ZT1P52MI

Engine maintenance manual

2023-04-01

Foreword

All the materials, illustrations, photos, etc. Collected in this manual are compiled according to the latest product of ZT1P52MI Euro IV. However, due to continuous improvement of products and changes in other aspects, there may be some inconsistencies between your motorcycle and this manual. For parts upgrades, please refer to the part codes on the official website of ZONTES which will not be listed in detail in this manual; if the names of parts in this manual are inconsistent with the official website of ZONTES, the official website of ZONTES shall prevail.

If some contents of this manual are insufficient, please refer to the " driver's manual" attached to the motorcycle. You can download the latest version of the driver's manual as a PDF in the corresponding model introduction on the ZONTES official website.

User Notice

This manual is compiled by Guangdong TAYO Motorcycle Technology Co., Ltd. And is used to guide dealers or service personnel. This manual cannot provide more detailed knowledge about motorcycles, and is only for reference for maintenance. If you do not have the corresponding knowledge such as electrician, machine repair, etc., improper assembly or maintenance failure may occur during repair.

If you need to clean or wash the body parts of this motorcycle, you should use neutral car wash liquid or tap water or diesel oil, kerosene, etc. Acidic or alkaline car wash liquid will cause irreversible corrosion to the surface paint, electroplated surface, anodized surface, etc. Of parts; gasoline will cause premature aging or hardening of sealants, gaskets, rubber parts, etc., reducing the service life. It should be wiped with a non-woven cloth that will not leave residues. Ordinary rags may leave rags or wool that will affect assembly or cause other adverse effects.

Our company tries to update this manual in a timely manner after product changes.

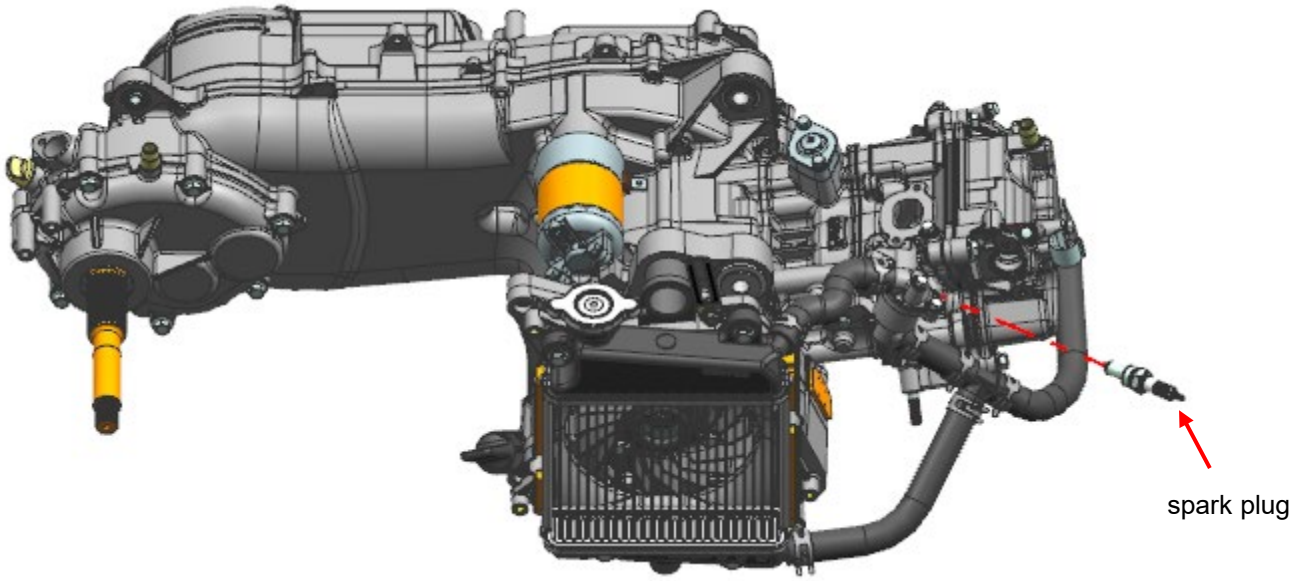
The following are the meanings of the icons marked in this manual:

	Failure to comply will result in personal injury or death of the driver or maintenance personnel ; or serious damage to spare parts , shortened service life, etc.
	Failure to comply may result in personal injury or death of the driver or maintenance personnel ; or damage to spare parts , abnormality, etc.
	Failure to follow the warnings will result in personal injury to the driver or maintenance personnel ; or matters requiring special attention during disassembly
	Indicates that there is a requirement for torque
	Indicates that the part needs to be replaced after disassembly
	Indicates that the location needs to be measured

Table of contents

Spark plug

System components



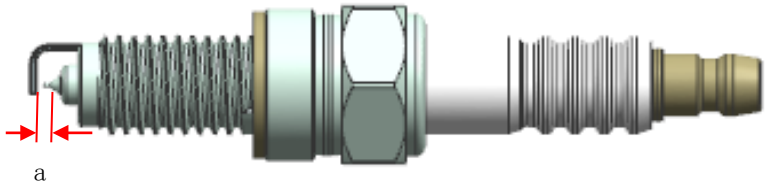
Remove the spark plug

1. Use the special spark plug socket -16# or the extended socket head -16# to remove the spark plug counterclockwise.

Check spark plugs

1. Check the thread of the spark plug and the center electrode. If there is any damage or deformation, replace the spark plug.
2. Use a feeler gauge to measure the gap a of the spark plug, if it exceeds the range, replace the spark plug.

Note: the standard value of spark plug gap is 0.7-0.9mm.



Install spark plugs

1. Screw the spark plug into the cylinder head, put on the spark plug special sleeve -16# or the extended sleeve head -16#, and pre-tighten it with a torque wrench to fix the torque, the torque is 14±1 N.m.

Cylinder compression test

1. Start the engine, warm up the engine to normal operating temperature, and then turn off the engine.
2. Remove the dust near the spark plug and remove the spark plug.
3. Install the cylinder pressure gauge.
4. Fully open the throttle, press the start switch, and use the starter motor to drive the crankshaft and piston to run until the cylinder pressure gauge reading stops rising (starter motor running time ≤ 15s).

Engine speed: 420-510r/min

Compression pressure: **440-550kpa (4.49-5.61 kgf/cm ^{2}, 63.8-79.8 psi)**

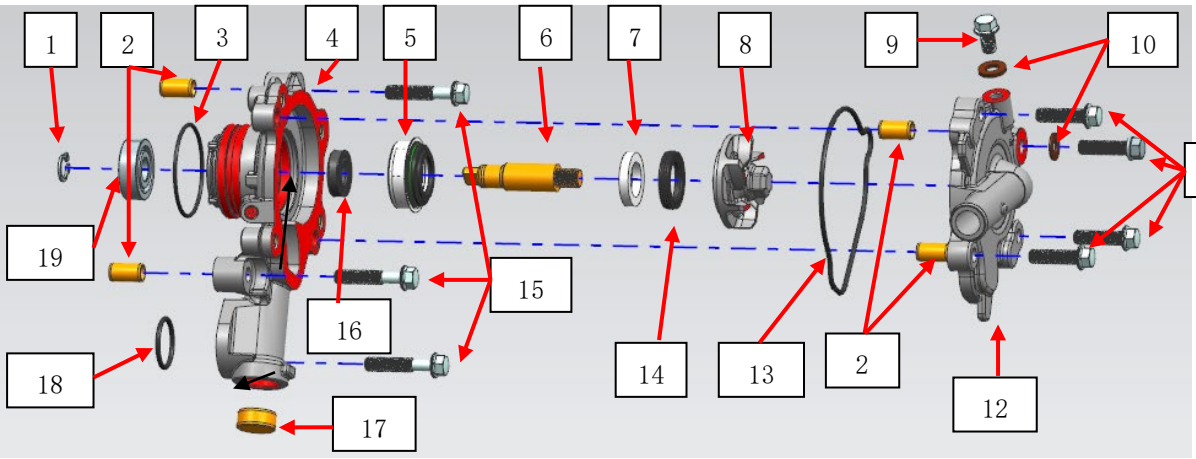
① if the measured cylinder pressure is larger than the normal value, it means that there is carbon deposit on the top of the piston or the wall of the cylinder.

②if the measured cylinder pressure is lower than the normal value, pour a small amount of clean engine oil from the spark plug, turn the crankshaft a few times, so that the piston ring and cylinder wall are evenly covered with oil film, and retest the cylinder pressure. If the cylinder pressure measured after pouring oil is greater than the last cylinder pressure value, please dismantle the machine and check the piston and piston ring.

5. Use the spark plug tool to install the spark plug in place and tighten it with a fixed torque (fixed torque: 14±1 N.m).

Water pump

System components



No.	Part name	Quantity	No.	Part name	Quantity
1	Gb894.1 shaft retaining ring ϕ10 (oxidized black)	1	11	M6×22 hexagon flange fully threaded bolts (grade 8.8/zinc)	4
2	Φ8×14 hollow positioning pin	4	12	ZT1P58MJ water pump cover	1
3	Φ36×1.9 acrylic O-ring	1	13	ZT1P58MJ water pump cover sealing ring	1
4	ZT1P58MJ water pump housing	1	14	Water seal moving ring rubber	1
5	Water seal static ring	1	15	M6×30 hex flange bolts	3
6	ZT1P58MJ water pump shaft	1	16	Fb12×20×5 fluorine rubber oil seal	1
7	Water seal moving ring ceramics	1	17	Ø 16.5×7.5 water plug	1
8	ZT1P58MJ water pump blade	1	18	18.2×2.4 EPDM rubber O-ring	1
9	M6×10 top pin bolt (zinc)	1	19	Gb/t 276-6000-p5c3 deep groove ball bearings	1
10	6.3×12×1.6 copper gasket	2			

Assembly

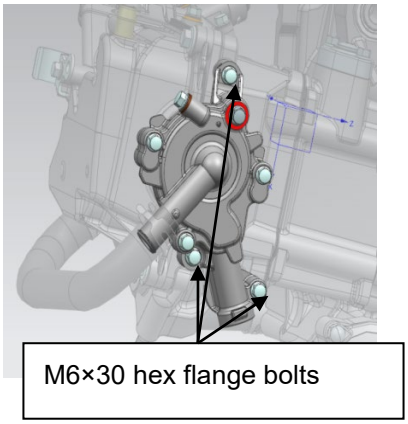
1. Remove 3 m6×30 hexagonal flange bolts counterclockwise with a torque wrench (or air batch) and an extended outer hexagon socket -8#, remove the water pump from the engine, and then remove the ϕ36×1.9 acrylic o-type ring, 18.2×2.4 EPDM O-ring and two ϕ8×14 hollow positioning pins.

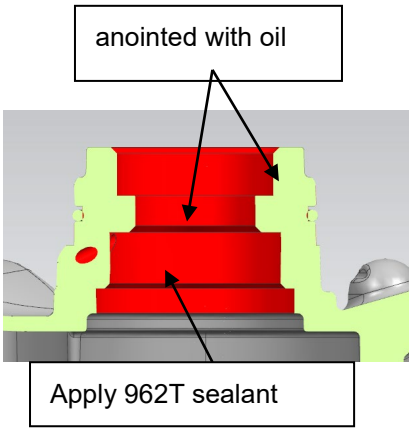
2. Use a torque wrench (or air batch) and an extended outer hexagon socket -8# Assembly 4 m6×22 hexagonal flange full-threaded bolts and 1 m6×10 top pin bolt (zinc) on the water pump cover counterclockwise. Zinc), remove the water pump cover, water pump cover sealing ring, 2 copper gaskets and 2 ϕ8×14 hollow positioning pins.

3. Use a 12# wrench to rotate counterclockwise to loosen and remove the water pump blade, and take out the water seal moving ring ceramic and water seal moving ring rubber.

Take out the water pump shaft, use a flat-blade screwdriver to extend from the bearing hole until it contacts the water seal, and then tap it slowly to knock out the water seal.

Use a flathead screwdriver to pry out the oil seal, and then knock out the bearing to complete the disassembly of the water pump. **(note: when the water pump is running normally without failure, it is not recommended Assembly the water pump, internal bearings, oil seals, and water seals.)**





Inspection

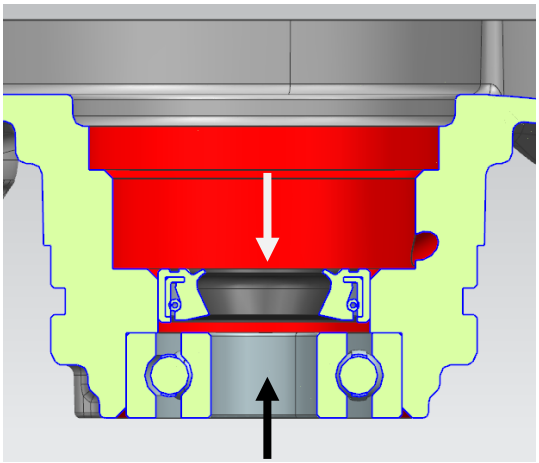
1. Check the water pump cover ring and 18.2×2.4 O-ring on the water pump cover . If there are any defects such as wear and edge trimming, replace the O-ring with a new one to prevent water leakage due to poor sealing .
2. Check whether the threads of the water pump blades and the water pump shaft are slippery.
3. Check the water pump shaft and blades for cracks, damage, wear, etc. If they are defective, replace them with new ones.

Install

1. Take a new fb12×20×5 fluorine rubber oil seal and press it to the position shown in the figure below. After installation, measure the depth to confirm whether it is installed in place.

Remarks: ① apply engine oil to the oil seal installation hole and install the oil seal.

②fb12×20×5 fluorine rubber oil seal pressing depth: the distance from the end face of the oil seal to the joint surface of the pump cover is 23.4 (-0.2,0) mm or the end face is even.



2. Check whether the bearing rotates smoothly. If the bearing rotates stuck, replace it with a new one. After oiling the bearing hole, use a special pressure head to press the bearing into place.

Note: bearing model: gb276—6000/p5c3 deep groove ball bearing.

3. Take a new water seal, check to make sure that the surface of the water seal is clean and free of debris, apply 962t bowl-shaped plug sealant on the hole where the water seal is installed, and press the water seal in place with the special pressure head for installing the water seal.

4. Put the water-sealed moving ring rubber into the inner hole of the water pump blade; put the water-sealed moving ring into the inner ring of the water-sealed moving ring rubber (the crossed side faces inward, and the smooth side faces outward), and apply an appropriate amount of silicone oil on the smooth surface of the moving ring;
Screw the water pump impeller assembly into the water pump shaft (apply thread glue), lock it with a 12# sleeve, and correct the torque with a torque wrench , torque: 20±1.5 N.m.

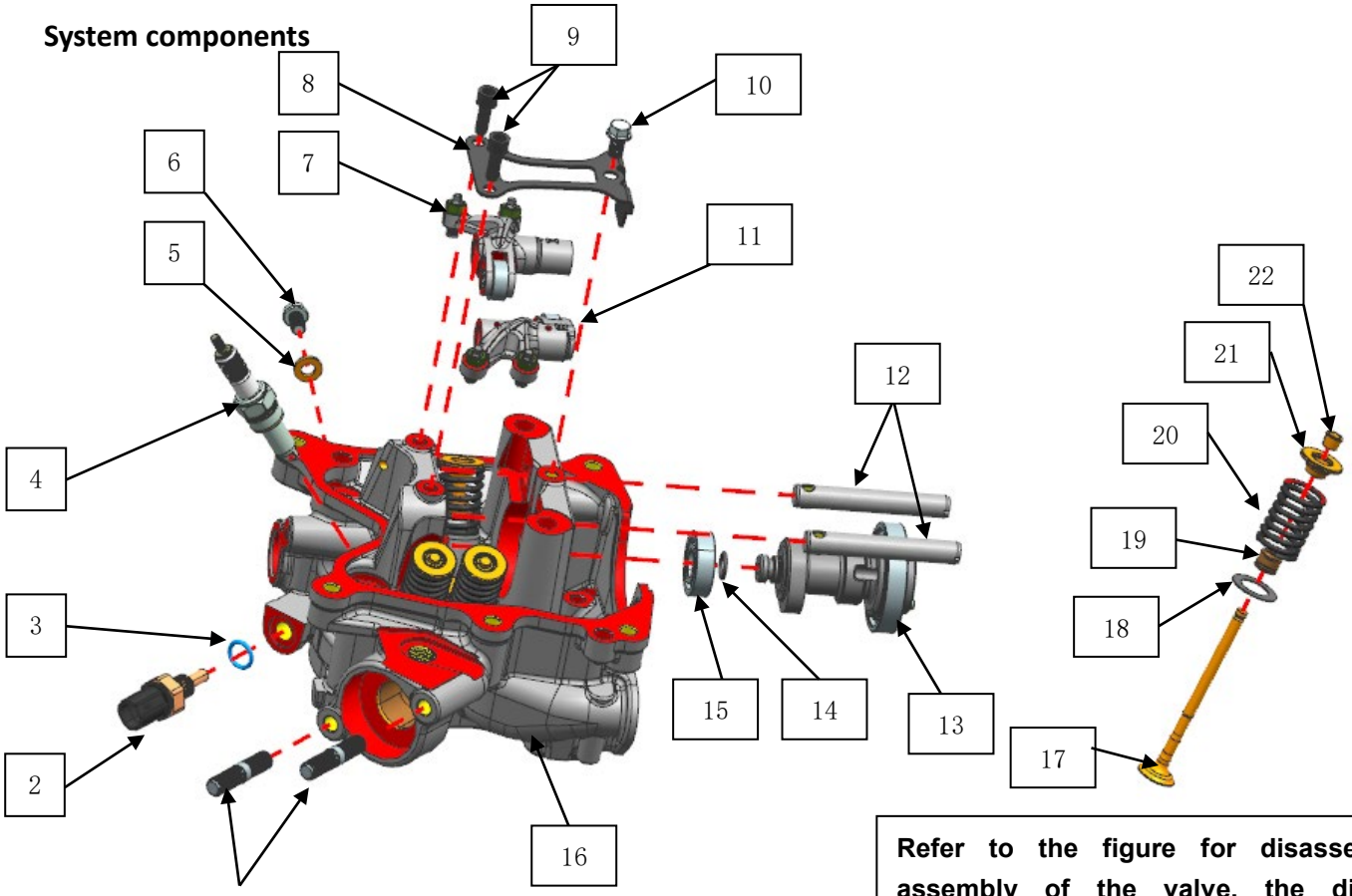
5. Apply a small amount of engine oil to the water pump shaft and put it into the water pump casing, install it in place and install the retaining ring for the shaft. (note: apply a proper amount of water-soluble silicone oil on the static ring and moving ring of the water seal)

6. Take two ϕ8×14 hollow positioning pins and put them into the corresponding holes, put the water pump cover sealing ring on the water pump cover groove (if the O-ring is trimmed or worn, replace it with a new one), and finally take 4 m6× 22 full-threaded bolts on the hexagonal flange surface (grade 8.8/zinc) , one of which is inserted into a 6.3×12×1.6 copper gasket, and tightened clockwise with a torque wrench (or air batch) and an extended outer hexagonal sleeve -8# bolt. Torque standard: 12±1.5N·m.

