INTRODUCTION

This supplement covers the construction, function and servicing procedures of the Honda UMK450T grass/ weed trimmer.
For service information that is not covered in this supplement, please refer to the UMR435T base shop manual (part number 62VL510) and UMK435T shop manual supplements (part numbers 62VL510Z and 62VL510Y).

All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at anytime without notice.

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As you read this manual, you will find information that is preceded by a NOTICE symbol. The purpose of this message is to help prevent damage to this Honda product, other property, or the environment.

SAFETY MESSAGES

Your safety and the safety of others are very important. To help you make informed decisions, we have provided safety messages and other safety information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing these products. You must use your own good judgement.

You will find important safety information in a variety of forms, including:

- Safety Labels – on the product.
- Safety Messages – preceded by a safety alert symbol ⚠ and one of three signal words, DANGER, WARNING, or CAUTION.
  These signal words mean:

⚠DANGER You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.

⚠WARNING You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.

⚠CAUTION You CAN be HURT if you don't follow instructions.

- Instructions – how to service these products correctly and safely.

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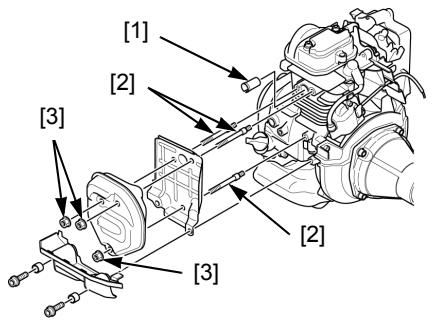
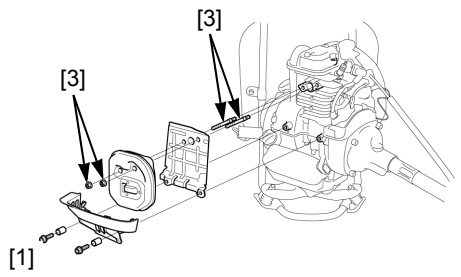
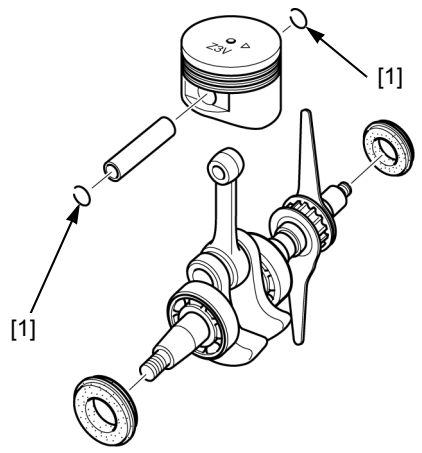
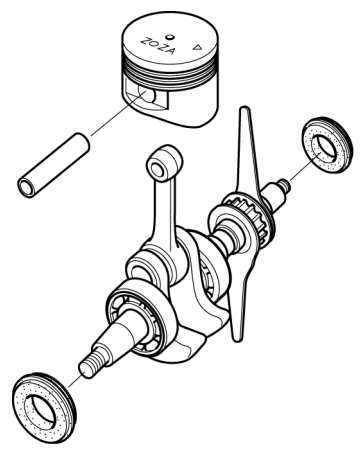
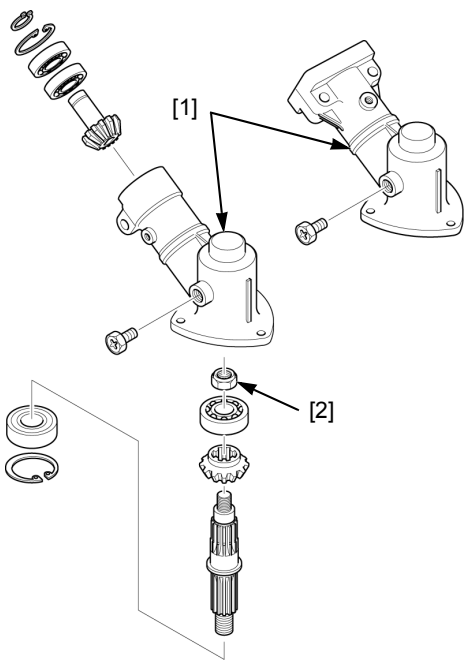
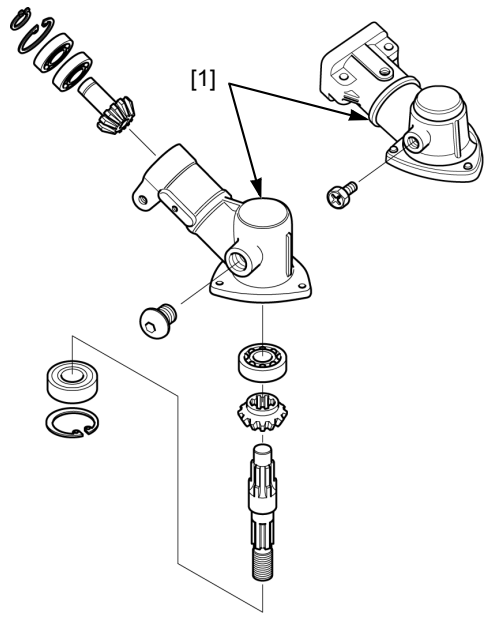
The marked sections contain no changes. They are not covered in this supplement.

OUTLINE OF CHANGES

Item	UMK450T	UMK435T
PORT LINER [1] STUD BOLT (5 mm) [2] SELF-LOCKING NUT (5 mm) [3]		
PISTON PIN CLIP [1]		
GEAR CASE [1] U-NUT [2]		

1. SPECIFICATIONS

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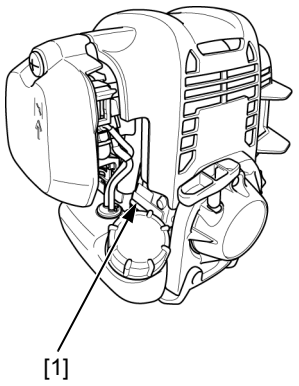
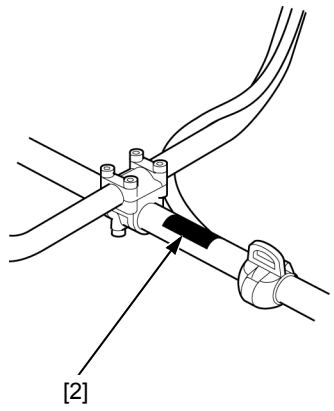
SERIAL NUMBER LOCATION

The engine serial number [1] is stamped on the crankcase lower side, and the frame serial number [2] is located on the frame pipe.

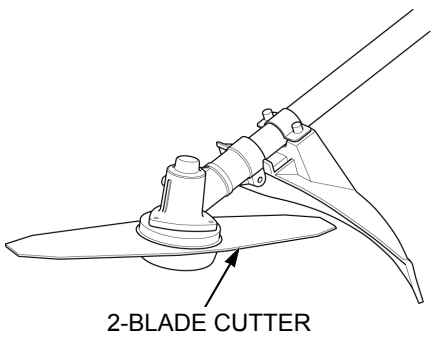
Always specify these numbers when inquiring about the engine or when ordering parts in order to obtain the correct parts for the brush cutter being serviced.

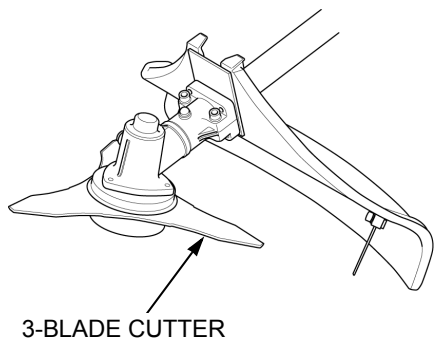


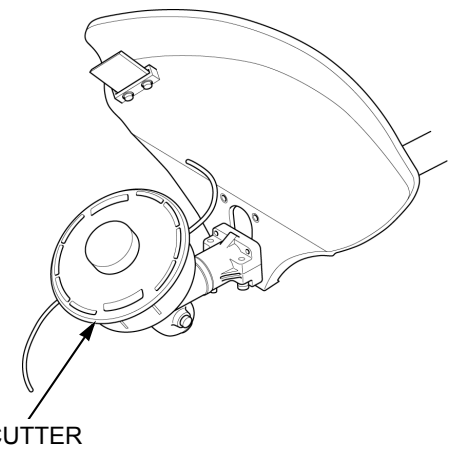


TYPE CODE

Type		U2TT	U2ST	U2NT	UTNT	UEBT	UEDT
Cutting attachment	2-blade cutter	○	○	○			
	3-blade cutter					○	○
	Nylon cutter				○	○	○







