet shim (2.325)	14926 -KT7-013	Tappet shim (1.825)
14902 -KT7-000	Tappet shim (1.225)	14947 -KT7-000	Tappet shim (2.350)	14927 -KT7-013	Tappet shim (1.850)
14903 -KT7-000	Tappet shim (1.250)	14948 -KT7-000	Tappet shim (2.375)	14928 -KT7-013	Tappet shim (1.875)
14904 -KT7-000	Tappet shim (1.275)	14949 -KT7-000	Tappet shim (2.400)	14929 -KT7-013	Tappet shim (1.900)
14905 -KT7-000	Tappet shim (1.300)	14950 -KT7-000	Tappet shim (2.425)	14930 -KT7-013	Tappet shim (1.925)
14906 -KT7-000	Tappet shim (1.325)	14951 -KT7-000	Tappet shim (2.450)	14931 -KT7-013	Tappet shim (1.950)
14907 -KT7-000	Tappet shim (1.350)	14952 -KT7-000	Tappet shim (2.475)	14932 -KT7-013	Tappet shim (1.975)
14908 -KT7-000	Tappet shim (1.375)	14953 -KT7-000	Tappet shim (2.500)	14933 -KT7-013	Tappet shim (2.000)
14909 -KT7-000	Tappet shim (1.400)	14954 -KT7-000	Tappet shim (2.525)	14934 -KT7-013	Tappet shim (2.025)
14910 -KT7-000	Tappet shim (1.425)	14955 -KT7-000	Tappet shim (2.550)	14935 -KT7-013	Tappet shim (2.050)
14911 -KT7-000	Tappet shim (1.450)	14956 -KT7-000	Tappet shim (2.575)	14936 -KT7-013	Tappet shim (2.075)
14912 -KT7-000	Tappet shim (1.475)	14957 -KT7-000	Tappet shim (2.600)	14937 -KT7-013	Tappet shim (2.100)
14913 -KT7-000	Tappet shim (1.500)	14958 -KT7-000	Tappet shim (2.625)	14938 -KT7-013	Tappet shim (2.125)
14914 -KT7-000	Tappet shim (1.525)	14959 -KT7-000	Tappet shim (2.650)	14939 -KT7-013	Tappet shim (2.150)
14915 -KT7-000	Tappet shim (1.550)	14960 -KT7-000	Tappet shim (2.675)	14940 -KT7-013	Tappet shim (2.175)
14916 -KT7-000	Tappet shim (1.575)	14961 -KT7-000	Tappet shim (2.700)	14941 -KT7-013	Tappet shim (2.200)
14917 -KT7-000	Tappet shim (1.600)	14962 -KT7-000	Tappet shim (2.725)	14942 -KT7-013	Tappet shim (2.225)
14918 -KT7-000	Tappet shim (1.625)	14963 -KT7-000	Tappet shim (2.750)	14943 -KT7-013	Tappet shim (2.250)
14919 -KT7-000	Tappet shim (1.650)	14964 -KT7-000	Tappet shim (2.775)	14944 -KT7-013	Tappet shim (2.275)
14920 -KT7-000	Tappet shim (1.675)	14965 -KT7-000	Tappet shim (2.800)	14945 -KT7-013	Tappet shim (2.300)
14921 -KT7-000	Tappet shim (1.700)	14901 -KT7-013	Tappet shim (1.200)	14946 -KT7-013	Tappet shim (2.325)
14922 -KT7-000	Tappet shim (1.725)	14902 -KT7-013	Tappet shim (1.225)	14947 -KT7-013	Tappet shim (2.350)
14923 -KT7-000	Tappet shim (1.750)	14903 -KT7-013	Tappet shim (1.250)	14948 -KT7-013	Tappet shim (2.375)
14924 -KT7-000	Tappet shim (1.775)	14904 -KT7-013	Tappet shim (1.275)	14949 -KT7-013	Tappet shim (2.400)
14925 -KT7-000	Tappet shim (1.800)	14905 -KT7-013	Tappet shim (1.300)	14950 -KT7-013	Tappet shim (2.425)
14926 -KT7-000	Tappet shim (1.825)	14906 -KT7-013	Tappet shim (1.325)	14951 -KT7-013	Tappet shim (2.450)
14927 -KT7-000	Tappet shim (1.850)	14907 -KT7-013	Tappet shim (1.350)	14952 -KT7-013	Tappet shim (2.475)
14928 -KT7-000	Tappet shim (1.875)	14908 -KT7-013	Tappet shim (1.375)	14953 -KT7-013	Tappet shim (2.500)
14929 -KT7-000	Tappet shim (1.900)	14909 -KT7-013	Tappet shim (1.400)	14954 -KT7-013	Tappet shim (2.525)
14930 -KT7-000	Tappet shim (1.925)	14910 -KT7-013	Tappet shim (1.425)	14955 -KT7-013	Tappet shim (2.550)
14931 -KT7-000	Tappet shim (1.950)	14911 -KT7-013	Tappet shim (1.450)	14956 -KT7-013	Tappet shim (2.575)
14932 -KT7-000	Tappet shim (1.975)	14912 -KT7-013	Tappet shim (1.475)	14957 -KT7-013	Tappet shim (2.600)
14933 -KT7-000	Tappet shim (2.000)	14913 -KT7-013	Tappet shim (1.500)	14958 -KT7-013	Tappet shim (2.625)
14934 -KT7-000	Tappet shim (2.025)	14914 -KT7-013	Tappet shim (1.525)	14959 -KT7-013	Tappet shim (2.650)
14935 -KT7-000	Tappet shim (2.050)	14915 -KT7-013	Tappet shim (1.550)	14960 -KT7-013	Tappet shim (2.675)
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14938 -KT7-000	Tappet shim (2.125)	14918 -KT7-013	Tappet shim (1.625)	14963 -KT7-013	Tappet shim (2.750)
14939 -KT7-000	Tappet shim (2.150)	14919 -KT7-013	Tappet shim (1.650)	14964 -KT7-013	Tappet shim (2.775)
14940 -KT7-000	Tappet shim (2.175)	14920 -KT7-013	Tappet shim (1.675)	14965 -KT7-013	Tappet shim (2.800)
14941 -KT7-000	Tappet shim (2.200)	14921 -KT7-013	Tappet shim (1.700)	14966 -KT7-013	Tappet shim (2.825)
14942 -KT7-000	Tappet shim (2.225)	14922 -KT7-013	Tappet shim (1.725)	14967 -KT7-013	Tappet shim (2.850)
14943 -KT7-000	Tappet shim (2.250)	14923 -KT7-013	Tappet shim (1.750)	14968 -KT7-013	Tappet shim (2.875)
14944 -KT7-000	Tappet shim (2.275)	14924 -KT7-013	Tappet shim (1.775)	14969 -KT7-013	Tappet shim (2.900)
14945 -KT7-000	Tappet shim (2.300)	14925 -KT7-013	Tappet shim (1.800)		