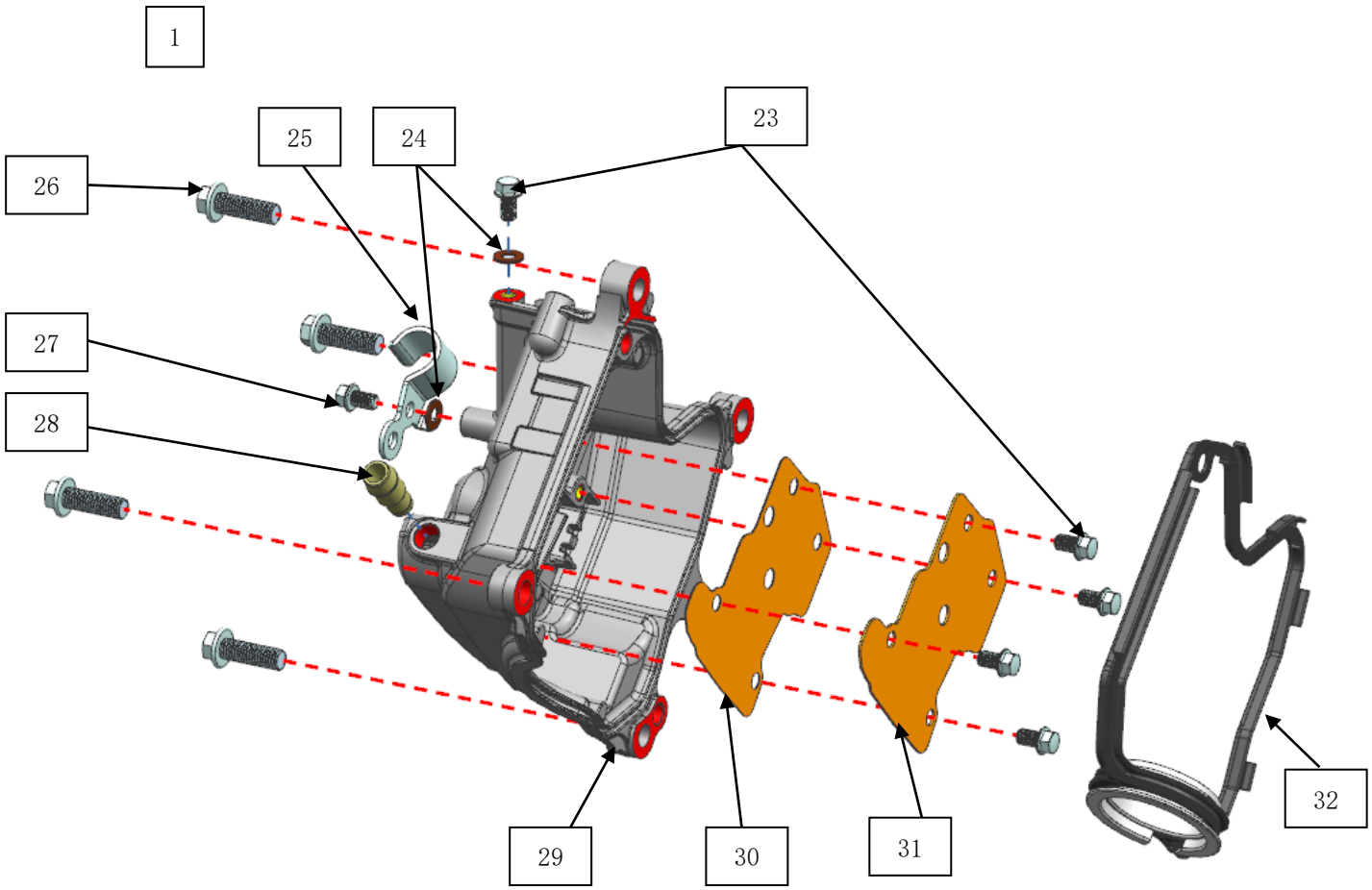
7. Take a m6×10 top pin bolt (zinc), insert a 6.3×12×1.6 copper gasket, screw the bolt into the threaded hole at the corresponding position, torque wrench (or wind batch) and extend the outer hexagonal sleeve cylinder-8# tighten the bolts clockwise. Torque standard: 10±1 N·m. **(note: the copper gasket is a one-time consumable, and a new gasket is required for installation)**
8. Install the ϕ36×1.9 acrylate O-ring and the 18.2×2.4 EPDM O-ring into the corresponding positions.

Cylinder head cover, cylinder head

System components



Refer to the figure for disassembly and assembly of the valve, the disassembly structure of the intake valve and exhaust valve is the same.



Parts information

No.	Name	Quantity	Name
1	Aym8—m8×38 double-headed 10.9 grade stud (zinc)	2	Tool: stud socket m8fixed torque: 20±2 N.m Thread fastening glue
2	Water and oil shared sensor	1	Tools: 17# socket and fixed torque wrench fixed torque: 14±1N.m
3	9×2 EPDM rubber O-ring	1	
4	Cr8ei spark plug (protruding type)	1	Tool: 16# spark plug socket fixed torque: 14 ± 1 N.m
5	6.3×12×1.6 copper gasket	1	
6	M6×10 top pin bolt (zinc)	1	Tool: t-sleeve-8# fixed torque: 10±1 N.m
7	ZT1P58MJ intake rocker arm subassembly—b	1	
8	ZT1P58MJ camshaft bearing pressure plate	1	
9	M5×15-5# hexagon socket head screw	2	Apply thread glue, tool: 5# inner hexagon fixed torque: 7±1 N.m
10	M6×10 top pin bolt (zinc)	1	Apply thread glue, tool: t-sleeve-8# fixed torque: 10±1 N.m
11	ZT1P58MJ exhaust rocker arm subassembly—b	1	
12	ZT1P58MJ intake and exhaust rocker shaft	2	
13	ZT1P58MJ camshaft sub-component-b	1	
14	8.8×1.9 fluorine rubber O-ring	1	
15	Gb276-6001/p5c3 deep groove ball bearings (nitrided)	1	

16	ZT1P58MJ cylinder head	1	
17	ZT1P58MJvalve	Into 2 row 2	
18	13.2×20.8×0.5 valve spring seat	4	
19	Φ 5.0 valve rod diameter oil seal	4	
20	ZT1P58MJ exhaust valve spring	4	
Twenty one	ZT1P58MJ valve spring bearing plate	4	
Twenty two	ZT1P58MJ valve lock clip	8	
Twenty three	M6×10 top pin bolt (zinc)	5	Tool: t-sleeve-8# fixed torque: 10±1N.m
Twenty four	6.3×12×1.6 copper gasket	2	
25	Zt1p72mn cylinder head cover tubing clamp	1	
26	Gb16674m8×25 bolt	4	Tool: t-sleeve-10# fixed torque: 20±2.5 N.m
27	M6×10 top pin bolt (zinc)	1	Tool: t-sleeve-8# fixed torque: 10±1N.m
28	ZT1P58MJ cylinder head cover air balance tube	1	
29	ZT1P58MJ cylinder head cover	1	
30	ZT1P58MJ cylinder head cover labyrinth cover gasket	1	
31	ZT1P58MJ cylinder head cover labyrinth cover plate	1	
32	ZT1P58MJ cylinder head cover rubber pad subassembly	1	

Cylinder head cover

Assembly

Gb16674 M8×25 bolts diagonally at t-rod -10#, and remove the cylinder head cover, cylinder head cover rubber pad, and ϕ 8×14 hollow positioning pin in sequence.

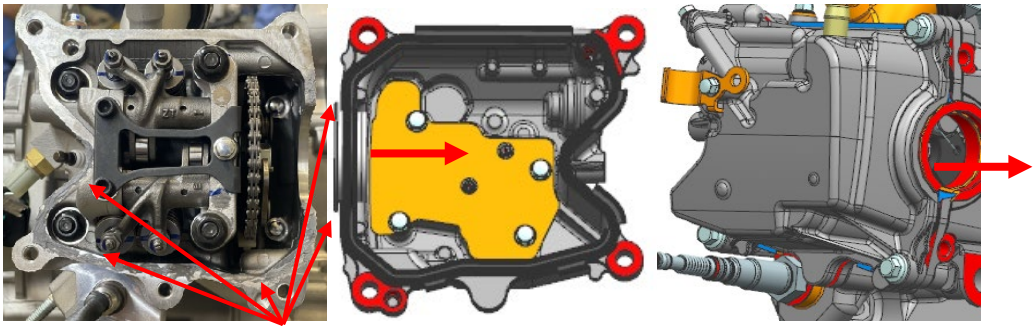
Note: when removing the cylinder head cover, the water pump needs to be removed first.

Inspection

1. Check that the cylinder head cover rubber pad on the cylinder head cover is not scratched or damaged. If it is scratched or damaged, it needs to be replaced.

Install

1. As shown in the figure, after removing the plane sealant, oil stains and dust on the joint surface of the cylinder head and the cylinder head cover, apply an appropriate amount of plane sealant on the position shown in the figure. Check the cylinder head cover sealing ring on the cylinder head cover. After confirming that the installation is in place, install the cylinder head cover assembly to the corresponding position of the cylinder head. The rubber pad of the cylinder head cover should not be misplaced. Use four m8×25 bolts to secure the cylinder head cover is pre-tightened and tightened with a fixed torque, 20 ± 2.5N.m.



apply sealant

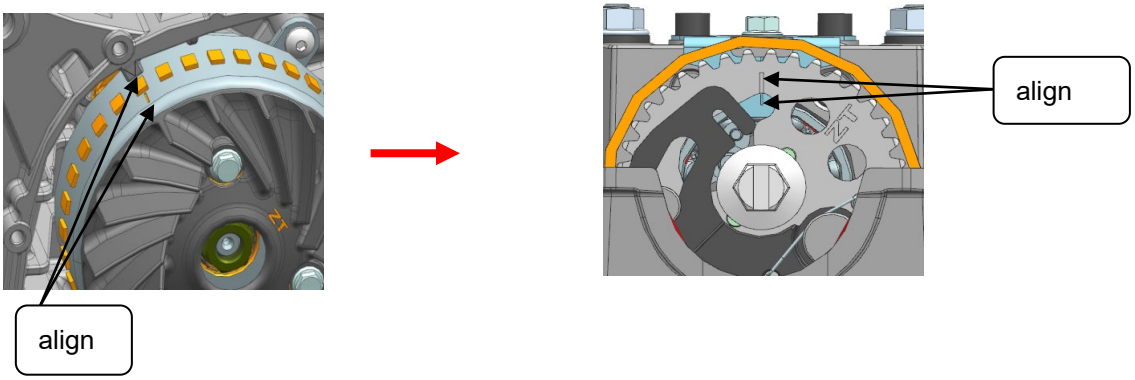
Cylinder head

Assembly

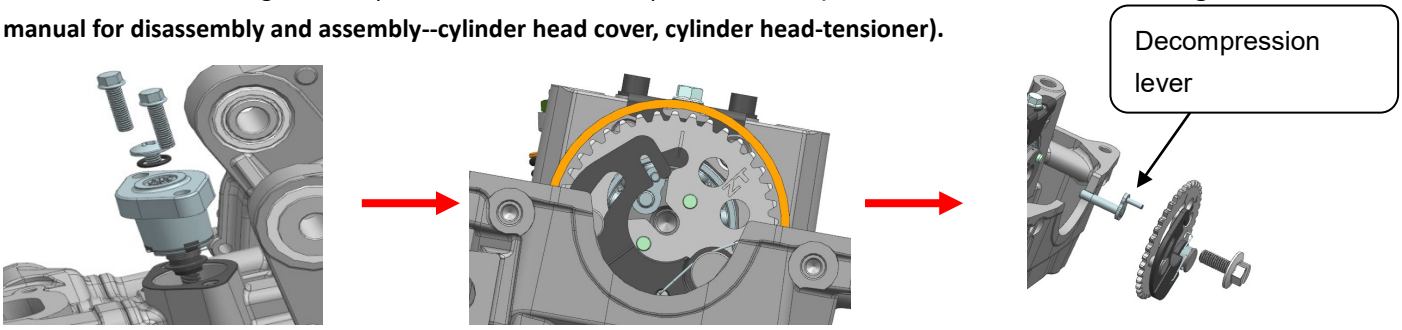
1. Use a t-shaped sleeve -8# to remove the thermostat bolts, remove the thermostat, and remove the radiator **and** fan **case cover (refer to the ZT1P52MI engine maintenance manual for disassembly and assembly - thermostat, radiator, fan case cover).**

2. Put the 17#-t-shaped sleeve on the lock bolt of the magneto rotor, and then turn the crankshaft clockwise so that the marking line at point t on the flywheel aligns with the arrow position in the figure. At the same time, the top dead center marking line on the timing driven sprocket should also be aligned with the marking line on the camshaft bearing pressure plate.

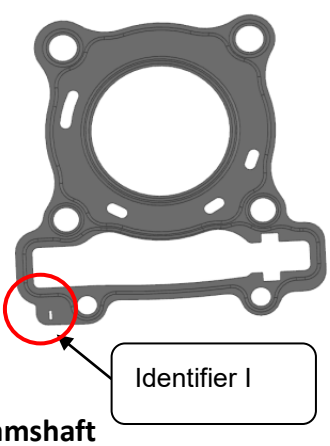
Note: when turning the flywheel, once the marking line at point t turns over the marking line, it cannot be rotated in the opposite direction. It is necessary to turn the crankshaft clockwise two times again to re-align the point! ! !

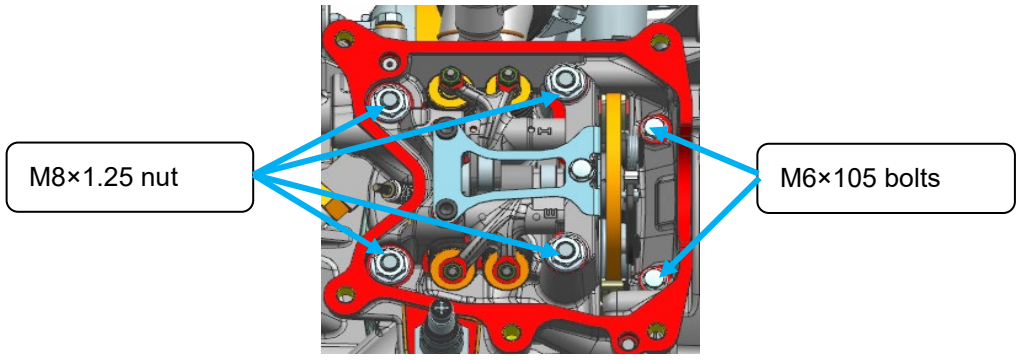


3. As shown in the picture, remove the tensioner with t bar-8#, remove the camshaft bolt with the jackhammer + sleeve head 14#, remove the timing driven sprocket, and the decompression lever **(tensioner refer to ZT1P52MI engine maintenance manual for disassembly and assembly--cylinder head cover, cylinder head-tensioner).**



4. As shown in the picture, first use t-bar-8# to remove 2 pieces of m6×105 hexagonal flange bolts on the side of the cylinder head, and then use t-bar-12# to remove 4 pieces of m8×1.25 lock nuts on the opposite corners of the cylinder head, take off the cylinder head, cylinder head gasket and positioning pin **(note: the removed cylinder head gasket cannot be used again)** .