DIMENSIONS AND WEIGHTS SPECIFICATIONS

Model		UMK450T							
Description code		HAPT							
Type		U2TT	U2ST	U2NT	UTNT	UEBT		UEDT	
Cutting attachment	Type	2-blade cutter			Nylon cutter	3-blade cutter	Nylon cutter	3-blade cutter	Nylon cutter
	Diameter	350 mm (13.8 in)			440 mm (17.3 in)	255 mm (10.0 in)	440 mm (17.3 in)	255 mm (10.0 in)	440 mm (17.3 in)
	Rpm *1	5,250 min^{-1} (rpm)							
	Weight	0.48 kg (1.06 lbs)			0.37 kg (0.82 lbs)	0.37 kg (0.82 lbs)	0.38 kg (0.84 lbs)	0.37 kg (0.82 lbs)	0.38 kg (0.84 lbs)
Overall length		1,950 mm (76.8 in)			1,875 mm (73.8 in)	1,905 mm (75.0 in)	1,875 mm (73.8 in)	1,905 mm (75.0 in)	1,875 mm (73.8 in)
Overall width		640 mm (25.2 in)							
Overall height		440 mm (17.3 in)			470 mm (18.5 in)				
Dry weight *2		8.2 kg (18.1 lbs)			8.4 kg (18.5 lbs)				
Operating weight		9.2 kg (20.3 lbs)			9.1 kg (20.1 lbs)	9.3 kg (20.5 lbs)	9.1 kg (20.1 lbs)	9.3 kg (20.5 lbs)	9.1 kg (20.1 lbs)

*1: When engine rotation speed is 7,000 min^{-1} (rpm)
*2: Without cutting attachment

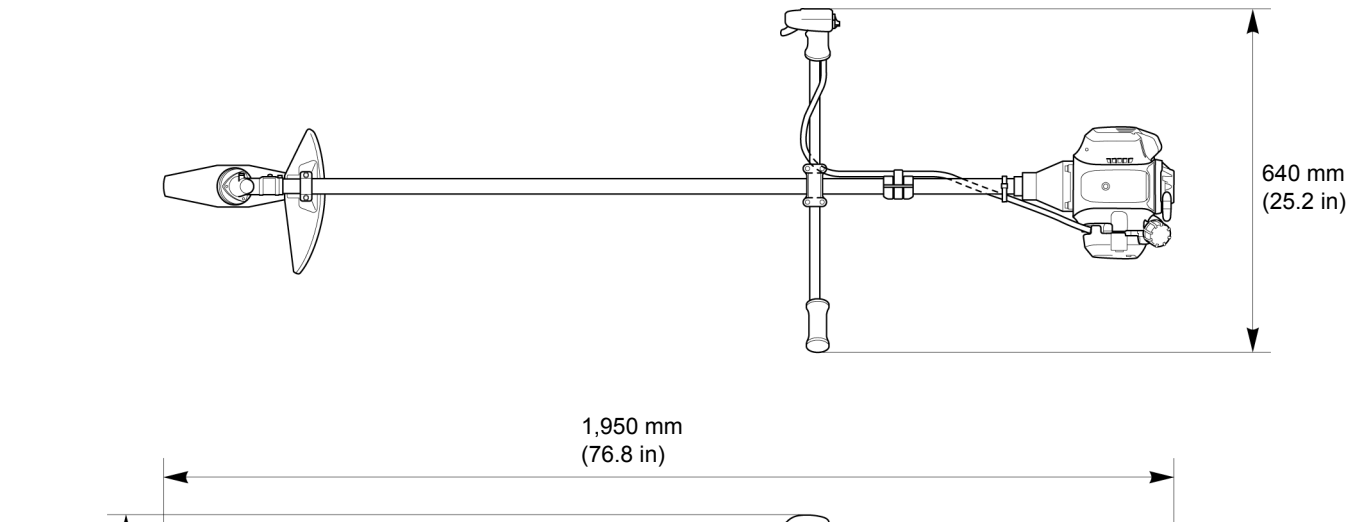
ENGINE SPECIFICATIONS

Model	GX50T
Description code	GCCFT
Type	4 stroke, overhead cam, single cylinder, vertical type
Displacement	47.9 cm^3 (2.92 cu–in)
Bore x stroke	43.0 x 33.0 mm (1.69 x 1.30 in)
Net power (SAE J1349)*	1.47 kW (2.0 PS) / 7,000 min^{-1} (rpm)
Maximum net torque (SAE J1349)*	2.2 N·m (0.22 kgf·m, 1.6 lbf·ft) / 5,000 min^{-1} (rpm)
Compression ratio	8.0:1
Ignition system	Transistorized magneto ignition
Ignition timing	B.T.D.C. 30°
Spark plug	CMR5H (NGK)
Lubrication system	Pumping spray
Oil capacity	0.13 Liters (0.14 US qt, 0.11 Imp qt)
Fuel tank capacity	0.63 Liters (0.166 US gal, 0.139 Imp gal)
Recommended oil	SAE 10W-30 API service classification SE or later
Cooling system	Forced air
Starting system	Recoil starter
Stopping system	Ignition primary circuit ground
Carburetor	Diaphragm type
Air cleaner	Dry (paper) type
Breather system	Reed valve type
Fuel used	Unleaded gasoline

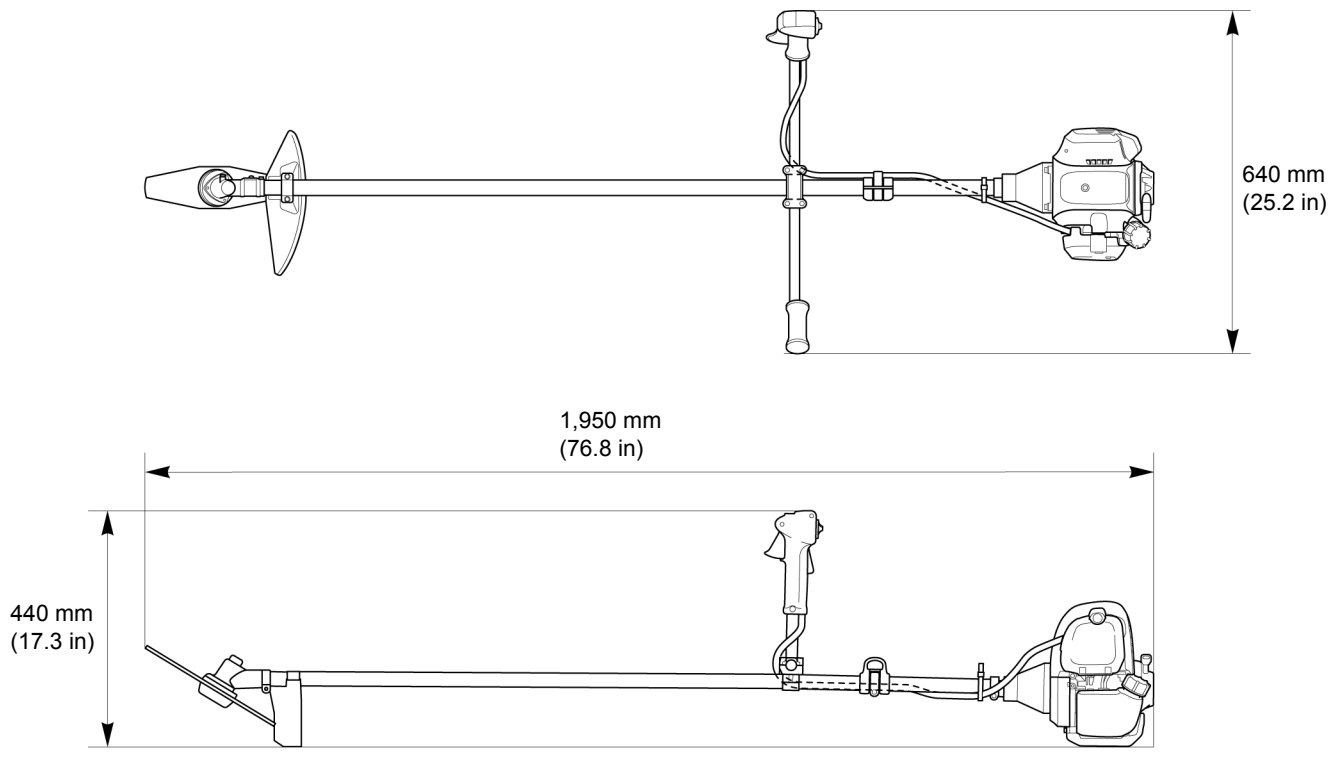
*: The power rating of the engine indicated in this document is the net power output tested on a production engine for the engine model and measured in accordance with SAE J1349 at 7,000 rpm (Engine Net Power) and at 5,000 rpm (Engine Max. Net Torque). Mass production engines may vary from this value. Actual power output for the engine installed in the final machine will vary depending on numerous factors, including the operating speed of the engine in application, environmental conditions, maintenance, and other variables.

DIMENSIONAL DRAWINGS

U2TT/U2ST types:

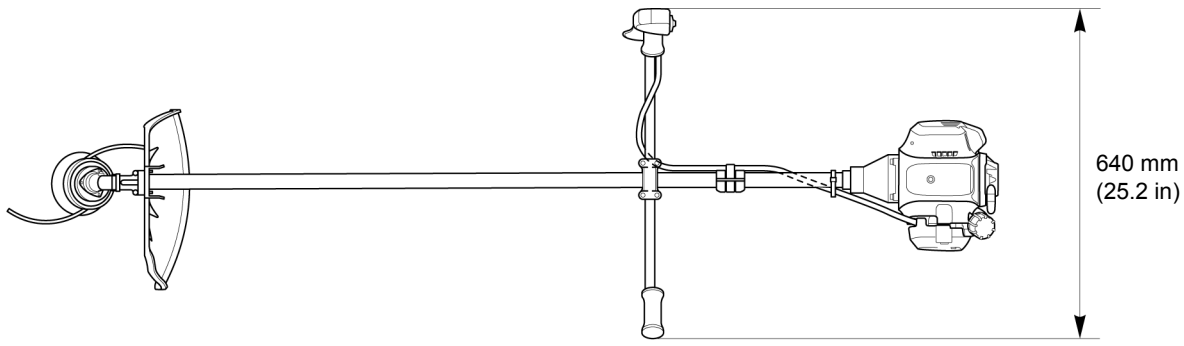


U2NT type:



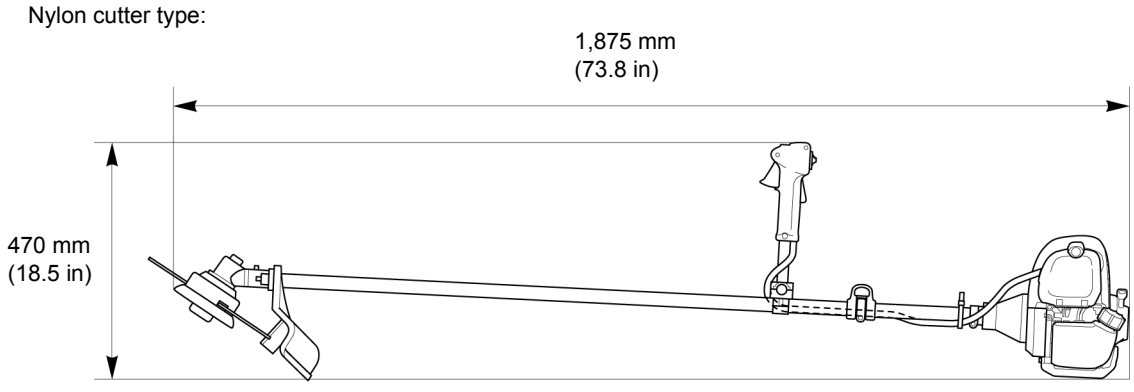
UTNT/UEDT/UEBT types:

Nylon cutter type shown:



3-blade cutter type:

Nylon cutter type:



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MAINTENANCE STANDARDS

ENGINE

Unit: mm (in)

Part	Item		Standard	Service limit
Engine	Idle speed		3,100 ± 200 min^{-1} (rpm)	–
	Cylinder compression		1.03 MPa (10.5 kgf/cm^2, 149 psi) at 2,000 min^{-1} (rpm)	–
Carburetor	Main jet	U2TT/U2NT/ UTNT/UEDT type	# 44	–
		U2ST type	# 43	–
		UEBT type	# 46	–
Cylinder	Sleeve I.D.		43.000 – 43.015 (1.6929 – 1.6935)	43.100 (1.6968)
Piston	Skirt O.D.		42.970 – 42.990 (1.6917 – 1.6925)	42.900 (1.6890)
	Piston-to-cylinder clearance		0.010 – 0.045 (0.0004 – 0.0018)	0.120 (0.0047)
	Piston pin bore I.D.		9.002 – 9.012 (0.3544 – 0.3548)	9.050 (0.3563)
Piston pin	Pin O.D.		8.994 – 9.000 (0.3541 – 0.3543)	8.950 (0.3524)
	Piston pin-to-piston pin bore clearance		0.002 – 0.018 (0.0001 – 0.0007)	0.050 (0.0020)
Piston rings	Ring width	Top/Second	0.970 – 0.990 (0.0382 – 0.0390)	0.920 (0.0362)
	Ring side clearance	Top/Second	0.015 – 0.056 (0.0006 – 0.0022)	0.120 (0.0047)
	Ring end gap	Top/Second	0.15 – 0.30 (0.006 – 0.012)	0.60 (0.024)
		Oil (side rail)	0.20 – 0.70 (0.008 – 0.028)	1.0 (0.04)
Connecting rod	Small end I.D.		8.983 – 8.994 (0.3537 – 0.3541)	–
Valves	Valve clearance	IN	0.08 ± 0.02	–
		EX	0.11 ± 0.02	–
	Valve stem O.D.	IN	3.470 – 3.485 (0.1366 – 0.1372)	3.400 (0.1339)
		EX	3.435 – 3.450 (0.1352 – 0.1358)	3.380 (0.1331)
	Guide I.D.	IN/EX	3.500 – 3.518 (0.1378 – 0.1385)	3.560 (0.1402)
	Guide-to-stem clearance	IN	0.015 – 0.048 (0.0006 – 0.0019)	0.098 (0.0039)
		EX	0.050 – 0.083 (0.0020 – 0.0033)	0.120 (0.0047)
	Valve spring free length		21.77 (0.857)	21.00 (0.827)
Cam pulley	Cam height		22.49 (0.885)	22.19 (0.874)
	Cam pulley I.D.		4.020 – 4.070 (0.1583 – 0.1602)	4.100 (0.1614)
	Cam pulley shaft O.D.		3.990 – 4.000 (0.1571 – 0.1575)	3.950 (0.1555)
Cylinder barrel	Cam pulley shaft installation port I.D.		4.000 – 4.018 (0.1575 – 0.1582)	4.050 (0.1594)
	Valve lifter installation port I.D.		6.005 – 6.023 (0.2364 – 0.2371)	6.050 (0.2382)
Spark plug	Gap		0.6 – 0.7 (0.024 – 0.028)	–
Ignition Coil	Resistance	Primary coil	0.63 – 0.77 Ω	–
		Secondary coil	5.4 – 6.6 kΩ	–
	Air gap (at flywheel)		0.2 – 0.4 (0.008 – 0.016)	–
Clutch	Lining thickness		2.0 (0.008)	1.0 (0.004)

TORQUE VALUES

ENGINE TORQUE VALUES

Item	Thread Dia. (mm)	Torque values		
		N·m	kgf·m	lbf·ft
Spark plug	M10	11.8	1.2	8.7
Fan cover mounting bolt (*CT bolt)	M5	6.4	0.7	4.7
Lower crankcase mounting bolt (*CT bolt)	M5	6.4	0.7	4.7
Recoil starter pulley	M6	6.4	0.7	4.7
Flywheel nut	M8	30	3.1	22
Ignition coil mounting socket bolt	M4	3.4	0.3	2.5
Valve adjusting screw lock nut	M5	4.9	0.5	3.6
Top cover socket bolt	M5	5.0	0.5	3.7
Clutch bolt	M8	15.2	1.5	11
Muffler mounting nut	M5	6.4	0.7	4.7
Air cleaner case mounting nut	M5	4.9	0.5	3.6
Muffler stud bolt	M5	4.4	0.4	3.2
Air cleaner cover screw	Special 6 x 16 screw	2.3	0.2	1.7

*CT bolt: Self-tapping bolt

FRAME TORQUE VALUES

Item	Thread Dia. (mm)	Torque values		
		N·m	kgf·m	lbf·ft
Clutch housing mounting socket bolt	M6	6.9	0.7	5.1
Engine mounting bracket pinch socket bolt	M6	6.1	0.6	4.5
Engine mounting bracket mounting screw	M5	4.2	0.4	3.1
Hanger holder pinch screw	M5	2.5	0.3	1.8
Hanger B mounting torx bolt	M5	2.5	0.3	1.8
Handle holder A socket bolt	M6	6.1	0.6	4.5
Handle holder C socket bolt	M6	6.9	0.7	5.1
Throttle lever mounting screw	M5	2.3	0.2	1.7
Throttle lever tight screw	M4	1.5	0.2	1.1
Throttle cable lock nut	M6	1.8	0.2	1.3
Ground terminal screw	M5	4.2	0.4	3.1
Grass deflector mounting socket bolt (U2TT/U2ST/U2NT types)	M6	6.9	0.7	5.1
Grass deflector mounting socket bolt (UTNT/UEDT types)	M5	5.2	0.5	3.8
Grass deflector mounting socket bolt (UEBT type)	M5	5.2	0.5	3.8
Nylon cutting plate nut (UTNT/UEBT/UEDT types)	M6	2.6	0.3	1.9
Gear case pinch socket bolt (UTNT/UEBT/UEDT types)	M6	9.0	0.9	6.6
Gear case mounting screw (UTNT/UEBT/UEDT types)	M5	4.2	0.4	3.1
Gear case bolt (Grease point)	M6	5.0	0.5	3.7
Gear case pinch socket bolt (U2TT/U2ST/U2NT types)	M6	6.1	0.6	4.5
Grass guard mounting screw	M5	4.2	0.4	3.1
Gear shaft nut	M8	11.5	1.2	8
Blade cutter mounting nut (Left-hand threads)	M10	24.0	2.4	18