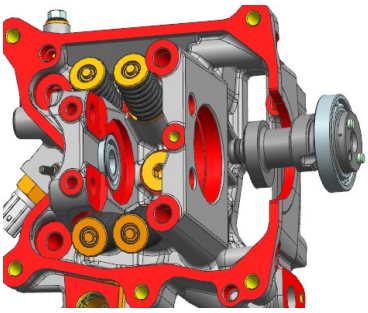




Camshaft

Assembly

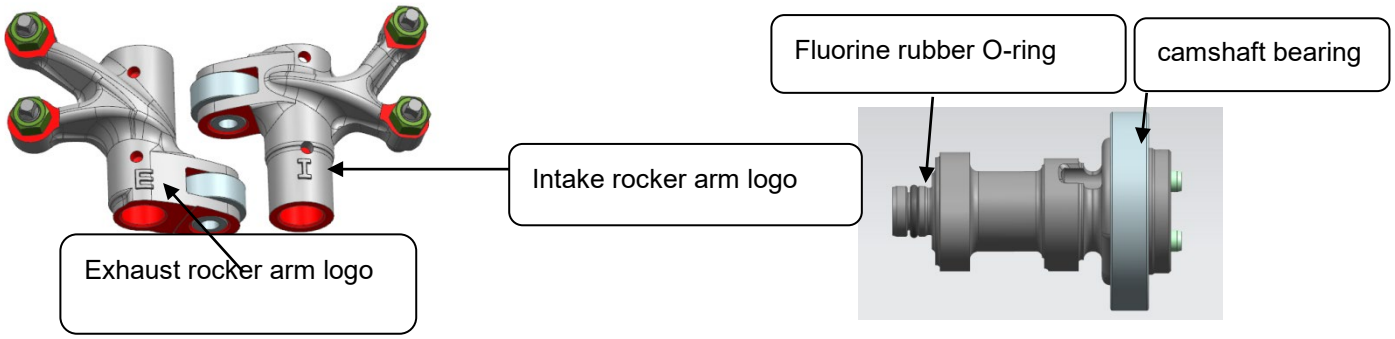
1. Remove the cylinder head pressure plate bolts, and take out the cylinder head pressure plate, rocker shaft, intake and exhaust rocker arms, and camshaft.



2. Use the valve spring removal and installation tool to remove the valve lock clip (do not over compress the valve spring). After taking out the valve lock clip, remove the valve spring retainer, valve spring, valve stem diameter oil seal (the **removed valve stem diameter oil seal cannot be used again)**, valve spring seat, and valve in sequence.

Inspection

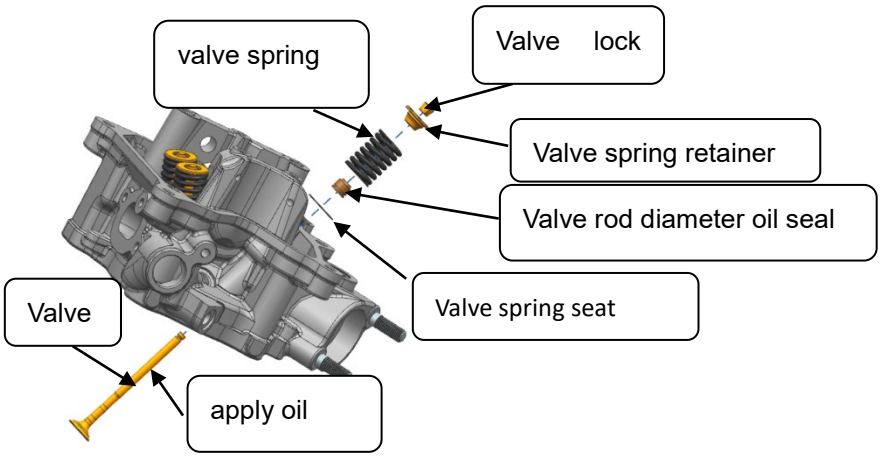
1. Check that there is no bump or scratch on the joint surface of the cylinder head;
2. Check that there is no abnormal wear on the intake and exhaust rocker shafts;
3. Check that the intake rocker arm (mark I) and the exhaust rocker arm (mark E) have no abnormal wear, and the rollers of the intake and exhaust rocker arms rotate smoothly without abnormal noise;
4. Check that the intake and exhaust springs have no cracks or abnormal wear;
5. Check whether the camshaft is abnormally worn, and the fluorine rubber O-ring is not damaged or trimmed. Turn the camshaft bearing by hand, and it should rotate smoothly without abnormal noise.

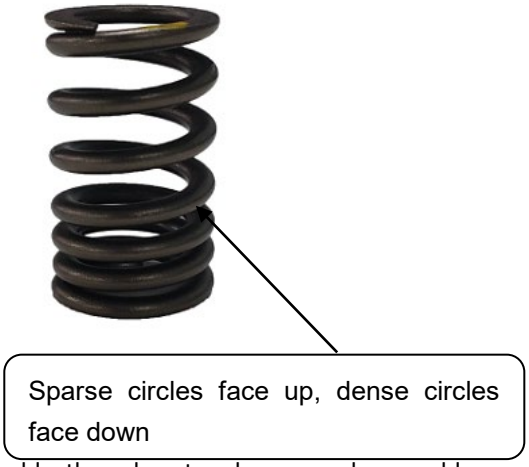


6. Check whether the diameter of the valve stem is abnormally worn, bent or ablated, and whether the valve can move smoothly in the valve guide; check whether the surface of the valve seat is abnormally worn or ablated; ablation;
7. Check the cylinder head bearing. The inner ring of the bearing should rotate smoothly without any stagnation. If the inner ring of the bearing is stuck, please replace the cylinder head bearing.

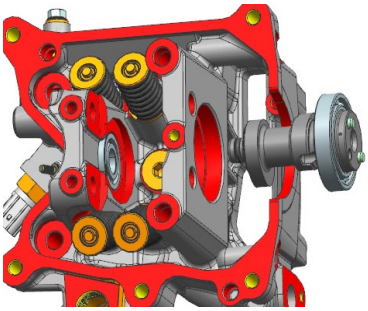
Install

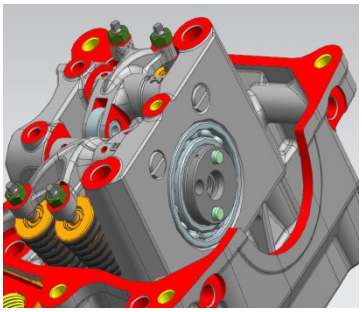
1. As shown in the figure, install the valve (apply oil), valve spring seat, valve stem diameter oil seal (press in place after installation), valve spring, valve spring retainer, and valve lock clip (install with valve installation tool) in sequence (**note: remove dust and foreign matter from the valve seat surface and cylinder head seat surface. When installing the valve spring, the sparse ring faces upward and the dense ring faces downward**).



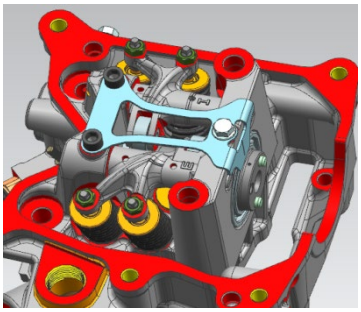


2. Install the camshaft (O-ring needs to be installed), the intake rocker arm sub-assembly, the exhaust rocker arm sub-assembly, and the intake and exhaust rocker arm shaft in order (rotate the rocker arm shaft so that the slot is in a horizontal position). **(note: O-rings cannot be missed on the camshaft)**





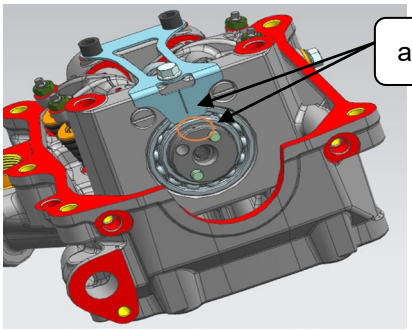
3. As shown in the figure, install the camshaft bearing pressure plate, apply an appropriate amount of thread fastening glue on the surface of 1 m6x10 and 2 m5x15 bolts, after screwing in, pre-tighten and set the torque, the torque is: m6 bolt torque 10±1n. M , m5 bolt torque 7±1N.m .

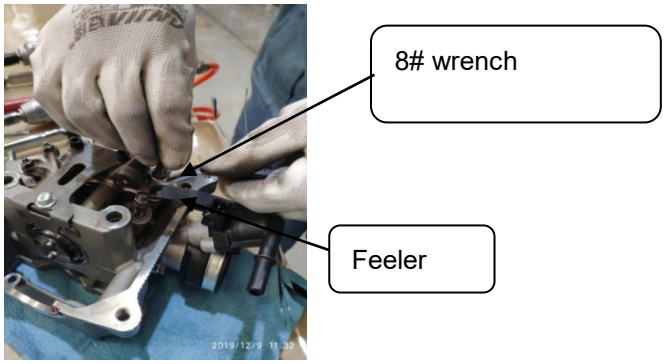


Valve clearance

1. As shown in the figure, adjust the valve clearance: align the camshaft groove point with the scale line of the camshaft bearing pressure plate, insert the feeler gauge between the valve adjustment bolt and the end face of the valve stem, pull the feeler gauge by hand, and take out the plug after the clearance is qualified. Take a no. 8 torx wrench and put it on the lock nut on the valve clearance adjustment screw, fix the adjustment screw with a special t-type wrench, and then tighten the nut with a torx

wrench to ensure that the intake and exhaust valve clearances are within the specified range of standard values. (valve clearance adjustment nut torque: 9±1N.m intake valve clearance: **0.10mm - 0.14mm** exhaust valve clearance: **0.18mm - 0.22mm)**

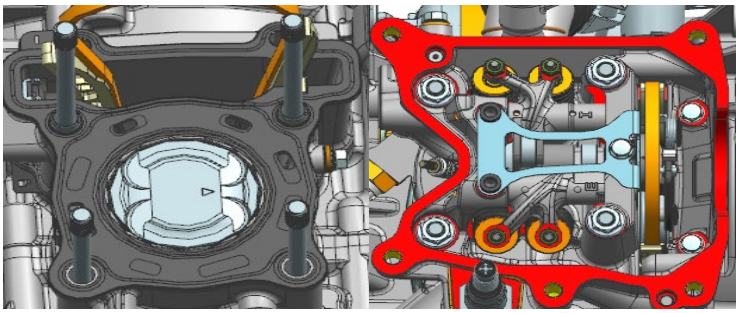




Cylinder head installation

1. Remove the oil stains, water stains and dust on the joint surface of the cylinder and the cylinder head. After checking that there are no foreign objects on the surface of the cylinder and piston, install 2 ϕ10 positioning pins and cylinder head gaskets (note: cylinder head gaskets cannot be repeated. **Use. After the cylinder head has been disassembled, the gasket of the cylinder body box needs to be replaced, and the joint surface needs to be coated with flat sealant. For the installation of the cylinder piston, refer to the ZT1P52MI engine maintenance manual - cylinder, piston).**

2. As shown in the figure, after confirming that there is no missing or wrong installation, install the cylinder head into the corresponding position of the engine. After evenly diagonally pre-tightening the cylinder head nut and the two locking bolts on the side, use the fixed torque wrench to tighten respectively (nut ϕ8.3×ϕ17×2 iron gasket should not be missed, m8×1.25 hexagonal flange nut fixed torque 25 ± 3 N.m, m6×105 hexagonal flange bolts with a fixed torque of 12 ± 1.5 N.m).

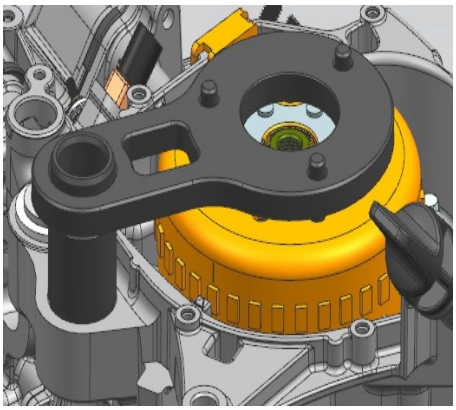


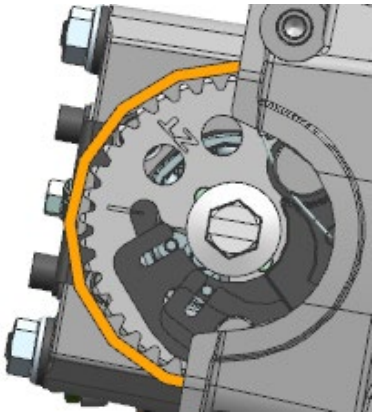
3. As shown in the figure, check the marked line of the t point of the flywheel, and the marked line of the t point is aligned with the position of the arrow. At the same time, the top dead center marking line on the timing driven sprocket should also be aligned with the scale line of the camshaft bearing pressure plate, install the decompression lever and the timing sprocket, and use the flywheel limit tooling to fit the crankshaft on the upper limit of the magneto rotor. Tighten and torque the camshaft bolts with a wind gun + sleeve head 14#, torque: 30±2N.m, and install it into the tensioner.

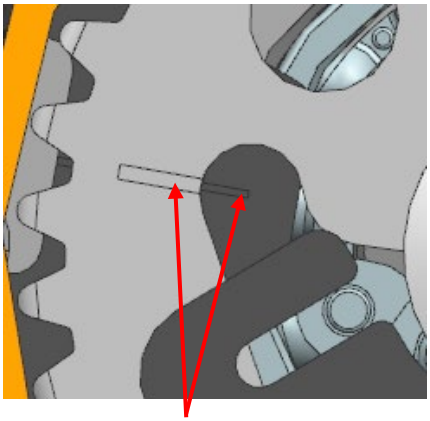
Remarks:

1. After confirming that the timing chain has not fallen off from the timing drive gear, tighten the timing sprocket at a constant torque, and after installing the tensioner, turn the crankshaft to recheck the timing for the second time.

2. After the camshaft bolts are tightened to a fixed torque, move the decompression mechanism of the driven sprocket. The decompression mechanism should rebound quickly, and if it is not stuck, it is qualified.







Guide bar

Assembly

1. Before removing the guide bar, the following parts need to be removed.

·Water pump. (refer **to ZT1P52MI engine maintenance manual for disassembly and assembly - water pump)**

·Tensioner. **(refer to ZT1P52MI engine maintenance manual for disassembly and assembly--cylinder head cover, cylinder head-tensioner)**

·Cylinder head cover parts. **(refer to ZT1P52MI engine maintenance manual for disassembly and assembly--cylinder head cover, cylinder head-cylinder head cover)**

·Cylinder head assembly. **(refer to ZT1P52MI engine maintenance manual for disassembly and assembly--cylinder head cover, cylinder head-cylinder head)**

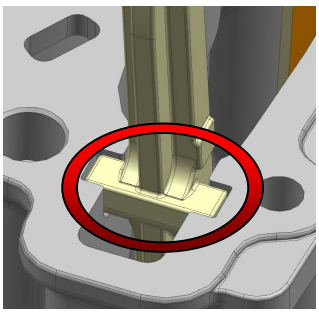
2. Remove the guide bar.

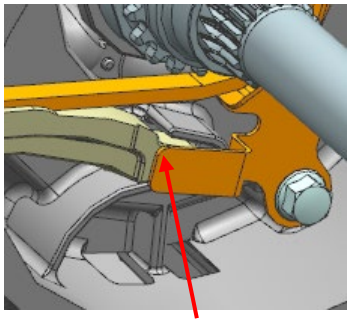
Inspection

1. Check the guide bar for excessive wear or damage.

Install

1. As shown in the figure, install the guide bar. (note: after the guide bar is installed in place, the convex point of the guide bar is lower than the joint surface of the cylinder block and cylinder head.)

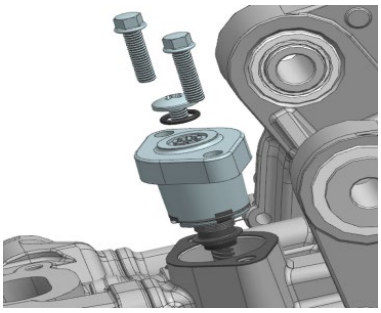




Tensioner

Assembly

1. As shown in the picture, use a cross batch to remove the cross bolts and O-rings on the top of the tensioner, then use the T-bar -8# to evenly loosen the tensioner fixing bolts diagonally, and remove the tensioner and the tensioner pad piece.

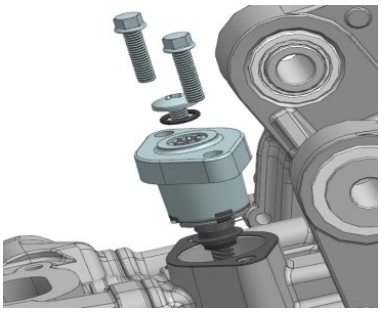


Inspection

1. When the top rod of the tensioner is normally extended, press the fixed rod of the tensioner by hand, if the top rod cannot rebound, it is qualified;
2. Check that the O-ring is not scratched or damaged. If it is scratched or damaged, it needs to be replaced.