LUBRICATION & SEAL POINT

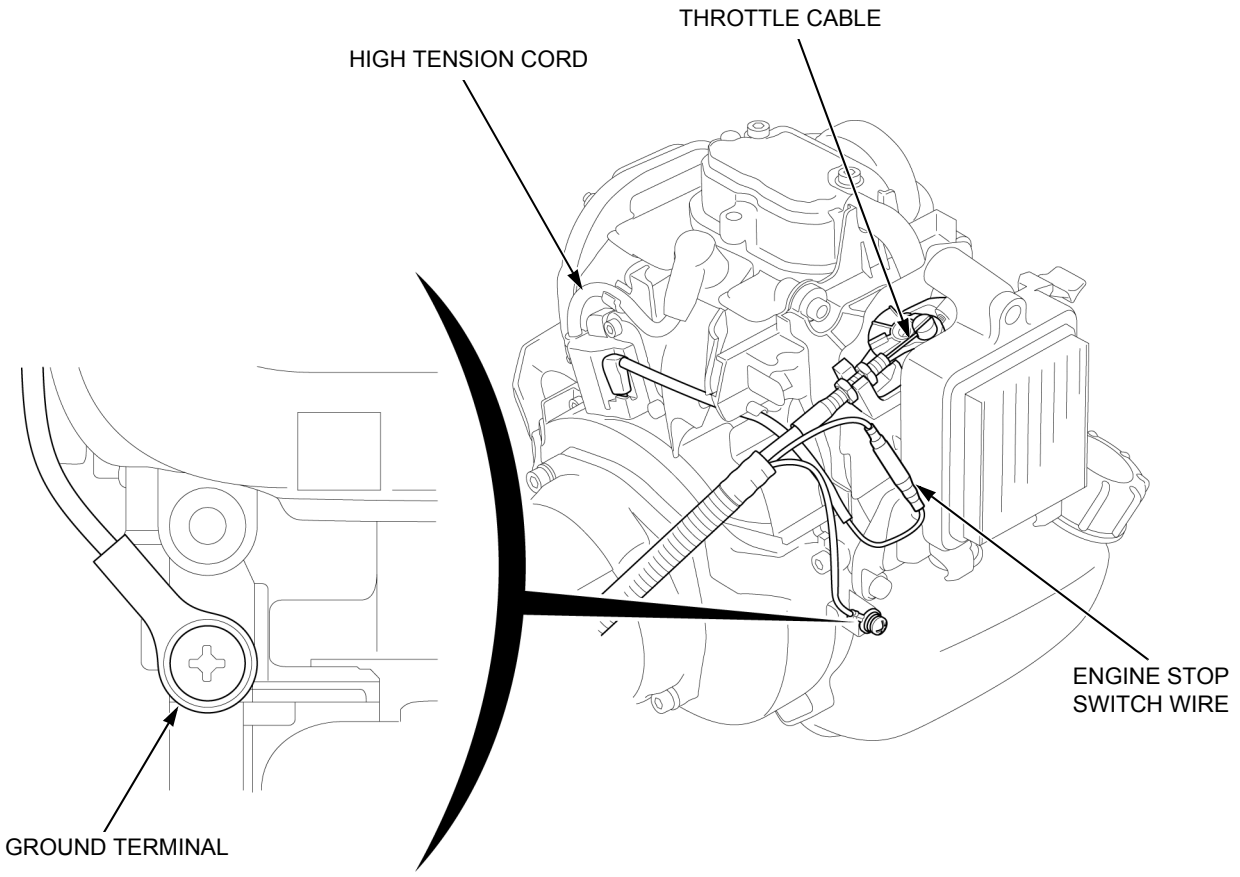
ENGINE

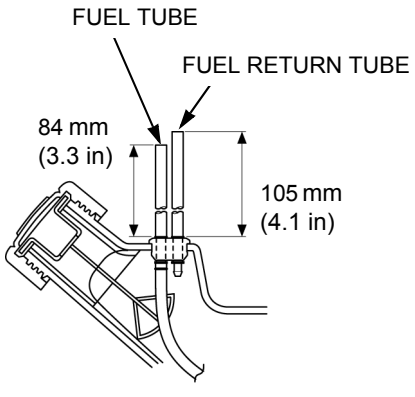
Material	Location	Remarks
Use molybdenum oil solution (mixture of engine oil and molybdenum grease in a ratio of 1:1)	Piston outer surface	Amount: 0.7 g (0.02 oz) (reference)
	Piston pin outer surface	Amount: 0.7 g (0.02 oz) (reference)
	Piston rings	Amount: 0.5 g (0.02 oz) (reference)
	Cylinder barrel inner surface	Amount: 0.9 g (0.03 oz) (reference)
Engine oil	Each ball bearing rolling surface Cam pulley cam profile and journal Cam pulley decompressor pin whole surface Cam pulley gear teeth Valve lifter shaft whole surface Valve lifter slipper Valve stem sliding surface Valve spring whole surface Connecting rod big end inner surface O–ring Flywheel nut threaded area and seating surface	
Grease (Daphne eponex or equivalent)	Oil seal lip	
Multi-purpose grease	Recoil starter case (Recoil starter reel sliding area)	
Liquid sealant (ThreeBond®#1216, 1216E or equivalent)	Cylinder barrel and the lower crankcase mating surfaces	
Locking agent (ThreeBond® #1322N or equivalent)	Air cleaner mounting socket bolt (5 x 25 mm)	

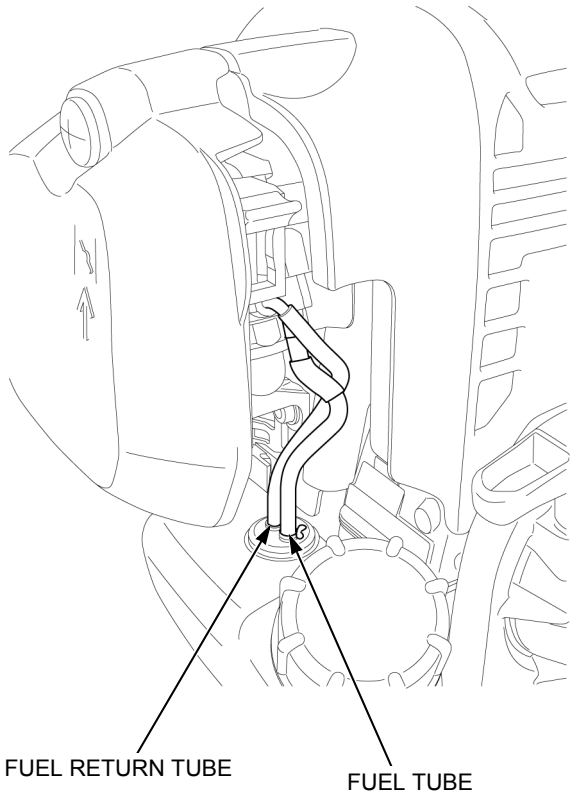
FRAME

Material	Location	Remarks
Grease (LEU HER ENTERPRISE CO., LTD. NE-XD-2 or equivalent)	Drive shaft whole surface	
	Gear case inside area	15 – 20 g

CABLE/HARNESS ROUTING







MEMO

3. MAINTENANCE

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IDLE SPEED CHECK/ADJUSTMENT ····· 3-8

VALVE CLEARANCE CHECK/ADJUSTMENT ····· 3-9

FUEL TUBES CHECK ····· 3-10

MAINTENANCE SCHEDULE

ITEM		REGULAR SERVICE PERIOD (2) Perform at every indicated month or operating hour interval, whichever comes first.						
		Each use	First month or 10 hrs.	Every 3 months or 25 hrs.	Every 6 months or 50 hrs.	Every year or 100 hrs.	Every 2 years or 300 hrs.	Refer to page
Engine oil	Check level	○						3-3
	Change		○		○			3-3
Air cleaner	Check	○						3-4
	Clean			○ (1)				3-4
	Replace					○		3-4
Spark plug	Check–Adjust					○		3-4
	Replace						○	3-4
Throttle cable	Check	○						3-6
Carrying harness	Check	○						–
Cutting attachment	Check	○						3-7
Grass deflector	Check	○						3-7
Engine cooling fins	Check				○ (1)			–
Nuts, bolts fasteners	Check (Retighten if necessary)	○						3-9*
Fuel tank	Clean					○		3-11*
Fuel filter	Check					○		3-12*
Clutch shoe and drum	Check				○ (2) (4)			9-6
Wear out of gear case	Check				○ (2)			13-10
Gear case	Check–Clean	○						13-10
	Grease	Every year or 30 hours						3-8
Drive shaft	Grease					○		3-9*
Idle speed	Check–Adjust					○ (2)		3-8
Valve clearance	Check–Adjust					○ (2)		3-9
Combustion chamber	Clean	Every 2 years or 300 hours						11-13*
Fuel tubes	Check	Every 2 years (Replace if necessary) (2)						3-10
Oil tubes	Check	Every 2 years (Replace if necessary) (2)						11-2

(1) Service more frequently when used in dusty areas.