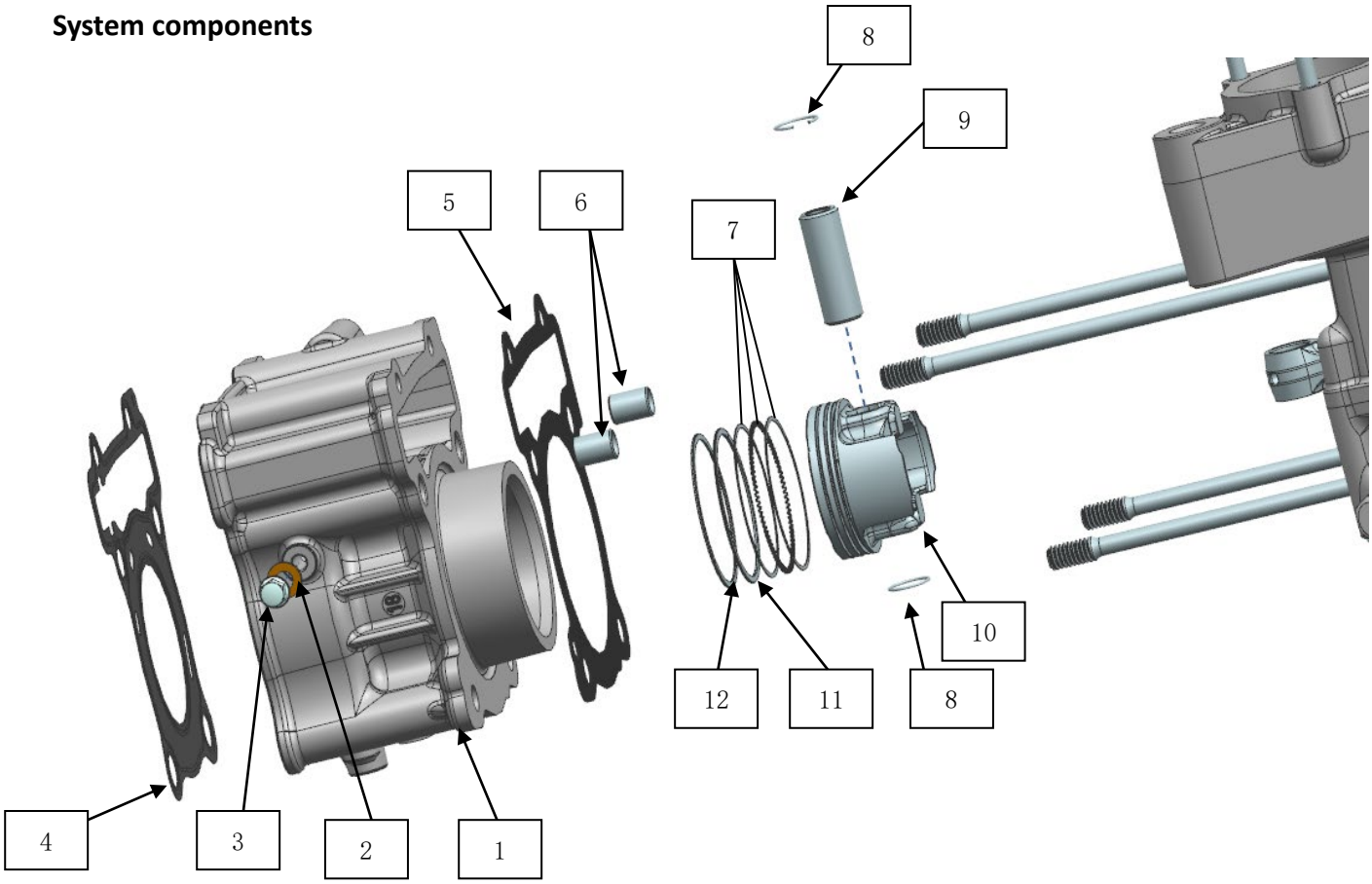
Tensioner installation

1. Tighten the tensioner ejector rod with a one-word batch **(rotate the one-word batch clockwise while holding the tensioner ejector rod with your hands),** and tighten it when it reaches the highest point, and the ejector rod can be locked automatically. Put the tensioner gasket into the tensioner and place it in the corresponding position of the cylinder, and tighten it with m6×22 bolts at a fixed torque with a torque of 1 2 ± 1.5N.m. **(tensioner spacers cannot be reused)**
2. Rotate the ejector bolt counterclockwise with a flat batch, and after confirming that the ejector rod of the tensioner pops up, put in the O-ring and the cross bolt to tighten.



Cylinder, piston

System components



Parts information

No.	Material name	Quantity	Remark
1	Cylinder	1	
2	6.3×12×1.6 copper gasket	1	
3	M6×10 top pin bolt	1	Tool: t-sleeve-8# fixed torque: 10±1 N.m
4	Cylinder head gasket	1	Cannot be reused
5	Cylinder block gasket	1	Cannot be reused
6	Φ 10×14 hollow positioning pin	2	
7	Oil ring combination	1	
8	16×1 piston pin retaining ring	2	Needle nose pliers
9	14×37×8.5 piston pin	1	
10	Piston	1	
11	Second ring	1	
12	Top ring	1	

Cylinder, piston

Assembly

1. Gently pull out the cylinder, and hold the piston and connecting rod with your hands;

2. Remove the piston pin retaining ring with needle-nose pliers, push the piston pin out of the small head hole of the connecting rod, and remove the piston (note: prevent the piston pin retaining ring from falling into the box);

3. Remove the cylinder block box gasket.

Remarks:

①the piston is turned to the top dead center before disassembly.

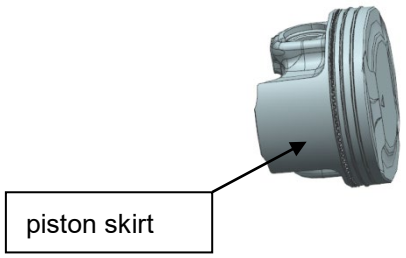
②do not drop the timing chain into the crankcase.

③ when the cylinder is pulled out of the piston, fix the piston and connecting rod by hand or other auxiliary tools to avoid collision with the box and cause damage.

Inspection

1. Check the cylinder inner wall and piston skirt:if there are obvious scratches or wear on the inner wall of the cylinder and the piston skirt, the defective parts must be replaced;

2. Check whether the three piston rings are abnormally worn (if there is abnormal wear , the corresponding parts need to be replaced).



Disassemble the piston ring

1. Remove the combination of the first air ring, the second air ring and the oil ring.

Tip: To remove the piston ring, open the end notch by hand and lift the other side of the ring over the top of the piston.

Install the piston ring

1. Remove the carbon deposits on the piston ring groove and the piston ring, and apply an appropriate amount of engine oil to the piston ring groove;

2. Put the oil ring assembly into the piston oil ring groove.

Remarks:

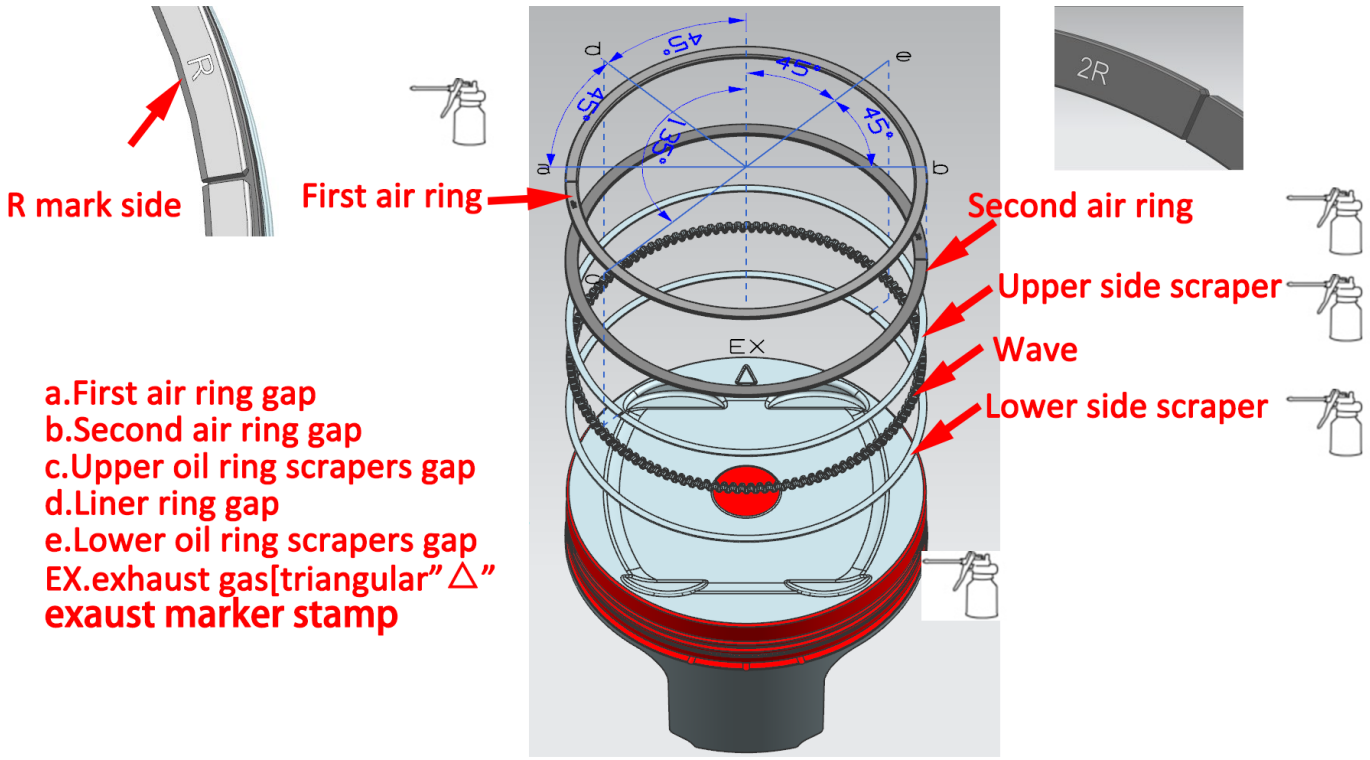
① do not use the first air ring and the second air ring interchangeably.

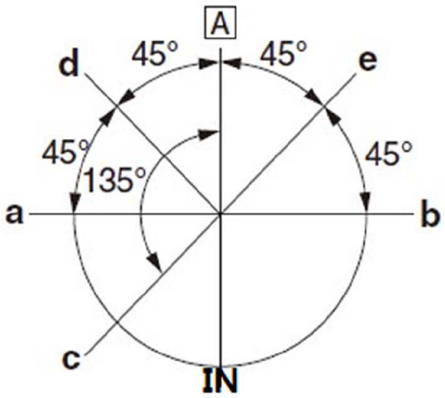
②when installing the gas ring, the side with the marked face faces up (piston top).

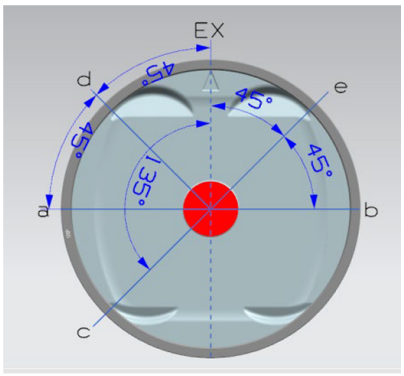
③installing the oil ring assembly, first install the wave-shaped lining ring (the arc of the end surface of the wave-shaped lining ring faces downward), then install the lower side scraper ring, and finally install the side scraper ring.

④ the notch " a " of the first ring is on the left side of the "△" ex mark, along the axial direction of the piston pin; the notch " b " of the second ring is on the right side of the "△" ex mark, and the angle with " a " is 180 °; the lower side the notch " e " of oil ring scraper is at 45 ° between "△" ex and " b " ; the angle between " c " and " e " of upper oil ring scraper is 180 °; the

notch " d " of oil ring backing is at "△" on the left side of ex , perpendicular to the line connecting " c " and " e ". (as shown in the picture below)







Install the cylinder and piston

1. Place two hollow positioning pins and install a new cylinder block gasket (as shown in the figure, before installing the new cylinder block gasket, ensure that the assembly plane of the cylinder block is smooth and flat and at the assembly plane of the cylinder body apply flat surface sealant).

2. Install the cylinder block, press the piston ring by hand to fit it into the cylinder block; the openings of the piston ring are staggered for assembly (the **arrow on the top of the piston points to the exhaust side as shown in the figure)** .

Remarks: ① before installing the cylinder block, apply an appropriate amount of engine oil evenly on the inner wall of the cylinder block.

②apply proper amount of engine oil to the piston skirt and piston ring.

③do not drop the timing chain into the crankcase.

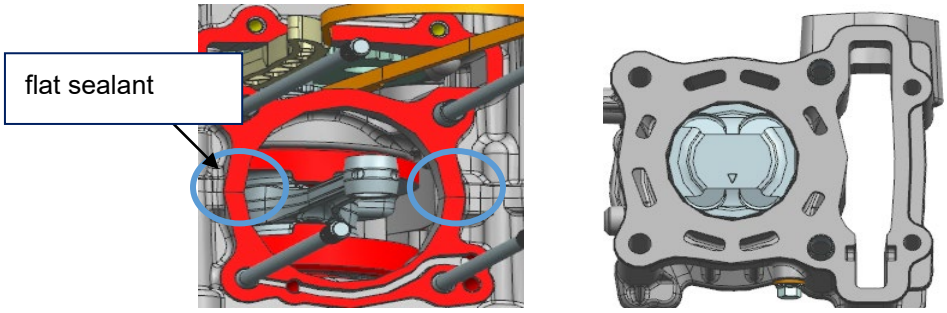
3. Put the piston pin into the piston and install it on the connecting rod, install the piston pin retaining ring into the ring groove with needle-nose pliers (one piston pin retaining ring at each end of the piston pin), and then gently push the cylinder to the assembly position.

Remarks: ① apply an appropriate amount of engine oil to the piston pin hole and the small end hole of the connecting rod.

②the opening of the piston pin retaining ring should avoid the opening of the retaining ring groove by more than 90°.

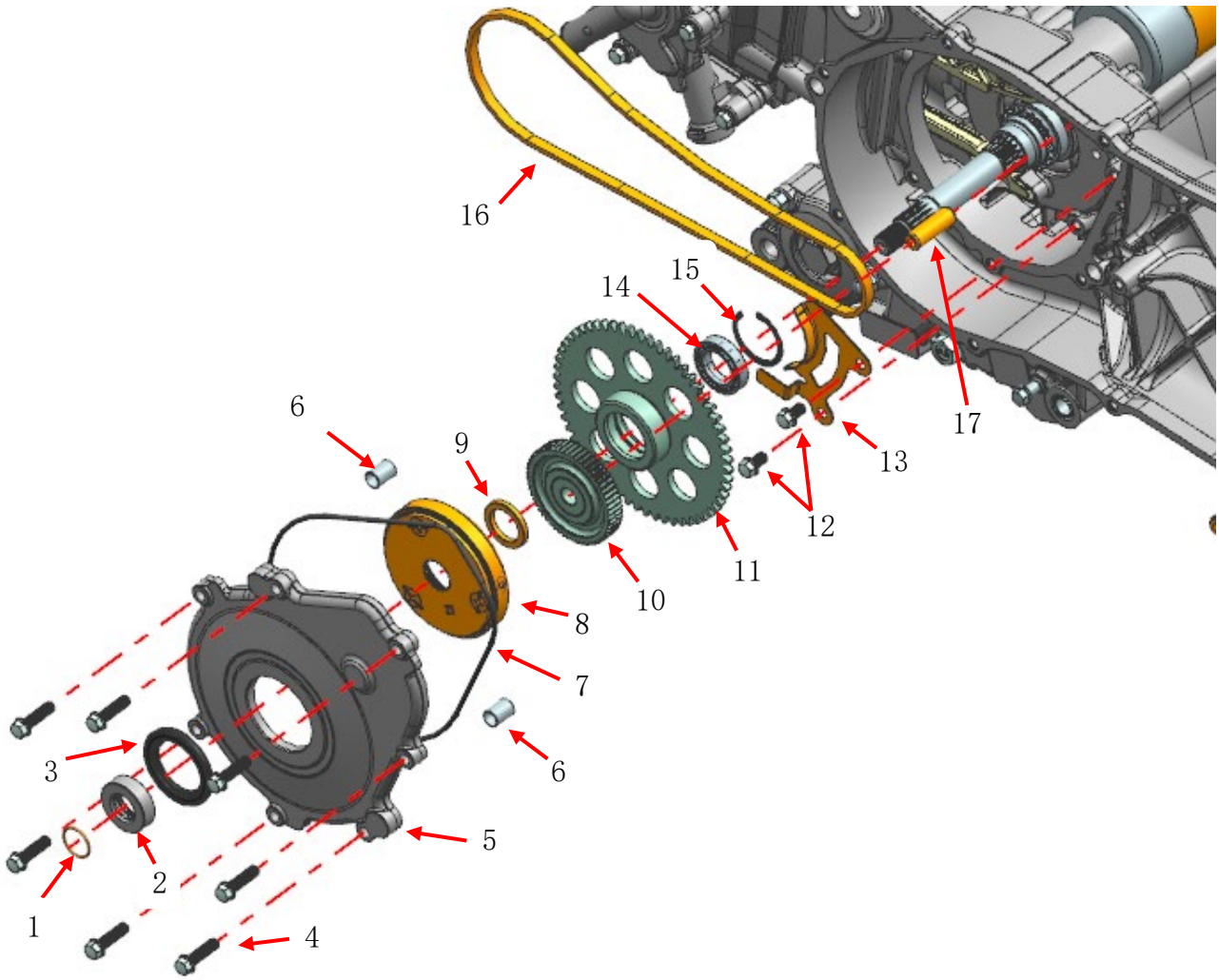
③piston pin retaining ring is installed in place.

④the direction of the arrow on the top of the piston points to the exhaust side, do not install it backwards.