(2) Log hours of operation to determine proper maintenance intervals.

(3) These consumption parts should be replaced even a short period if it is necessary.

(*): Refer to page of base shop manual (UMR435T: 62VL510)

ENGINE OIL LEVEL CHECK

Check the oil level with the engine stopped and place the engine on a level surface.

Remove the oil filler cap [1].

Check the oil level [2].

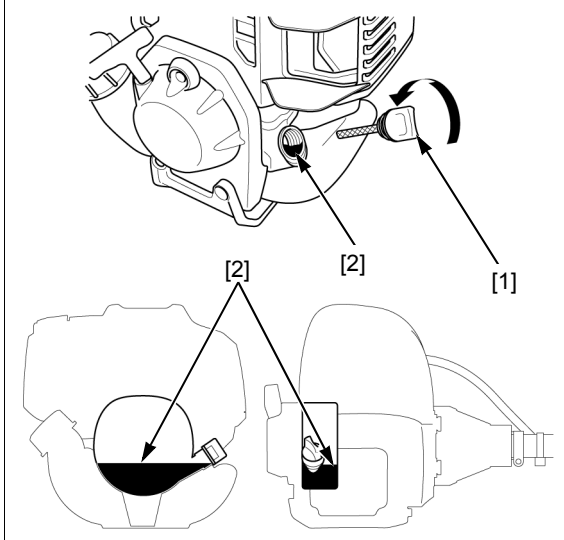
If the oil level is lower than the bottom of the oil filler neck (upper level), fill to the upper level with the recommended oil.
Do not overfill.

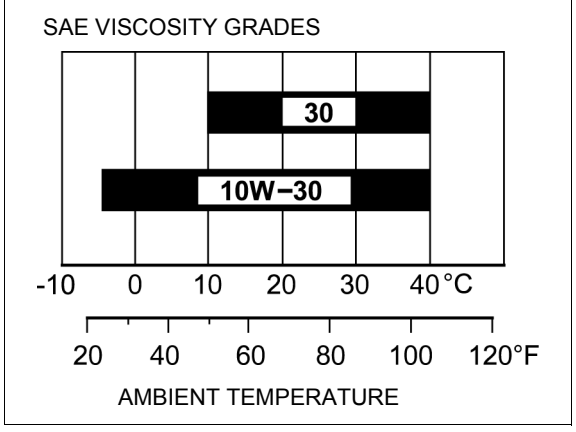
RECOMMENDED ENGINE OIL:
SAE 10W-30
API Service classification SE or later

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil.

10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the recommended range.

Tighten the oil filler cap.





ENGINE OIL CHANGE

Drain the oil in the engine while the engine is warm. Warm oil drains quickly and completely.

Check that the fuel tank cap [1] is tightened securely.

Remove the oil filler cap [2].
Tilt the engine toward the oil filler cap side and drain the used oil in a manner that is compatible with the environment. We suggest you take used oil in a sealed container to your local recycling center or service station for reclamation. Do not throw it in the trash, pour it into the ground, or down a drain.

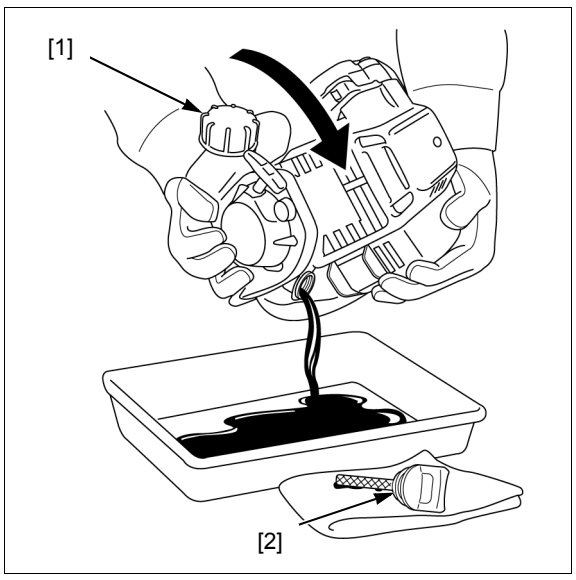
⚠CAUTION

Used engine oil contains substances that have been identified as carcinogenic. If repeatedly left in contact with the skin for prolonged periods, it may cause skin cancer. Wash your hands thoroughly with soap and water as soon as possible after contact with used engine oil.

Fill with recommended oil to the upper level.

ENGINE OIL CAPACITY:
0.13 Liters (0.14 US qt, 0.11 Imp qt)

Tighten the oil filler cap.

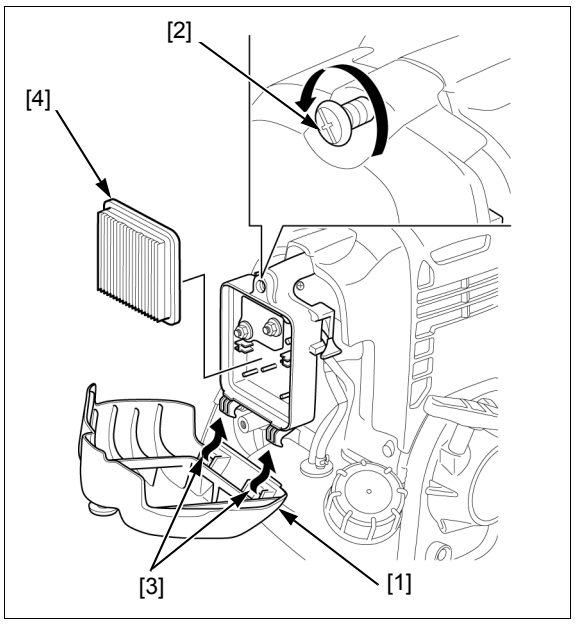


AIR CLEANER ELEMENT CHECK/CLEANING

A dirty air cleaner will restrict air flow to the carburetor, reducing engine performance. If the engine is operated in dusty areas, clean the air cleaner more often than specified in the MAINTENANCE SCHEDULE.

Remove the air cleaner cover [1] by loosening the screw [2] on the top of the cover and unhooking its two lower tabs [3].
Remove the air cleaner element [4].

Inspect the air cleaner element, and replace if damaged.



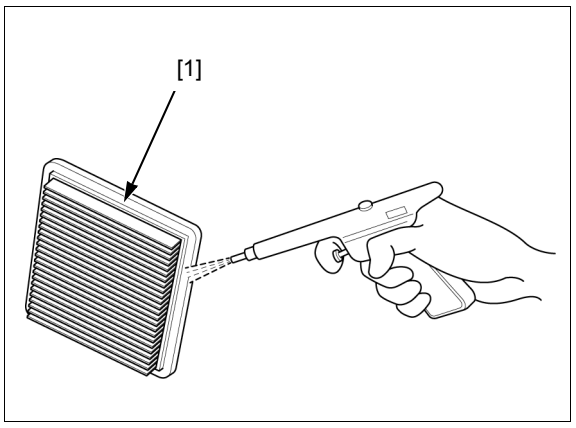
ELEMENT CLEANING

Tap the element [1] several times on a hard surface to remove dirt, or blow compressed air (not exceeding 200 kPa, 2.0 kgf/cm^2, 29 psi) through the element from the inside.

Never try to brush off dirt; brushing will force dirt into the paper fibers.

Wipe dirt from the inside of the air cleaner cover and air cleaner case, using a moist rag.
Be careful to prevent dirt from entering the air duct that leading to the carburetor.

Install the air cleaner element and air cleaner cover.