Electric starter box cover, starter mechanism, timing chain

System components



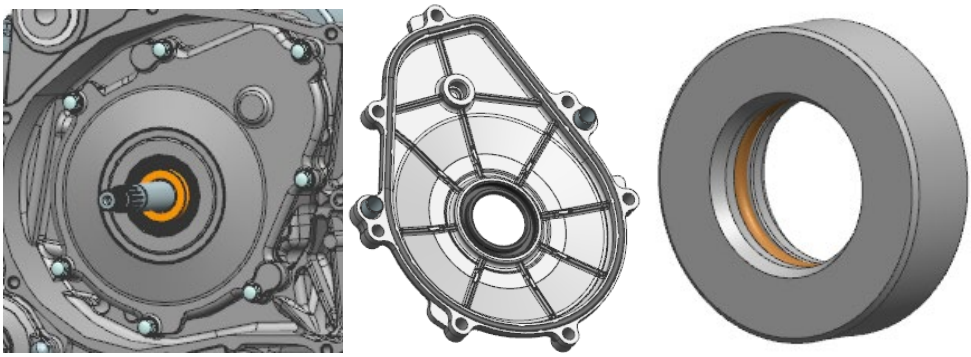
No.	Material name	Quantity	Remark
1	15.6×1.9 fluorine rubber O-ring	1	
2	Φ 16×ϕ30×9 bushing	1	
3	Fb30×45×5 fluorine rubber oil seal	1	
4	M6×22 hex flange bolts	7	Tool: t-sleeve-8# fixed torque: 12±1.5 N.m
5	ZT1P58MJ electric starter box cover	1	
6	Φ 10×14 hollow positioning pin	2	

7	151×3 acrylic glue O-ring	1	
8	Cg-78h overrunning clutch	1	
9	Φ19.4 ×ϕ27.8×3.6 bushing	1	
10	ZT1P58MJ electric starter reduction gear assembly	1	
11	ZT1P58MJ electric starter large gear assembly	1	
12	M6×10 top pin bolt	2	Tool: t-sleeve-8#. Apply thread glue, fixed torque: 12±1.5 N.m
13	ZT1P58MJ guide bar pressure plate	1	
14	Gb276-6804/p5c3 deep groove ball bearings	1	
15	Circlip for non-standard holes ϕ 32×1.2	1	
16	6.35×5×96 toothed chain	1	
17	ZT1P58MJ electric starter reduction gear shaft	1	

Electric starter box cover

Assembly

1. Use a t-shaped sleeve -8# to remove the locking bolt of the electric starter box cover, and take out the electric starter box cover, ϕ 16×ϕ30×9 bushing , 15.6×1.9 fluorine rubber O-ring , and positioning pin.

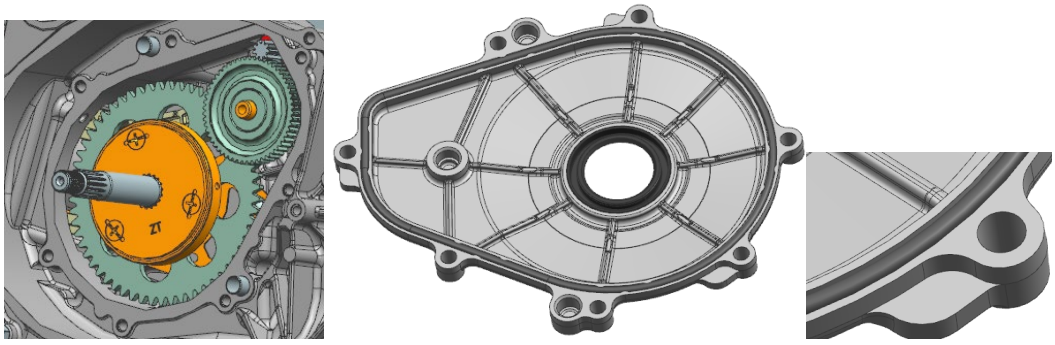


Inspection

1. Check the electric starter box cover oil seal, 151×3 acrylate rubber O-ring , ϕ 16×ϕ30×9 bushing outer ring, 15.6×1.9 fluorine rubber O-ring without scratches or damage, and replace if scratched or damaged .

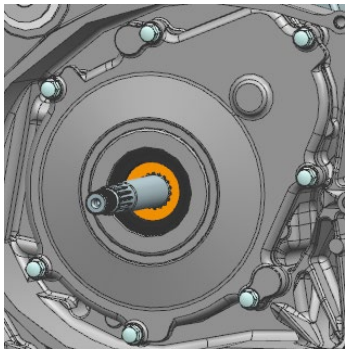
Install

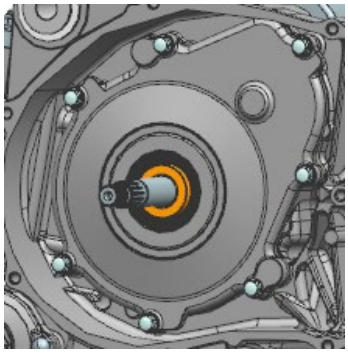
1. Install the positioning pin on the corresponding position of the left box, and place the 151×3 acrylic glue O-ring on the corresponding position of the electric starter box cover groove.



2. Install the electric starter box cover to the corresponding position, put in 7 m6×22 hexagon flange bolts, pretighten diagonally from the positioning pin hole, and the fixed torque is 12±1.5 N.m. Put the ϕ 16 × ϕ 30 × 9 bushing with 15.6 × 1.9 fluorine rubber

O-ring into the crankshaft and push it in place, and check that there is no misalignment of the oil seal dust lip of the electric starter case cover.

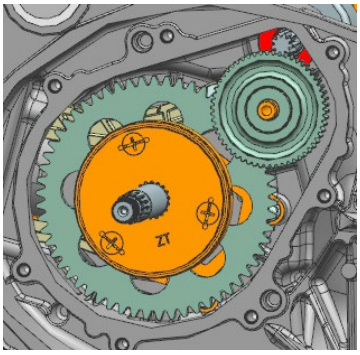


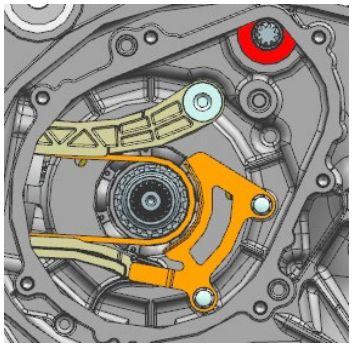


Start agency

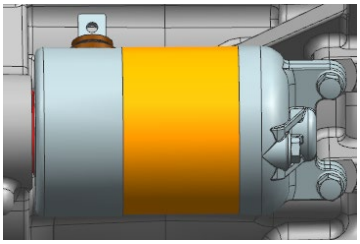
Assembly

1.take out ZT1P58MJ electric starter reduction gear assembly, ZT1P58MJ electric starter reduction gear shaft, CG-78H overrunning clutch, ϕ 19.4×ϕ27.8×3.6 bushing, ZT1P58MJ electric starter large gear press-fit assembly.





2. Use t-shaped sleeve -8# to remove the starter motor locking bolt and remove the starter motor.



Inspection

1. Check that the deceleration gear, deceleration gear shaft, overrunning clutch, electric starter large gear bearing, etc. Have no abnormal wear.

Install

1. Install the ZT1P58MJ electric starter gear assembly, ϕ19.4×ϕ27.8×3.6 bushing, cg-78h overrunning clutch, ZT1P58MJ electric starter reduction gear shaft, and ZT1P58MJ electric starter reduction gear assembly in order. (note: ϕ19.4 ×ϕ27.8×3.6 bushings cannot be missing, and the reduction gear shaft, overrunning clutch rollers and starting large tooth bearings need to be coated with engine oil.)

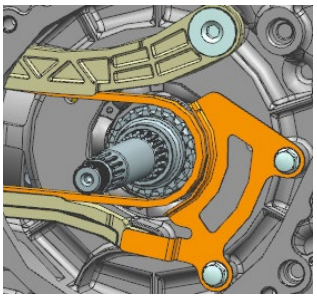
2. Check the O-ring of the starter motor for no cracks or trimmed edges. After the starter motor is installed in place, put in 2 m6× 22 bolts, tighten and set the torque. Torque: 12±1.5 N.m.

Timing chain

Assembly

1. Use a t-shaped sleeve -8# to remove the bolts of the guide strip pressure plate, take out the guide strip pressure plate, and remove the timing chain (6.35×5×96 toothed chain).

Note: before removing the timing chain, the ZT1P58MJ radiator subassembly, ZT1P58MJ fan case cover subassembly (rotate the crankshaft clockwise to make the piston at the top dead center), water pump, cylinder head cover, tensioner, and timing sprocket should be disassembled first.



Inspection

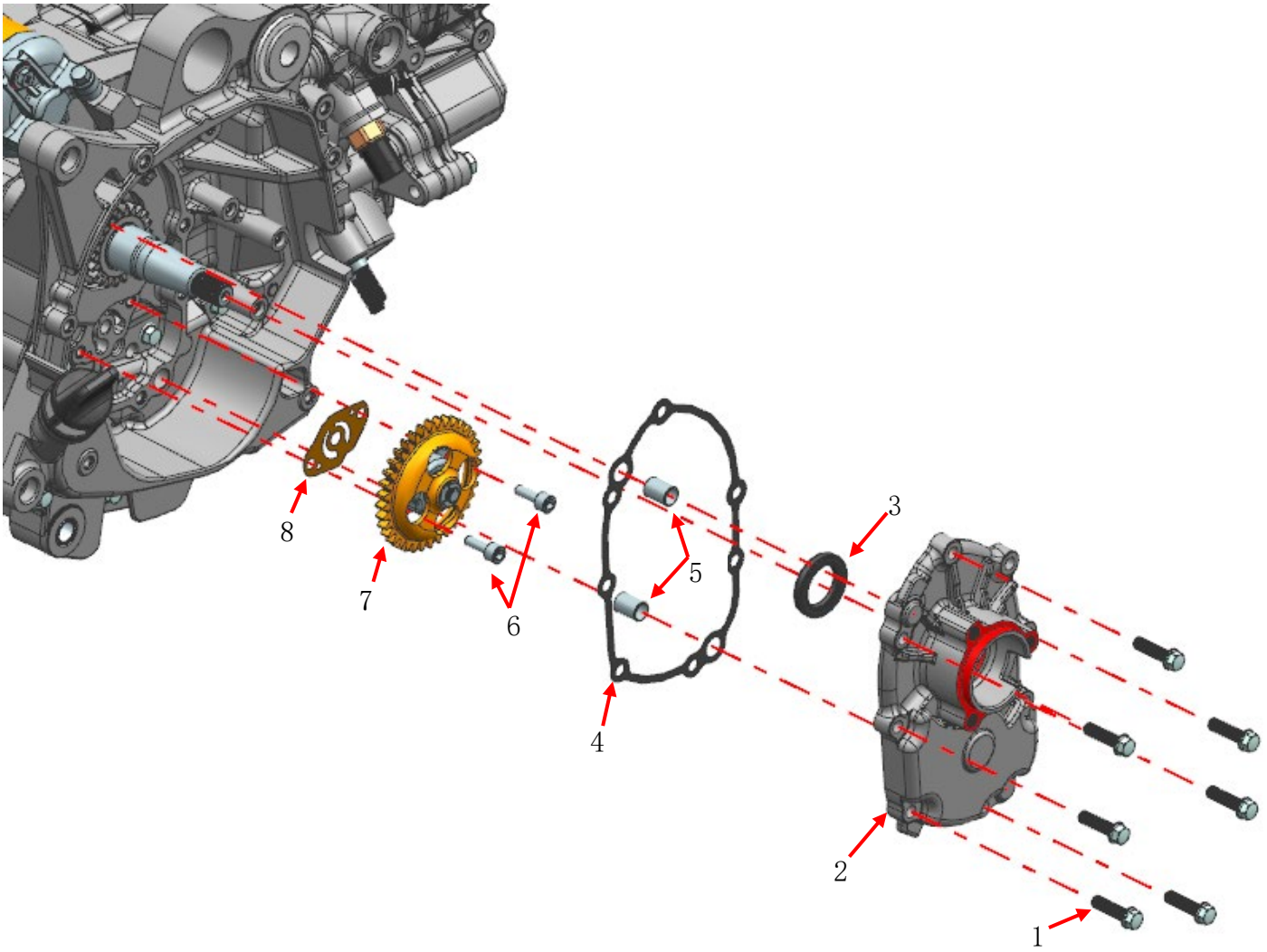
1. Pull the timing chain, check the timing chain, if there is no sticking, crack, or deformation, it is qualified.

Install

1. Put the timing chain on the timing drive gear of the crankshaft, take 2 m6×10 top pin bolts and apply an appropriate amount of thread glue to install the guide bar pressure plate in place, tighten and set the torque, torque: 10±1 N.m.

Oil pump - right crankcase cover

System components



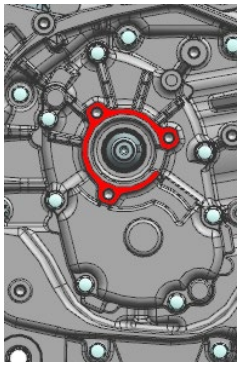
No.	Material name	Quantity	Remark
1	M6×22 hex flange bolts	7	T-shaped sleeve-8#. Fixed torque: 12±1.5 N.m

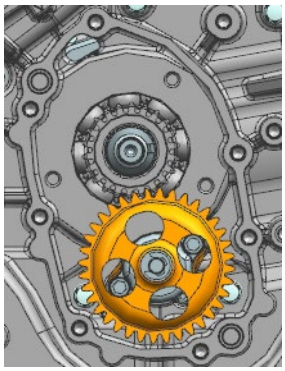
2	ZT1P58MJ right crankcase cover b	1	
3	Fb22×32×7 fluorine rubber oil seal	1	The oil seal is press-fitted on the right cover
4	ZT1P58MJ right crankcase cover gasket	1	
5	Φ 10×14 hollow positioning pin	2	
6	M5×15－5# hexagon socket head screw (oxidized black)	2	Apply thread glue. Fixed torque: 5±1 N.m
7	ZT1P58MJ oil pump parts	1	When the oil pump is installed, it is necessary to inject an appropriate amount of oil into the rotor
8	ZT1P58MJ oil pump paper gasket	1	

Right crankcase cover

Assembly

1. Use a t-shaped sleeve -8# to remove the locking bolt of the right crankcase cover, and take out the right crankcase cover, right crankcase cover gasket and positioning pin.





Inspection

1 check that the right crankcase cover oil seal (FB22×32×7 fluorine rubber oil seal) has no scratches or damage on the main and auxiliary lips.

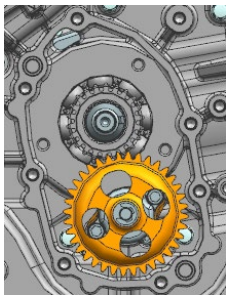
Install

1. After the positioning pin is installed in place, put in **the new ZT1P58MJ right crankcase cover gasket,** put the right crankcase cover in place, put in 7 m6×22 hexagon flange bolts, and pre-tighten diagonally from the positioning pin tighten with fixed torque, fixed torque: 12±1.5 N.m.

Oil pump

Assembly

1. Use the inner hexagon -5# to remove the locking bolts of the oil pump sub-components, and remove the oil pump sub-components and the paper gasket of the oil pump

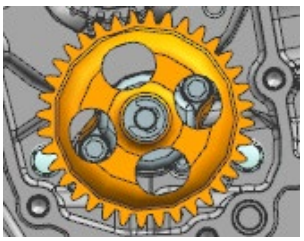


Inspection

1. The oil pump rotor and oil pump teeth are not abnormally worn.

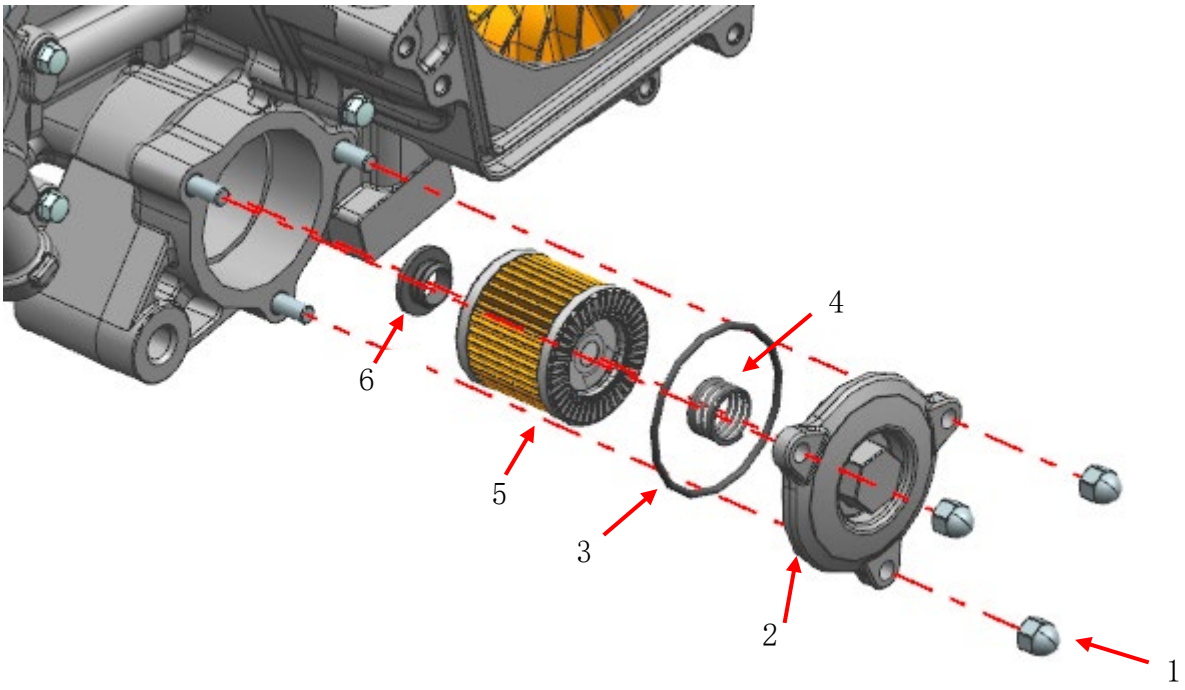
Install

1. Inject an appropriate amount of oil into the rotor of the oil pump, place the oil pump gasket at the corresponding position of the oil pump, then place the oil pump at the corresponding position of the right crankcase, take 2 m5×15-5 # inner hexagonal cylindrical screws and apply an appropriate amount of thread glue, after screwing in, tighten with a fixed torque, torque: 5±1N.m.



Oil filter

System components



No.	Material name	Quantity	Remark
1	Non-standard cap-shaped 9-grade nut m6×13 (zinc)	3	T-sleeve-10#, constant torque: 10±1N.m
2	ZT1P58MJ oil filter cover (ceramic)	1	
3	Φ51 ×ϕ2.65 hydrogenated nitrile rubber O-ring	1	

4	Φ 18.5×13×1.6 oil filter spring	1	
5	Outer diameter ϕ 44×40 cylindrical oil filter	1	
6	ZT1P58MJ oil filter seal ring	1	**Can not be missing**

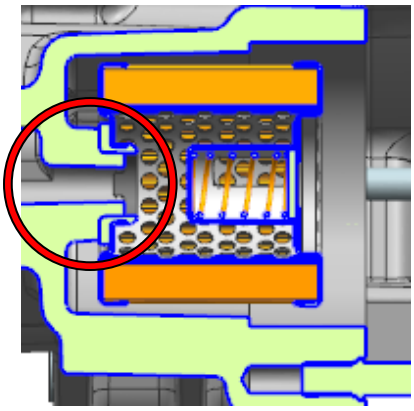
Oil filter

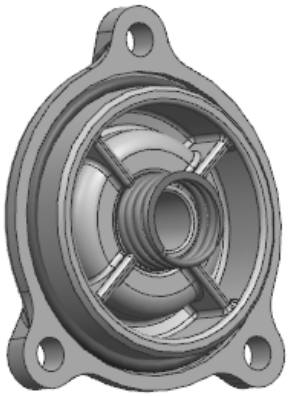
Assembly

1. Remove the locking bolt of the oil filter cover with a t-shaped sleeve -10#, and take out the ZT1P58MJ oil filter cover (ceramic), ϕ 18.5×13×1.6 oil filter spring, ϕ 51×ϕ2.65 hydrogenated nitrile rubber O-ring , cylindrical oil filter with outer diameter ϕ 44×40 , ZT1P58MJ oil filter sealing ring .

Install

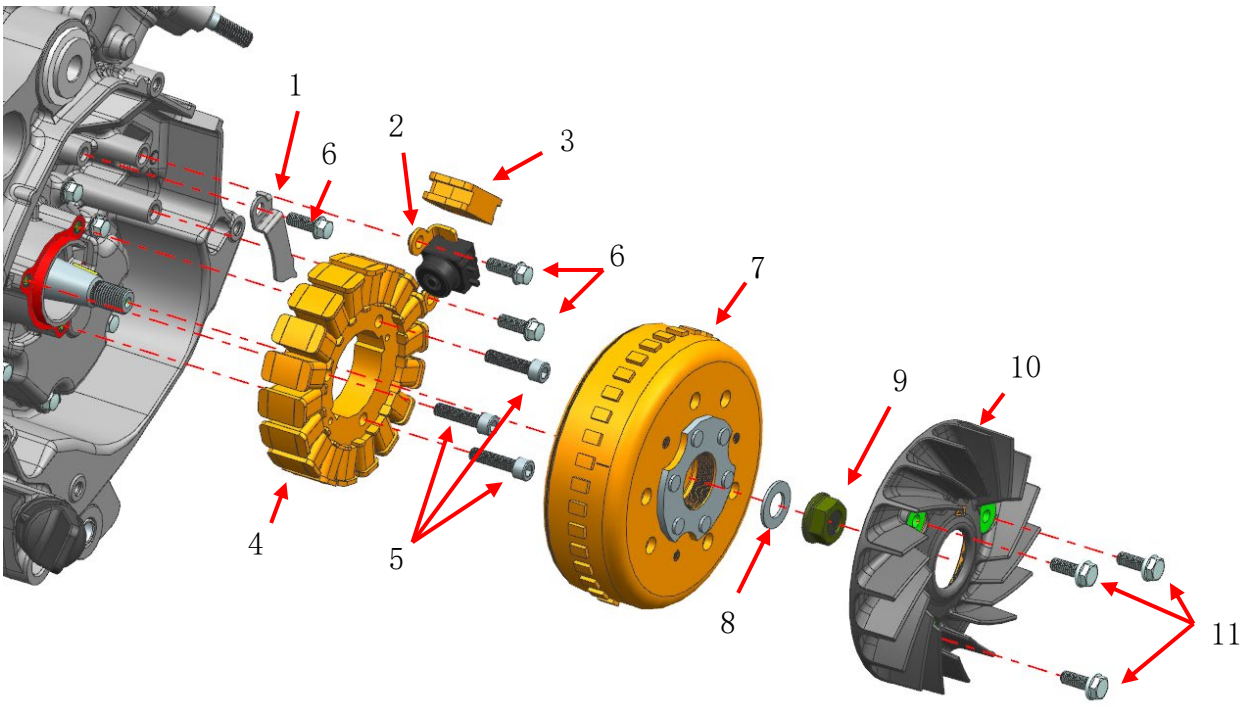
1. During installation, the ZT1P58MJ engine oil filter sealing ring is first inserted into the corresponding position of the oil filter, and the end of the oil filter with the sealing ring is inserted into the boss at the corresponding position of the left box, and replaced with a new ϕ51 ×ϕ2.65 hydrogenated nitrile rubber o-type then press the O-ring into the groove of the oil filter cover, insert the oil filter spring into the boss of the oil filter cover, install the oil filter cover to the corresponding position of the left box, and screw in 3 non-standard cover-shaped 9-level nuts m6 ×13 , tighten with fixed torque after pre-tightening, torque: 10±1N.m.





Magneto stator, rotor

System components



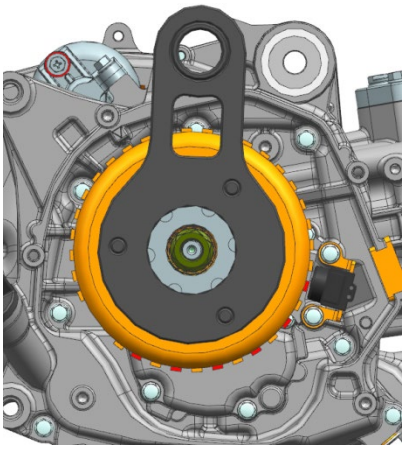
No.	Material name	Quantity	Remark
1	Stator pressure plate	1	
2	Trigger	1	
3	Waterproof rubber sleeve	1	
4	Magneto stator	1	
5	Gb70.1m6×25 (zinc)	3	Apply thread glue, inner hexagon tip -5#, fixed torque: 10±1n m
6	M6×16 hex flange bolts	3	Apply thread glue, external hexagon socket-8#, fixed torque: 12±1.5n m
7	ZT1P58MJ magneto rotor parts	1	
8	12.5×23×1.8 gasket	1	
9	M12×1.25 hexagonal flange surface 10 grade nuts (zinc)	1	Sleeve-17#, constant torque: 75± 5N·m
10	ZT1P58MJ cooling fan parts	1	
11	Gb5789m6×16 (zinc)	3	Apply thread glue, t-sleeve-10#, fixed torque: 10±1N.m

Magneto rotor

Assembly

1. Remove 3 pieces of gb5789m6×16 with t-shaped sleeve -10#, remove the cooling fan,

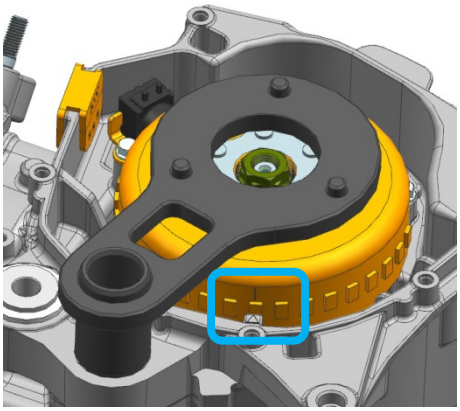
2. Use a special fixed rotor fixture to prevent the rotor from rotating freely, use a torque wrench (or electric gun) and a sleeve -17# to remove the m12×1.25 hexagonal flange surface 10-level nut, and remove the 12.5×23×1.8 gasket; screw the rotor puller counterclockwise into the thread on the rotor, and use an electric gun and sleeve -17# to remove the lower rotor.

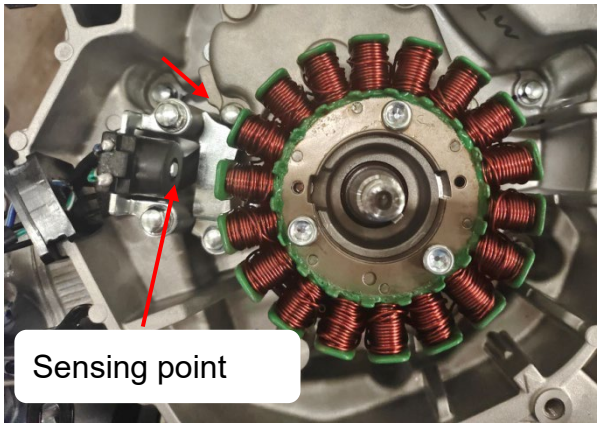


Install

1. Align the magneto rotor with the half-round key and install it in place, put in the 12.5×23×1.8 gasket , m12×1.25 hexagon flange surface 10-level nut and screw it into the thread, turn the rotor clockwise to make the rotor "t" mark afterwards, align the adjacent marking line with the triangle mark of the box, use a special fixed rotor fixture to prevent the rotor from rotating freely, use a torque wrench and a sleeve -17# to tighten the m12×1.25 hexagonal flange surface 10-level nuts, and the torque standard is 75± 5N·m.

fit as close as possible





2. Put the fan on the corresponding position of the flywheel, apply an appropriate amount of thread fastening glue on the three GB5789 M6×16 threads, and tighten with t-sleeve -10#, torque standard: 10±1N.m.

Magneto stator

Assembly

Use a torque wrench (or air batch), inner hexagonal gun head-5# and outer hexagonal sleeve-8# to fix the 3 GB70.1 M6×25 bolts on the coil, the 3 bolts on the trigger pressure plate and the stator pressure plate. Remove the M6×16 bolts and take off the magneto stator.

Install

Put the sub-components of the magneto stator on the corresponding position of the right crankcase cover, apply an appropriate amount of thread glue on the threads of three GB70.1 M6×25 bolts and three M6×16 bolts, and use torque wrench, inner hexagonal gun head-5# and outer hexagonal sleeve-8#, screw the bolts into the corresponding threaded holes and tighten them. The torque standard is GB70.1 M6×25 (zinc) bolts: 10±1N.m, M6×16 bolts: 12±1.5N.m.

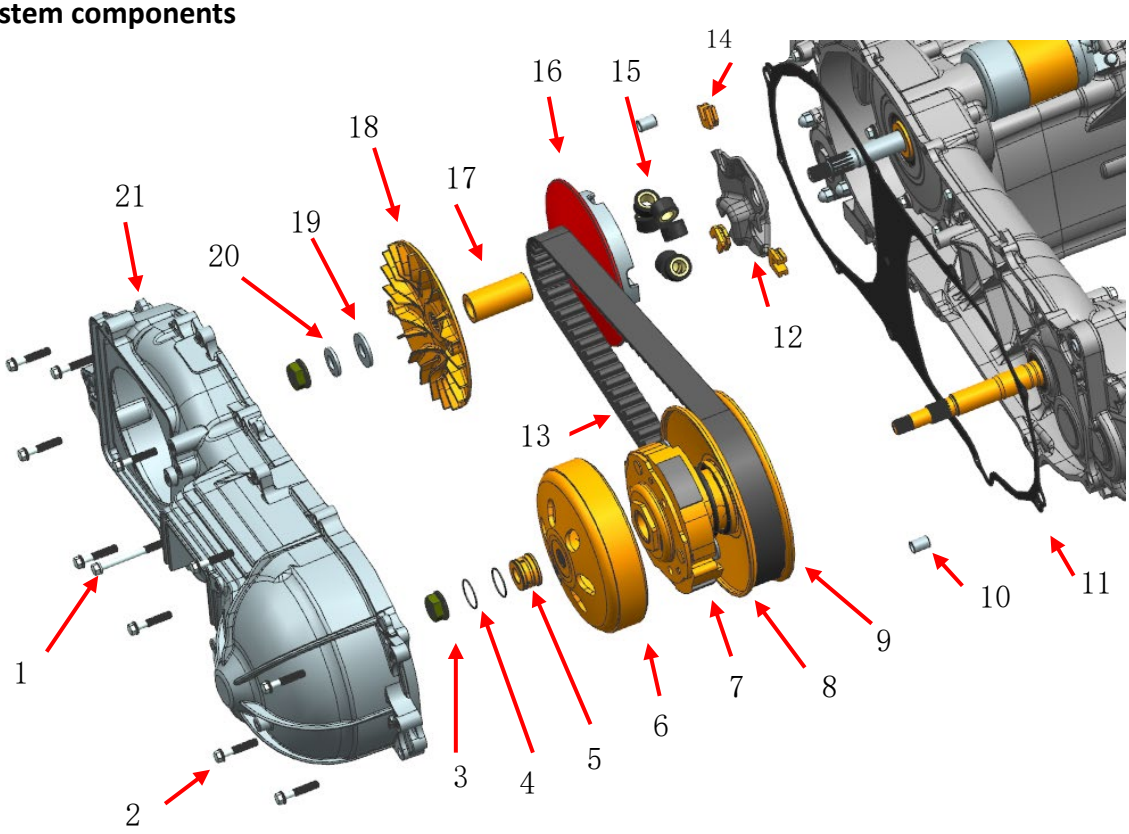
Remarks:

①the trigger cannot be installed backwards, and the side with the sensing point faces inward.

②the arc position of the pressure plate should fit as close as possible to the cylinder of the right box. When the bolts are tightened, be careful not to lift the pressure plate.

Left crankcase cover, continuously variable clutch sub-assembly

System components



No.	Part name	Quantity	No.	Part name	Quantity
1	M6×60 hexagonal flange bolts (zinc)	1	12	ZT1P52MI slope plate	1
2	M6×30 hexagonal flange bolts (zinc)	10	13	ZT1P52MI v-shaped transmission belt	1
3	M12×1.25 hexagonal flange surface 10 grade nuts (zinc)	2	14	ZT1P52MI buffer slider	3
4	Φ21.8×ϕ1.8 acrylic O-ring	2	15	ZT1P52MI centrifugal roller	6
5	Φ12.8×ϕ25×16.7 driven wheel bushing	1	16	ZT1P52MI main sliding wheel subassembly	1
6	ZT1P52MI clutch jacket	1	17	ZT1P52MI driving wheel sleeve	1
7	Driven wheel clutch shoe	3	18	ZT1P52MI main fixed plate	1
8	Driven wheel sliding plate	1	19	Φ12.2×ϕ29×2.5 gasket	2
9	Fixed plate of driven wheel	1	20	12×24×2.6 Belleville spring washer	1
10	Φ 10×14 hollow positioning pin	2	21	ZT1P58MJ left crankcase cover subassembly	1
11	Left crankcase cover gasket	1			

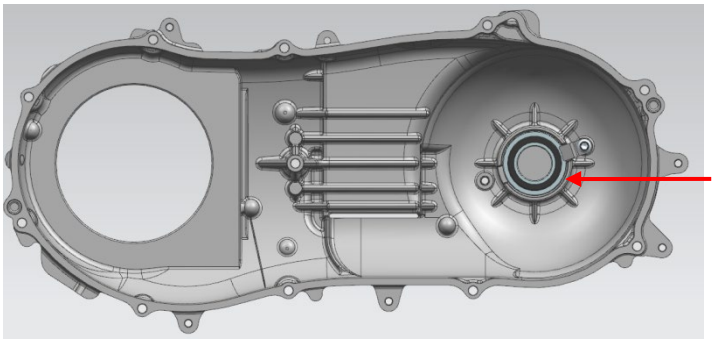
Left crankcase cover

Assembly

Use a t-shaped sleeve - 8# to remove one m6×60 hexagonal flange surface bolt and 10 m6 × 30 hexagonal flange surface bolts on the left crankcase cover, and remove the left crankcase cover from the positioning pin. Down.

Left crankcase cover inspection

Check the 6005 bearing of the left crankcase cover. If the inner ring of the bearing is stuck, please replace it in time.



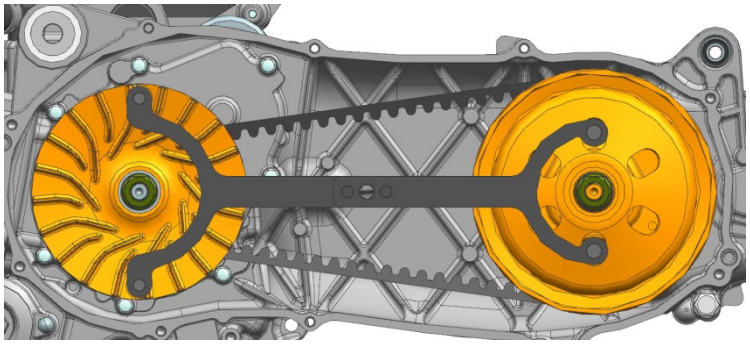
Left crankcase cover installation

Install the positioning pins in place, and then align the positioning pins to install the left crankcase cover in place. After pre-tightening the bolts of the left crankcase cover evenly diagonally, tighten them with a fixed torque at a torque of 12 ± 1.5 N.m.