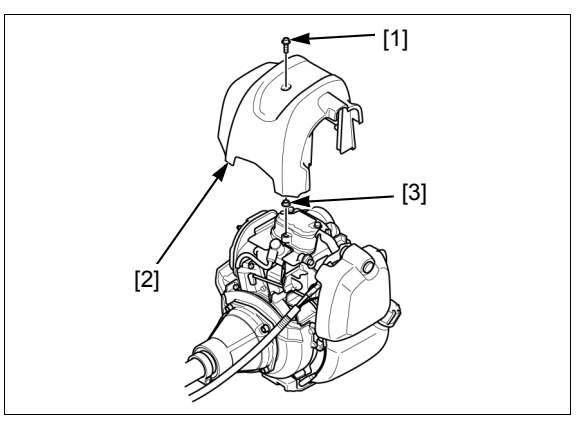
SPARK PLUG CHECK/ADJUSTMENT/REPLACEMENT

⚠CAUTION

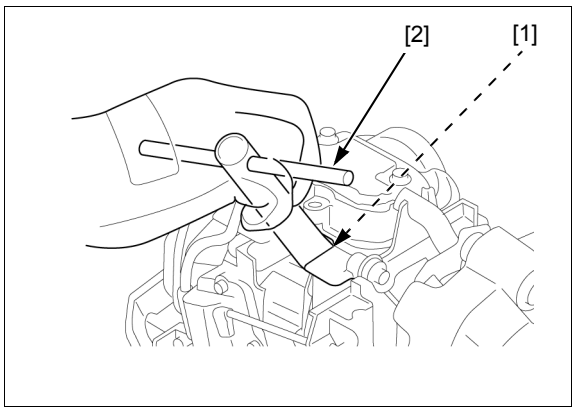
If the engine has been running, the engine will be very hot. Allow it to cool before proceeding.

Remove the bolt [1] and top cover [2].

The collar [3] holds the bolt.



Disconnect the spark plug cap and remove the spark plug [1] using a spark plug wrench [2].



Visually inspect the spark plug. Replace the plug if the insulator [1] is cracked or chipped.

Remove carbon or other deposits with wire brush.

Check the sealing washer [2] for damage.

Replace the spark plug if the sealing washer is damaged.

RECOMMENDED SPARK PLUG: CMR5H (NGK)

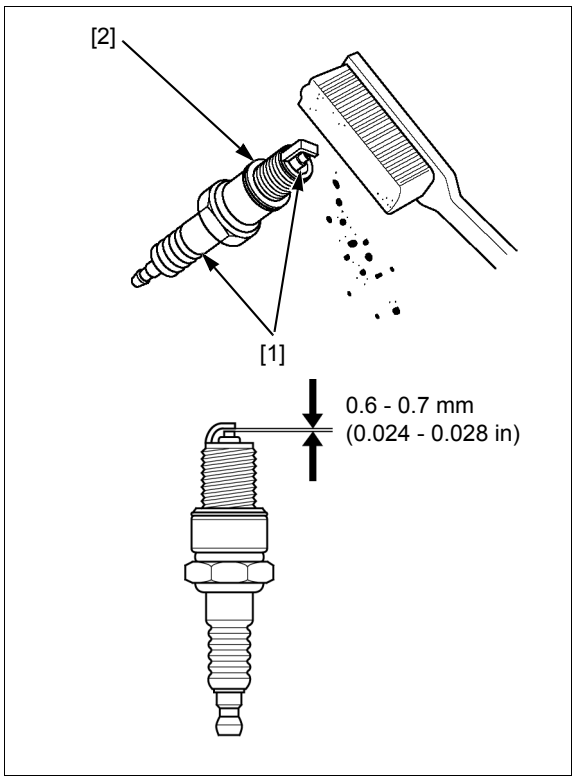
Measure the plug gap with a wire-type feeler gauge. If the measurement is out of the specification, adjust by bending the side electrode.

SPARK PLUG GAP: 0.6 – 0.7 mm (0.024 – 0.028 in)

Install the spark plug finger tight to seat the washer, then tighten with a plug wrench (an additional 1/2 turn if a new plug) to compress the sealing washer.

If you are reusing a plug, tighten 1/8 – 1/4 turn after the plug seats.

TORQUE: 11.8 N·m (1.2 kgf·m, 8.7 lbf·ft)



NOTICE

A loose spark plug can become very hot and can damage the engine. Overtightening can damage the threads in the cylinder head.

Install the spark plug cap.

Install the top cover and tighten the bolt to the specified torque.

TORQUE: 3.0 N·m (0.31 kgf·m, 2.2 lbf·ft)

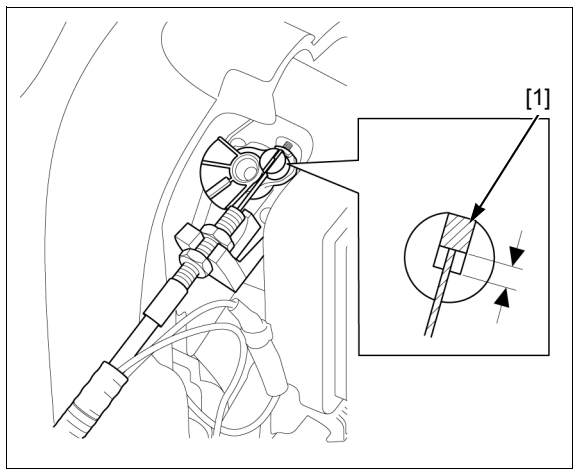
THROTTLE CABLE CHECK/ADJUSTMENT

Remove the air cleaner cover (page 3-4).

Move the throttle lever lightly and check whether the carburetor side throttle cable free play is 0.5 – 2.5 mm (0.02 – 0.10 in) at the end of the cable [1].

FREE PLAY: 0.5 – 2.5 mm (0.02 – 0.10 in)

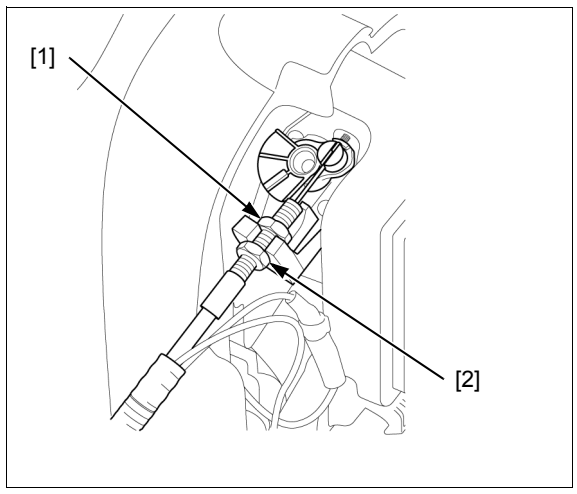
If the throttle cable free play is out of the specification, adjust as follows.



Adjust the throttle cable free play to the specification by loosening the lock nut [1] and turning the adjust nut [2]. After adjustment, tighten the lock nut to the specified torque.

TORQUE: 1.8 N·m (0.18 kgf·m, 1.3 lbf·ft)

Install the air cleaner cover (page 3-4).



CUTTING ATTACHMENT CHECK

2/3-BLADE TYPE

Turn the engine stop switch to the stop position and remove the spark plug cap.

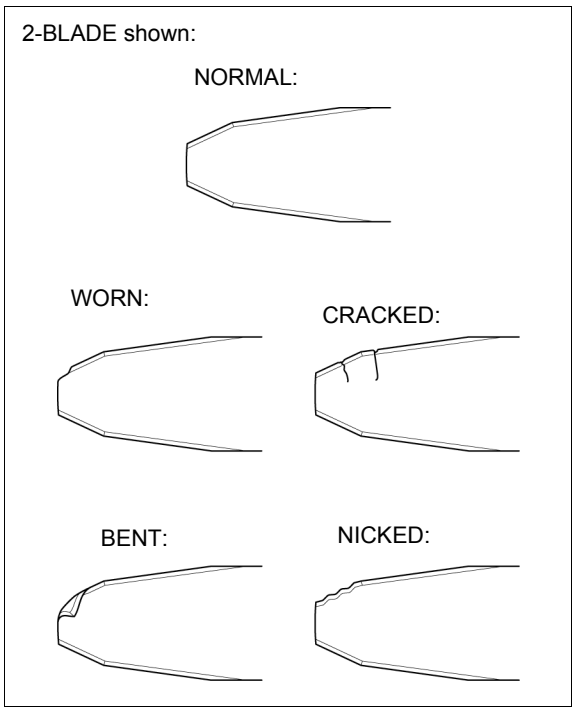
Check the blade cutter for wear and damage, and check for the dull blade.

If the blade is worn, bent, cracked, or has other damage, replace the blade cutter with a new one (page 13-2).

Check the special nut (left-hand thread) tightening the blade cutter for looseness.

If the nut is loose, tighten it to specified torque.