Continuously variable clutch sub-assembly

Assembly

Place the special CVT limit fixture according to the position shown in the figure to limit the driving and driven wheels so that the driving and driven wheels cannot rotate freely.



Use a torque wrench (or air batch) and a 17# sleeve Assembly the M12×1.25 hexagon flange surface 10-grade nuts counterclockwise, and remove the ϕ12.2×ϕ29×2.5 gasket, 12×24×2.6 butterfly shaped spring washer and ϕ12.8×ϕ25×16.7 driven wheel bushing, then remove the positioning fixture for the driving and driven wheels, remove the ZT1P52MI main fixed plate from the crankshaft, and remove the driven wheel clutch jacket from the drive shaft. Pinch the middle part of the V-shaped driving belt, and remove the belt and driven wheel sub-assembly together. Pinch the main sliding wheel subassembly and the ramp plate inside, and remove it together with the driving wheel bushing.

Inspection

Check whether the centrifugal roller is worn and out of round, if it is out of round and deformed, it needs to be replaced.

Check the v -shaped transmission belt for cracks, broken wires, tooth loss, etc., and replace it if it occurs.

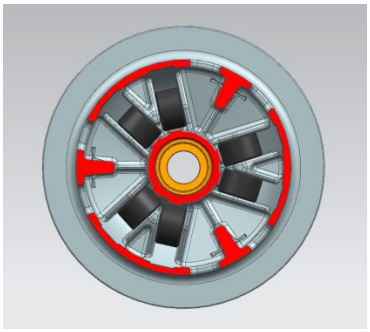
Check whether the inner circular surface of the driven wheel clutch casing and the driven wheel clutch shoe are abnormally worn or damaged, and if they are abnormally worn or damaged, they need to be replaced. (note**: it is not recommended to grind the clutch shoes, which will increase the wear of the inner ring of the clutch casing and the clutch shoes, and may also cause riding vibration.)**

Install

1. Install the positioning pin in place, and then put the ZT1P58MJ left crankcase cover gasket.

2. Turn over the main sliding wheel subassembly with the centrifugal roller, buffer slider and slope plate installed, and then put the driving wheel shaft into the inner hole of the main sliding wheel subassembly. Then pinch the sliding disc and the ramp plate with one hand (to prevent the centrifugal roller from falling after being disassembled), and hold the exposed driving wheel

bushing with the other hand to align the inner hole of the driving wheel bushing with the crankshaft. Then the slope plate, the centrifugal roller, the main sliding wheel sub-components, and the driving wheel bushing are combined and assembled on the crankshaft as a whole and withstand the ϕ 16 × ϕ 30 × 9 bushing.



3. Pick up the combined driven wheel and v-shaped transmission belt as a whole, make the clutch outer cover of the driven wheel face the outside, align the inner hole of the center of the driven wheel with the drive shaft, and then push the driven wheel inward and install it in place (the drive shaft is used for a section of the optical axis of the ϕ12.8×ϕ25×16.7 driven wheel bush is exposed).

4. Put the side of the main fixed disk with the wind blades facing outward, align the spline hole in the middle with the spline on the crankshaft, and then assemble it on the crankshaft, and assemble it in place.

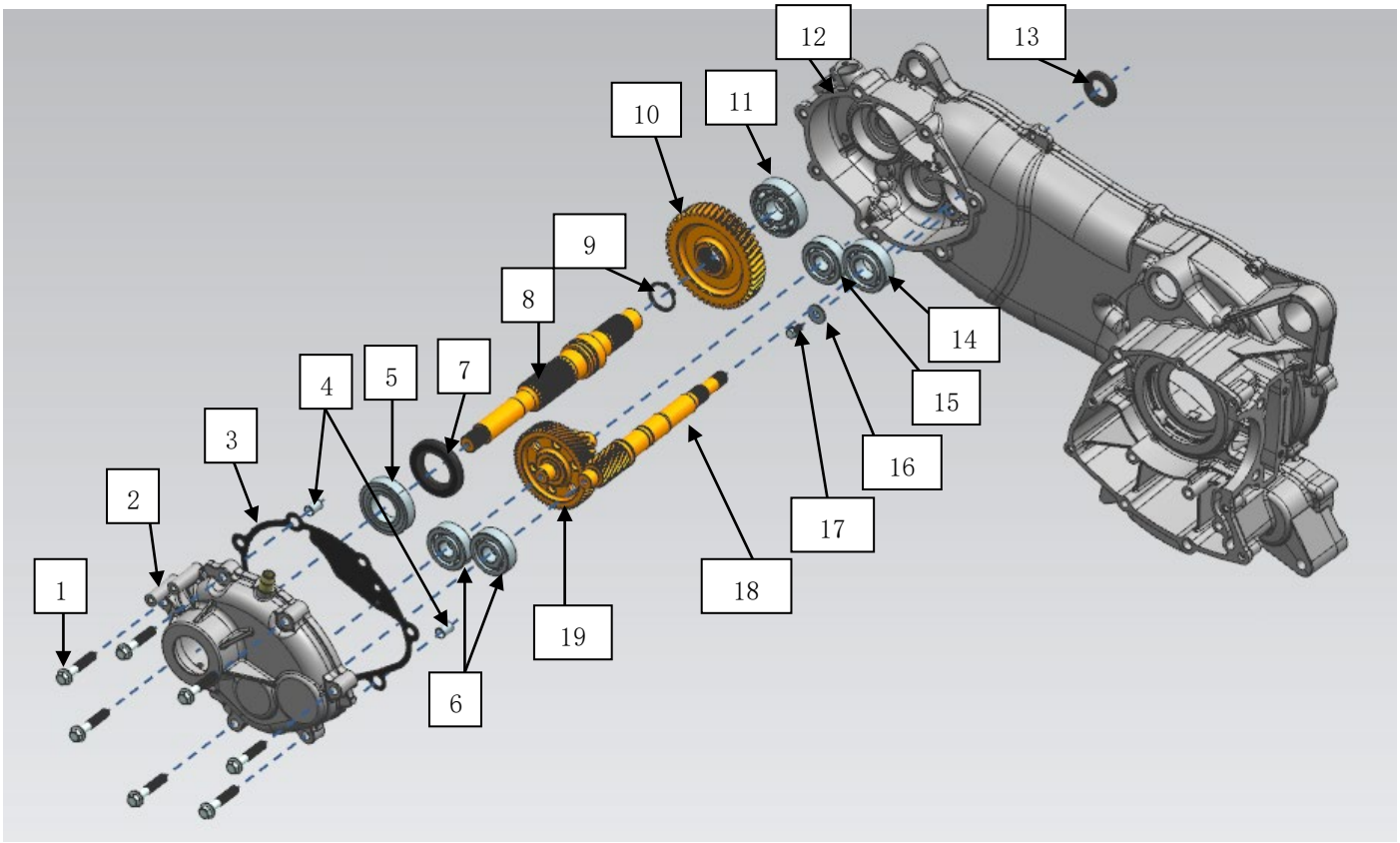
Put the ϕ12.2×ϕ29×2.5 washer and 12×24×2.6 butterfly spring washer on the crankshaft in turn, and then screw the m12×1.25 hexagonal flange surface 10-grade nut on the crankshaft thread.

5. Point the stepped end of the ϕ12.8×ϕ25×16.7 driven wheel bushing to the driven wheel, and install it on the exposed section of the optical shaft of the drive shaft. Then screw on the m12×1.25 hexagon flange face 10 grade nut on the thread of the drive shaft. (**note: if there is no grease in the groove of the inner ring of the driven wheel bushing, add high-temperature resistant grease. Do not miss the installation of the 2 O-rings. When screwing the nut, if there is grease on the thread, it needs to be wiped clean.**)

6. Same as the first step of disassembly, use a special fixture to clamp the main fixed plate and the clutch cover of the driven wheel so that they cannot rotate freely, and use a torque wrench (or air batch) and a 17# sleeve to tighten m12×1.25× clockwise 35 hex flange bolts ,fixed torque 50±4N.m.

Gearbox

System components



No.	Name	Quantity	No.	Name	Quantity
1	Gb16674m8×40 (zinc)	7	12	ZT1P58MJ left crankcase	1
2	ZT1P58MJ gear box cover	1	13	Fb20×32×6 fluorine rubber oil seal	1
3	ZT1P58MJ gearbox cover gasket	1	14	Gb276-6204/p5c3 deep groove ball bearings (nitro enation)	1
4	Φ10×14 hollow positioning pin	2	15	Gb276-6302/p5c3 deep groove ball bearings (nitrided)	1
5	Gb276-60/28-2rk deep groove ball bearings (koyo)	1	16	6.2×19×2.5 spacers	1
6	Gb276-6302/p5c3 deep groove ball bearings (nitrided)	2	17	Gb5789m6×12 (zinc)	1
7	Fb35×54×7 fluorine rubber oil seal	1	18	ZT1P58MJ drive shaft	1
8	ZT1P58MJ output shaft	1	19	ZT1P52MI double gear subassembly	1
9	Gb894.1 shaft circlip ϕ25	1			
10	ZT1P52MI output gear	1			
11	Gb276-6304/p5c3 deep groove ball bearing	1			

Bolt torque value:

Bolt model	Assembly position	Quantity	Torque (N.m)	Remark
Gb16674m8×40 (zinc)	Gear case cover locking bolt	7	20±2.5	-
Gb5789m6×12 (zinc)	6204 bearing platen bolts	1	1 0 ± 1	Apply thread glue
Non-standard bolt m8×25 (zinc)	Gearbox oil drain bolt	1	20±2.5	-

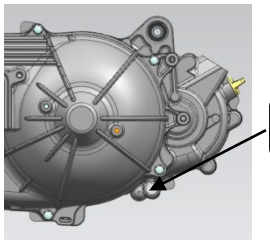
Gear case cover

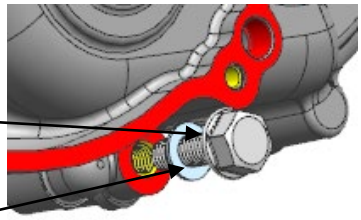
Assembly

When disassembling the gearbox, the engine does not need to be removed from the motorcycle, but the gearbox oil needs to be released.

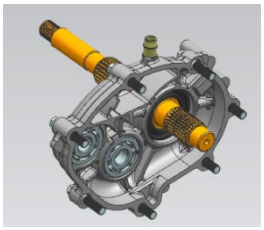
1. Use a t-shaped sleeve -14# to remove the non-standard bolt m8×25 and copper gasket at the bottom of the gearbox, and release the gear chamber oil.

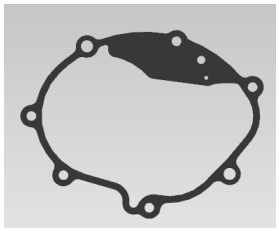
8.3×16×1.5 copper gasket after the engine oil is released, and pre-tighten it with a t-shaped sleeve -14# , tighten the bolt with a fixed torque wrench and set the torque to 20±2.5 N.m)



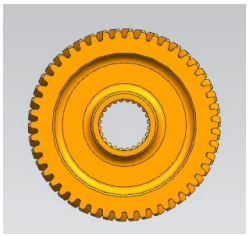


1. Use a t-shaped sleeve -10# to remove the gear box cover locking bolt, and then remove the gear box cover, gear box cover gasket, and positioning pin in sequence.





Then remove the output gear, duplex gear assembly, output shaft and output shaft retaining ring in sequence.



output gear

ZT1P52MI double gear

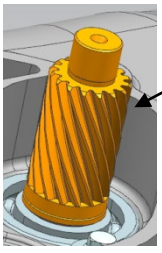
Output shaft

Inspection

1. **Check the gear case cover bearing and oil seal.** Turn the inner ring of the bearing by hand, and the bearing turns smoothly and silently. If the bearing rotation is stuck, please replace the bearing. Check the output shaft oil seal, there is no scratch or abnormal wear on the oil seal, if it is scratched or abnormal wear, please replace it.

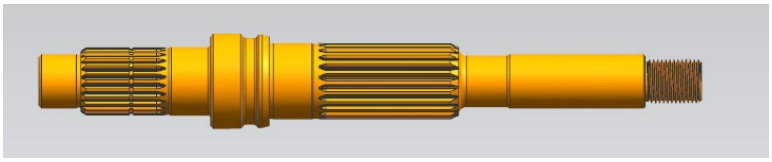
2. **Check the left crankcase bearing and oil seal.** Turn the inner ring of the bearing by hand, the bearing will rotate smoothly and silently, if the bearing rotates stuck, please replace the bearing. Check the drive shaft oil seal, there is no scratch or abnormal wear on the oil seal, if it is scratched or abnormal wear, please replace it.

3. **Check the duplex gear assembly, output gear, and drive shaft helical teeth** for abnormal wear and corrosion, and replace them if any.

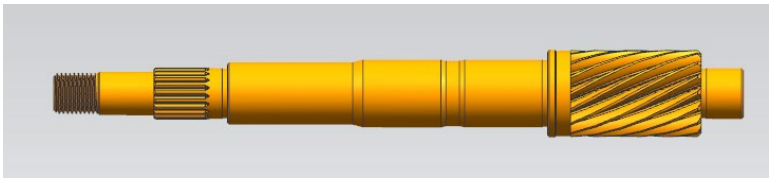


4. **Check the spline position of the drive shaft and output shaft** to see if there is any bending deformation or abnormal wear. If so, please replace it.

(note: if there is no abnormality in the drive shaft, it is not recommended to take it out from the left box. Taking it out will damage the 6204 bearing; if the drive shaft is abnormal, please remove the 6204 bearing pressure plate bolt and pressure plate to replace the drive shaft and 6204 bearing.)



Output shaft



Drive

Install

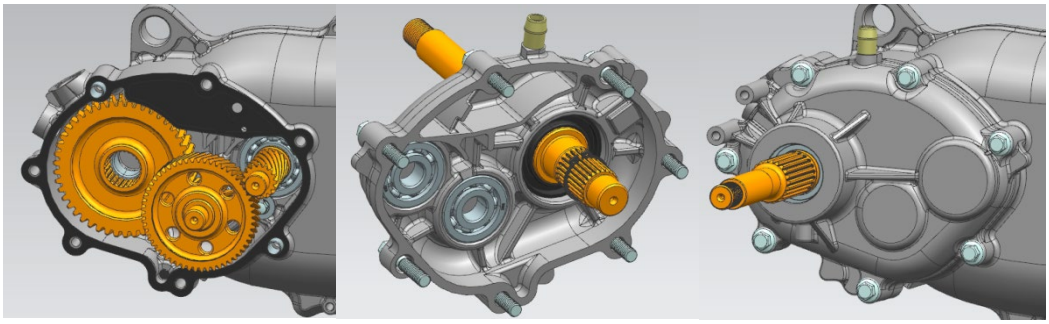
Before the gear case cover is installed, remove oil stains and residual paper pads on the joint surface of the gear case cover, and check the joint surface of the gear case cover to ensure that there are no scratches or bumps.

1. Spray engine oil on each bearing in the gearbox, install the duplex gear assembly and output gear in sequence, and spray engine oil on each part in the same way.

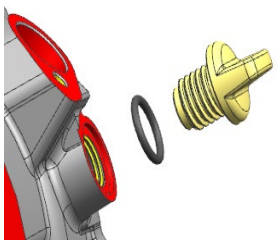
Assemble the output shaft with the retaining ring fully installed on the gearbox cover subassembly.

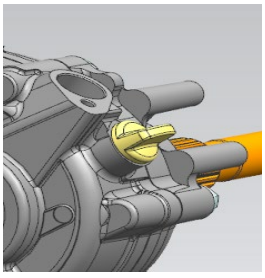
Put two positioning pins and a brand-new gearbox cover paper gasket on the joint surface of the gearbox, apply engine oil on the bearing surface of the gearbox cover, install the gearbox cover in place, and put in 7 pieces of gb16674m8×40 (zinc) in sequence the bolts are pre-tightened diagonally from the position of the positioning pin and tightened with a fixed torque, the torque is 20±2.5N.m .

(requirement: after the gearbox assembly is completed, there is no stagnation or abnormal noise when the drive shaft is rotated)



2. Manually unscrew the oil filler cap of the gearbox, add 170ml of engine oil, screw in the oil filler nut after refueling and tighten it.



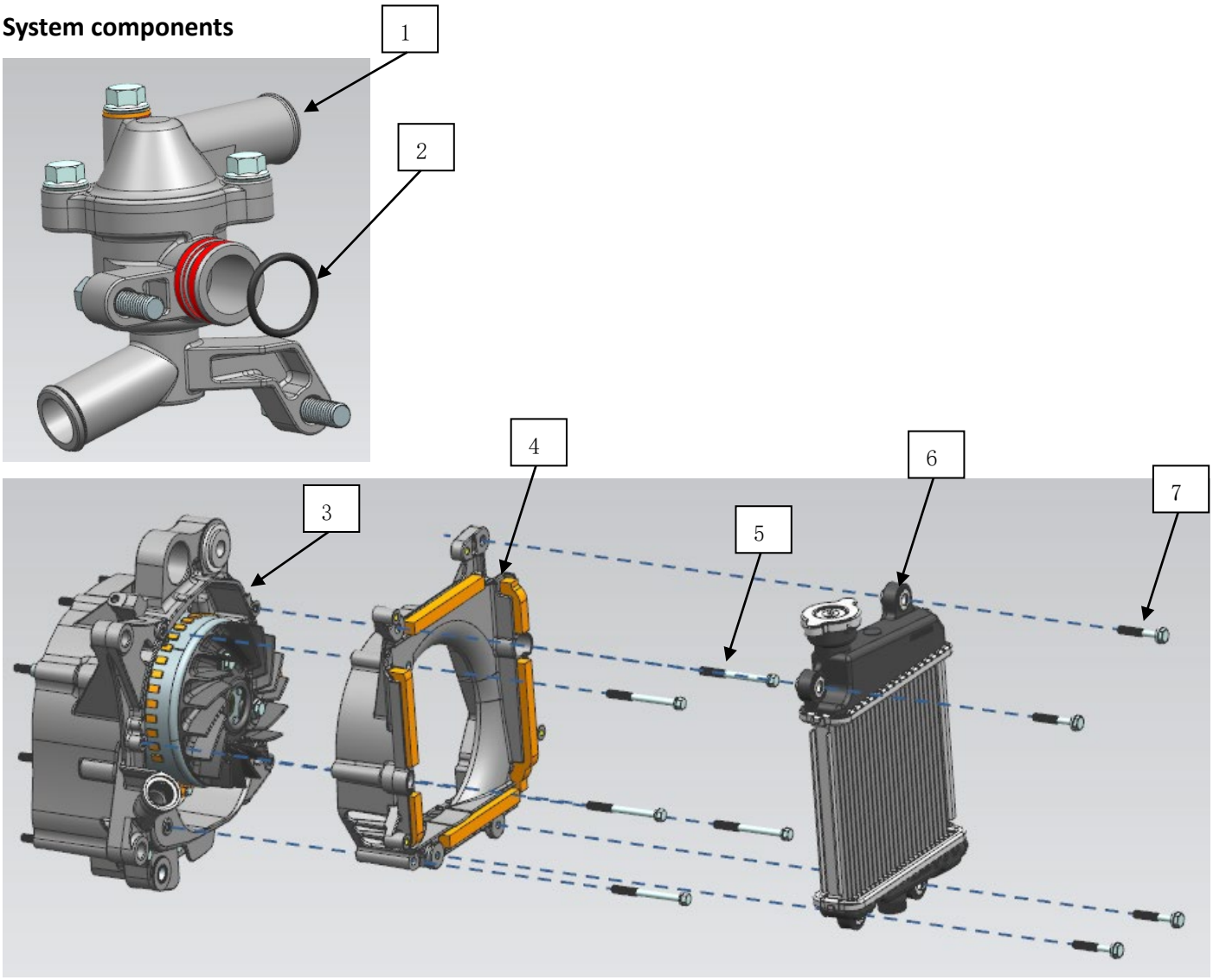


Maintenance		Oil volume
Gearbox oil	Routine maintenance (without disassembling the gearbox)	160ml
	Non-routine maintenance (disassembly of gearbox)	170ml

3. After the assembly is completed, wipe off the oil stains around the gear case cover.

Thermostat, radiator , fan case cover

System components



No.	Material name	Quantity
1	ZT1P58MJ thermostat subassembly	1
2	16.5×1.95 EPDM o -ring	1
3	ZT1P58MJ right crankcase parts	1
4	ZT1P58MJ fan box cover subassembly	1
5	M6×60 hexagonal flange bolts (zinc)	5
6	ZT1P58MJ radiator subassembly	1
7	GB5789 M6×35 (zinc)	4

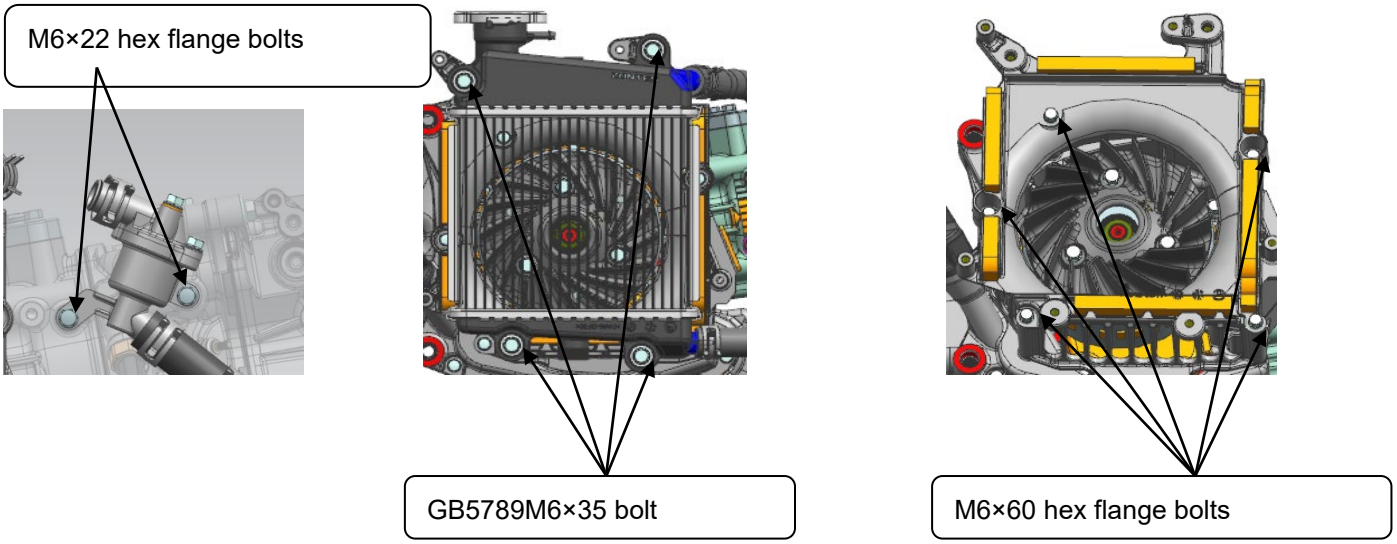
Thermostat, radiator, fan case cover

Assembly

M6×22 hexagonal flange bolts that lock the thermostat;

2. Use clamp pliers to remove the hoop connected to the radiator, remove the water pipe, use t-shaped sleeve -10# to remove the four GB5789 M6 ×35 bolts that fix the radiator, and remove the radiator. (note: take care to protect the radiator fins from being damaged);

M6×60 hexagon flange bolts fixing the fan box cover, and take off the fan box cover.



Inspection

1. Check whether the O-ring of the thermostat is trimmed. If there is a trimmed edge, replace it with a new 16.5×1.95 EPDM o -ring;

2. Check the radiator fins for bumps and cracks. If so, replace with a new radiator;

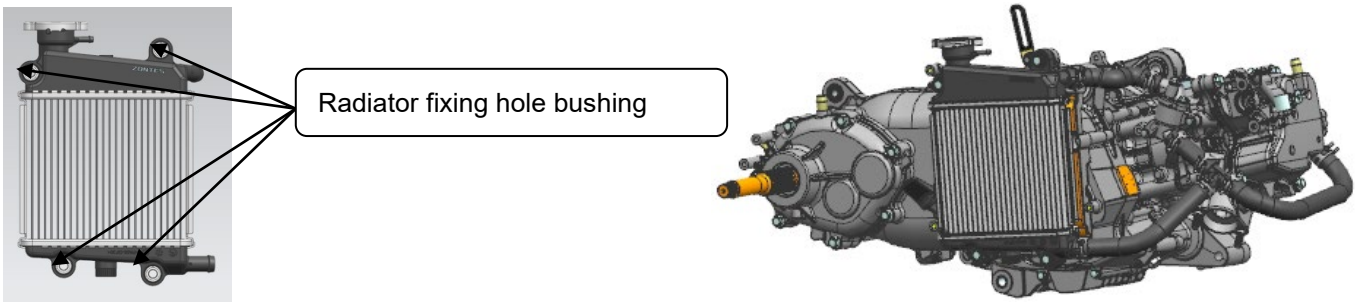
Install

1. Put the fan box cover in the corresponding position, take five m6×60 hexagonal flange bolts (zinc) and pre-tighten them diagonally, and then use the fixed torque wrench to fix the torque, the torque is 12±1.5 N.m;

2. Put the no-problem or brand-new radiator in the corresponding position, take four gb5789m6×35 bolts and pre-tighten them diagonally, and then use a fixed torque wrench to set the torque at 12±1.5 N.m; (as shown in the figure below, heat dissipation the bushings at the 4 fixing holes of the device must not be missed.)

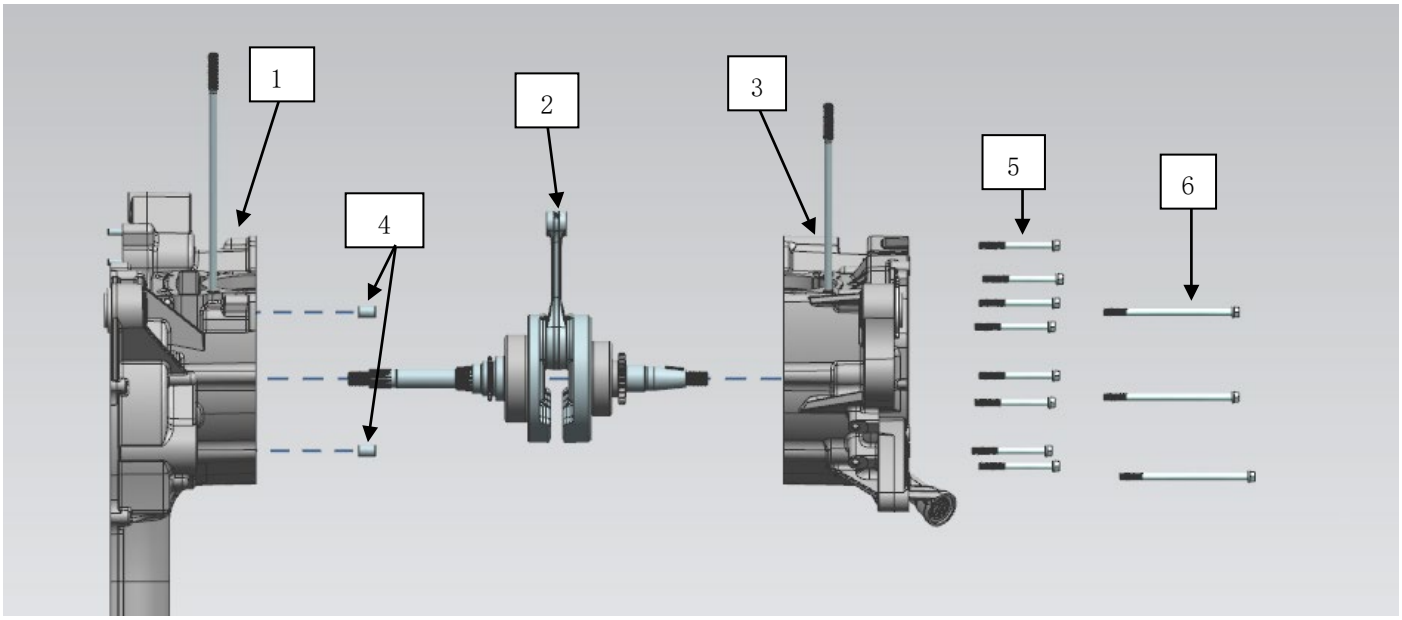
3. Install the thermostat assembly to the corresponding position of the cylinder head, and do not trim the o ring. Then screw in 2 m6×22 hexagonal flange bolts, pre-tighten and tighten with a fixed torque, the torque is 12±1.5 N.m;

4. Connect the cooling water pipe to the corresponding position of the radiator and thermostat, move the hoop to the proper position with clamp pliers, and clamp the water pipe tightly.



Crankcase

System components



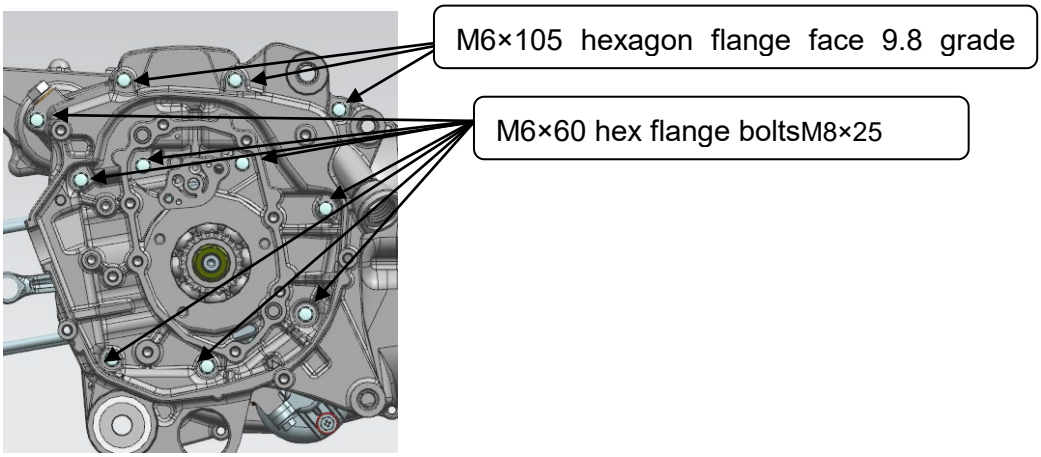
Parts information

No.	Name	Quantity
1.	ZT1P58MJ left crankcase parts (short wheelbase version)	1
2.	ZT1P58MJ crankshaft connecting rod parts	1
3.	ZT1P58MJ right crankcase parts	1
4.	Φ10×14 hollow positioning pin	2
5.	M6×60 hexagonal flange bolts (zinc)	8
6.	M6×105 hexagonal flange surface 9.8 grade bolts (zinc)	3

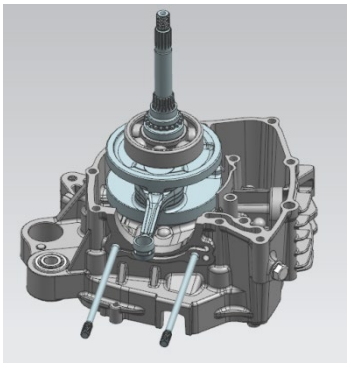
Crankcase

Assembly

M6×60 hexagonal flange bolts (zinc) and 3 m6×105 hexagonal flange surface 9.8 grade bolts (zinc) on the right crankcase side).

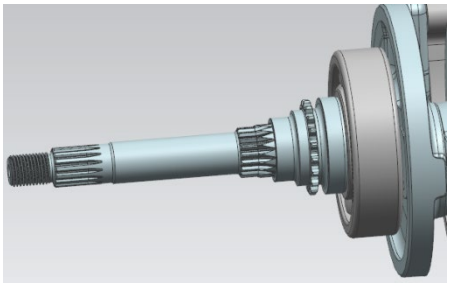


To tap symmetrically on the reinforcement hole of the right crankcase or the process boss to separate the left and right crankcases evenly, and take out the crankshaft and the right crankcase together. And take out the positioning pin together (note: do not hit the joint surface of the crankcase or other assembly joint surfaces; the right crankcase and the crankshaft belong to interference fit, and there is no need Assembly the two).



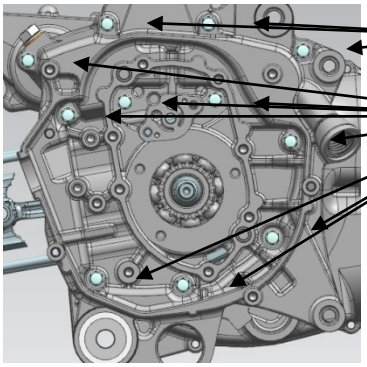
Inspection

1. Thoroughly clean the crankcase with a mild solvent before inspection, and remove the residual glue on the assembly joint surface;
2. Check the crankshaft gear, tooth surface and spline for abnormal wear and damage;
3. Check whether there is any abnormal wear and deformation on the surface of the crankshaft. If so, replace the crankshaft;
4. Turn the outer ring of the crankshaft bearing by hand to check whether the bearing rotates smoothly, whether there is stagnation or pitting, and if so, replace the crankshaft;
5. Check the crankcase. If any functional damage such as cracks or serious scratches on the joint surface is found in the crankcase, the corresponding crankcase should be replaced.



Install

Loctite 5900 plane sealant evenly and continuously on the joint surface of the left crankcase (note: if there is uneven glue application or even broken glue, the glue should be manually replenished);
2. Put two ϕ 10×14 hollow positioning pins into the corresponding positioning pin holes of the left box;
3. Spray an appropriate amount of engine oil on the outer ring of the left crankshaft bearing and the joint surface of the left crankcase bearing.
4. Align the crankshaft in the right crankcase with the bearing hole of the left crankcase, align the positioning pin hole on the joint surface of the right case with the positioning pin and install in place; (note: pay attention to protect the connecting rod to prevent scratches);
5. Take 8 m6×60 hexagonal flange bolts and 3 m6×105 hexagonal flange surface 9.8 grade bolts, put them into the corresponding holes in the right box, and use the air batch or t-shaped sleeve-8 from the positioning pin first. # pretighten evenly across the corners, tighten again, and then use a fixed torque wrench to correct the torque; (note: the pretightening force is 5±1N.m, and the correcting torque is 12±1.5N.m. After closing the box, push the connecting rod by hand, and the crankshaft should rotate smoothly. Stuck).


M6×105 hexagon flange face 9.8 grade
M6×60 hex flange boltsM8×25