TORQUE: 24.0 N·m (2.4 kgf·m, 18 lbf·ft)



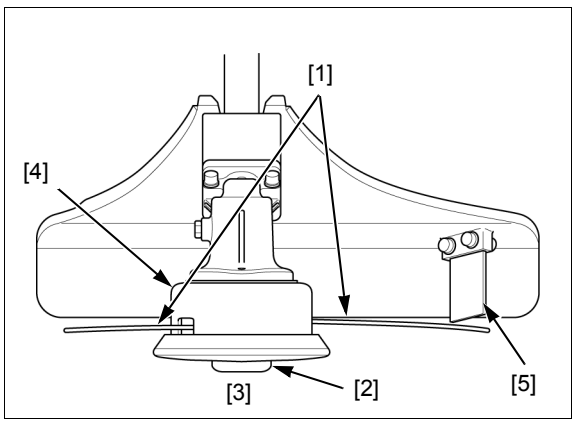
NYLON CUTTER TYPE

Check the nylon cutter for looseness.
Tighten the nylon cutter securely if it is loose (page 13-8).

If the grass deflector is damaged, replace it.

Check the nylon line [1] fluffing.
If the nylon line becomes short or shredded, start the engine, and tap on the spool [2] firmly against the ground [3].

By tapping the spool on the ground, the nylon line comes out of the housing [4]. As the nylon cutting plate [5] mounted on the grass deflector adjusts the length of the nylon line automatically by trimming off the extra length, you can get the correct length of the nylon line just by tapping the spool.



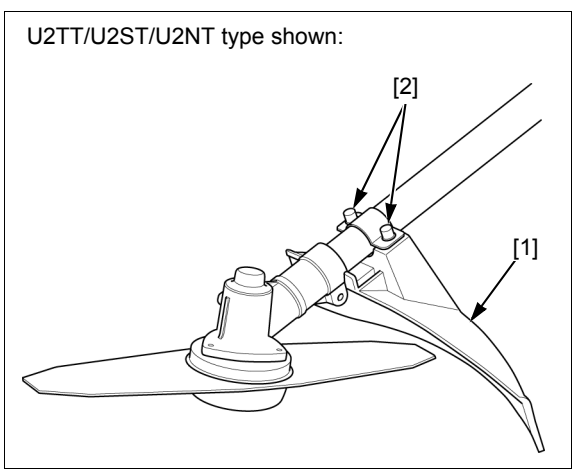
GRASS DEFLECTOR CHECK

Turn the engine stop switch to the stop position and remove the spark plug cap.

Inspect the grass deflector [1] to be sure that they are correctly installed and are not damaged.
If the grass deflector is damaged, replace it.

Check the grass deflector mounting bolts [2] for looseness.
If bolts is loose, tighten it to specified torque.

TORQUE:
U2TT/U2ST/U2NT types: 6.9 N·m (0.70 kgf·m, 5.1 lbf·ft)
UTNT/UEBT/UEDT types: 5.2 N·m (0.53 kgf·m, 3.2 lbf·ft)



GEAR CASE GREASE UP

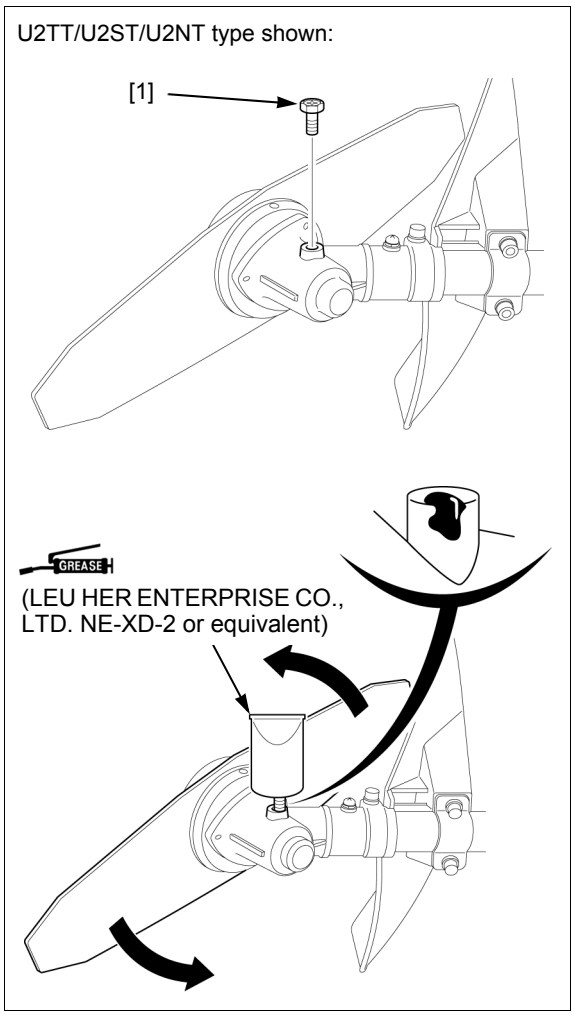
Turn the engine stop switch to the stop position and remove the spark plug cap.

Remove the bolt [1] from the gear case.

Fill the gear case with the grease until it runs out from the bolt hole (about 15 – 20 g).

After filling with the grease, tighten the bolt to the specified torque.

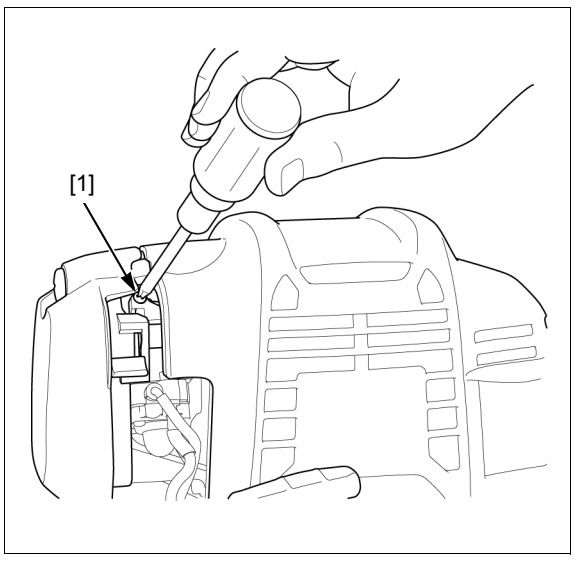
TORQUE: 5.0 N·m (0.51 kgf·m, 3.7 lbf·ft)



IDLE SPEED CHECK/ADJUSTMENT

Start the engine and allow it to warm up to normal operating temperature. Then, adjust the idle speed by turning the throttle stop screw [1] right or left.

STANDARD: 3,100 ± 200 min^{-1} (rpm)



VALVE CLEARANCE CHECK/ADJUSTMENT

Valve clearance inspection and adjustment must be performed with the engine cold.

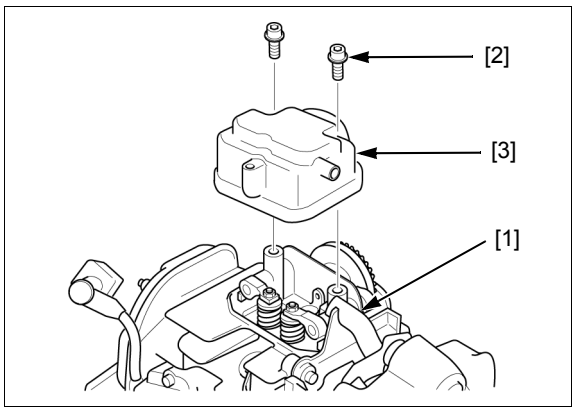
Remove the top cover (page 3-4).

Disconnect the spark plug cap from the spark plug.

Remove the breather tube [1] from the head cover.

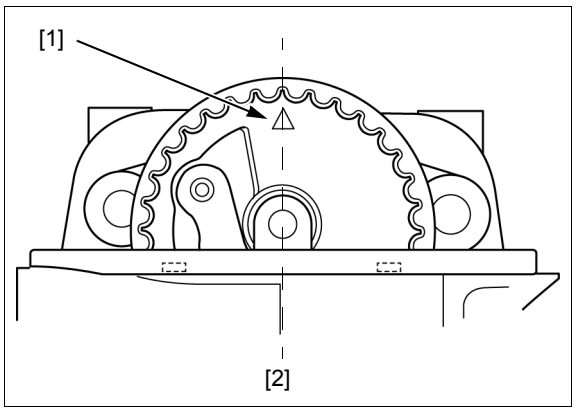
Remove the two socket bolts [2] and head cover [3].

- Engine oil can leak out when removing the head cover. Catch the leaking oil with a suitable material and wipe up the area immediately.



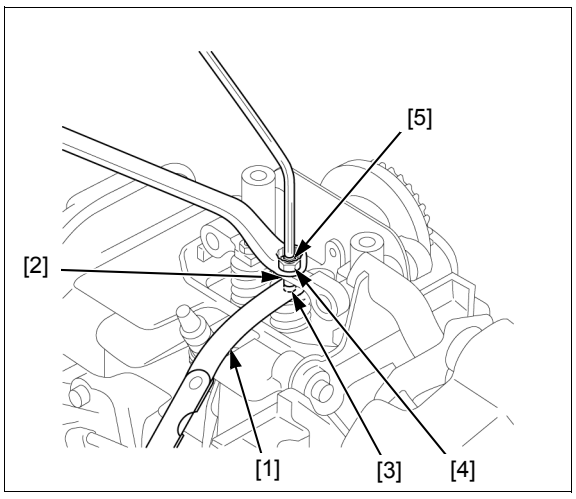
Set the piston at top dead center of the compression stroke. Align the " △ " mark [1] on the cam pulley with the cylinder head center [2].

If the exhaust valve and intake valve are opened, align the mark on the starter pulley with the mark on the fan cover again by rotating the engine 360°.



Insert a feeler gauge [1] between the valve rocker arm [2] and valve stem [3] to measure the valve clearance.

VALVE CLEARANCE:
IN: 0.08 ± 0.02 mm
EX: 0.11 ± 0.02 mm



If adjustment is necessary, proceed as follows.

Loosen the valve adjusting lock nut [4] and adjust the valve clearance by turning the adjusting screw [5] right or left.

Hold the valve adjusting screw and tighten the valve adjusting screw lock nut to the specified torque.

TORQUE: 4.9 N·m (0.50 kgf·m, 3.6 lbf·ft)

Recheck the valve clearance, and if necessary, readjust the clearance.

Install the head cover and top cover.

TORQUE:
Top cover bolt: 3.0 N·m (0.31 kgf·m, 2.2 lbf·ft)

FUEL TUBES CHECK

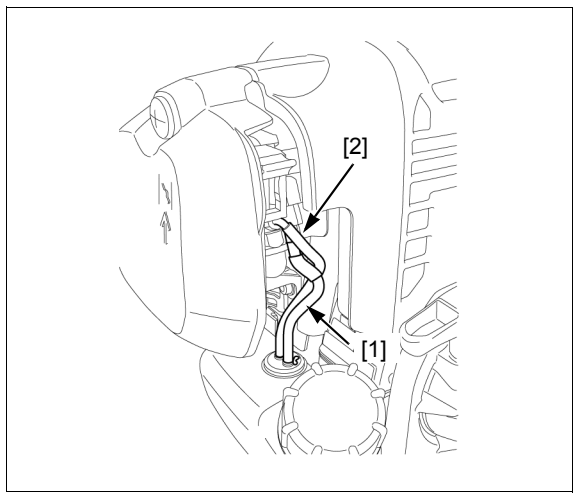
⚠WARNING

Gasoline is highly flammable and explosive.
You can be burned or seriously injured when handling fuel.
- Keep heat, sparks, and flame away.
- Wipe up spills immediately.
- Handle fuel only outdoors.

Check the fuel tube [1] and fuel return tube [2] for damage, fuel leakage, corrosion, and other abnormalities. Check that the tubes are not interfering with the neighboring parts.

Start the engine and check for fuel leakage.

Replace the tube if there is damage, fuel leakage, corrosion, etc.



5. FUEL SYSTEM

AIR CLEANER
REMOVAL/INSTALLATION ····· 5-2

CARBURETOR
REMOVAL/INSTALLATION ····· 5-3

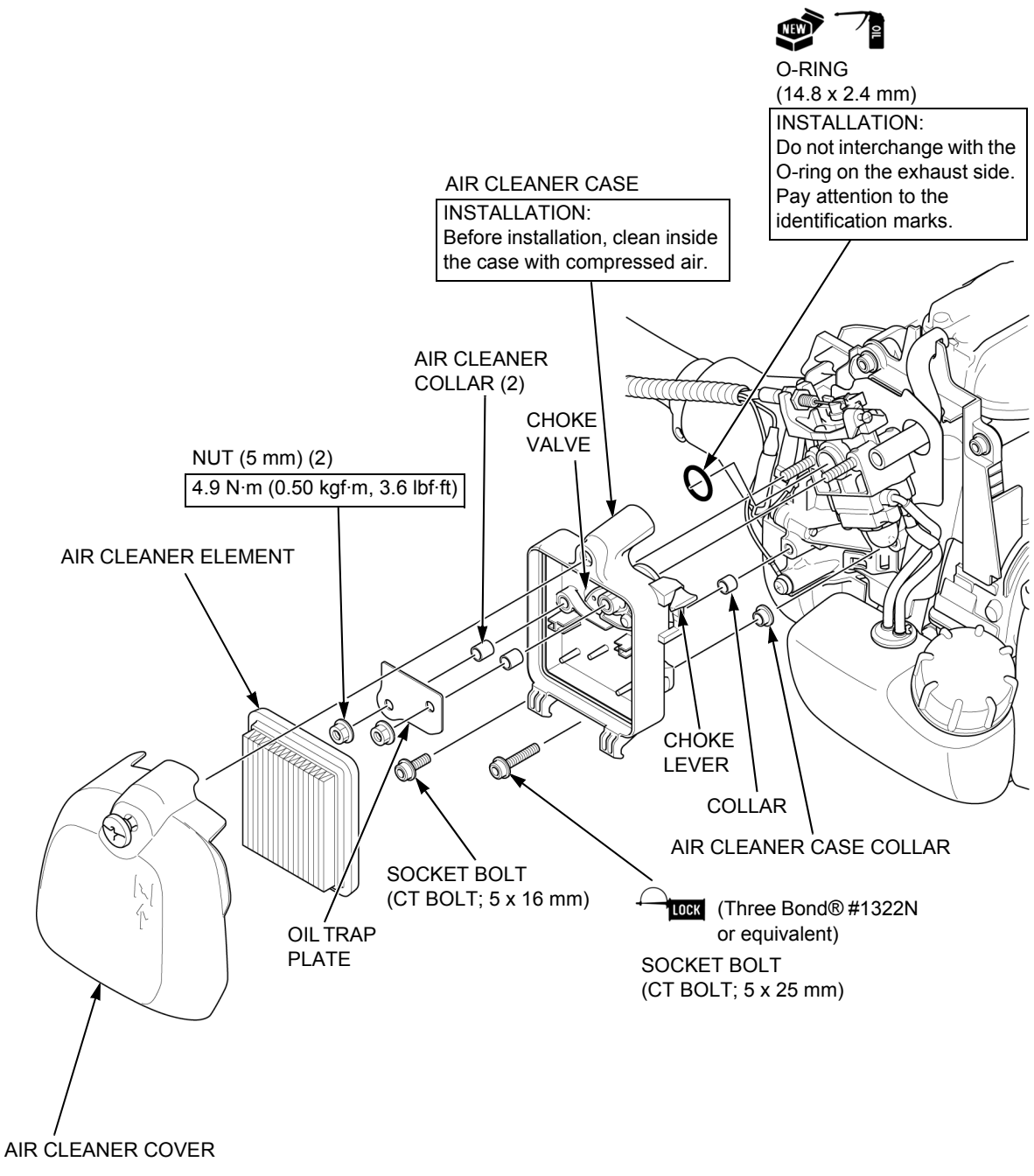
FUEL TANK
REMOVAL/INSTALLATION ····· 5-4

CARBURETOR
DISASSEMBLY/ASSEMBLY ····· 5-5

AIR CLEANER REMOVAL/INSTALLATION

NOTICE

If these parts are left out, dirt will enter the intake system damaging the engine.



CARBURETOR REMOVAL/INSTALLATION

⚠ WARNING

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.
- Keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

NOTICE

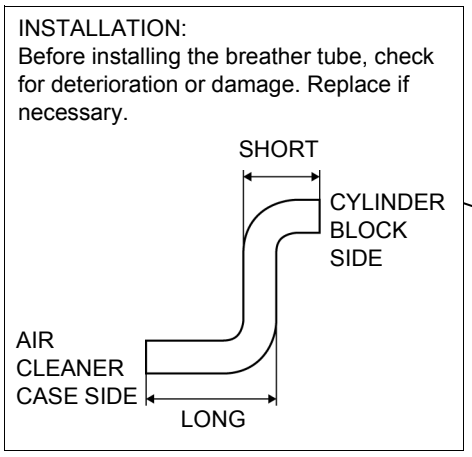
If these parts are left out, dirt will enter the intake system damaging the engine.

Remove the air cleaner (page 5-2).
Disconnect the throttle cable (page 14-2).
Drain the carburetor by pushing the primer pump.

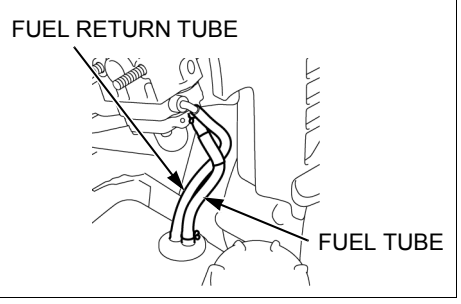
After installation, adjust the throttle cable free play (page 3-6).

BREATHER TUBE

INSTALLATION:
Before installing the breather tube, check for deterioration or damage. Replace if necessary.



INSTALLATION:
Connect the fuel tube and fuel return tube as shown. Do not interchange.



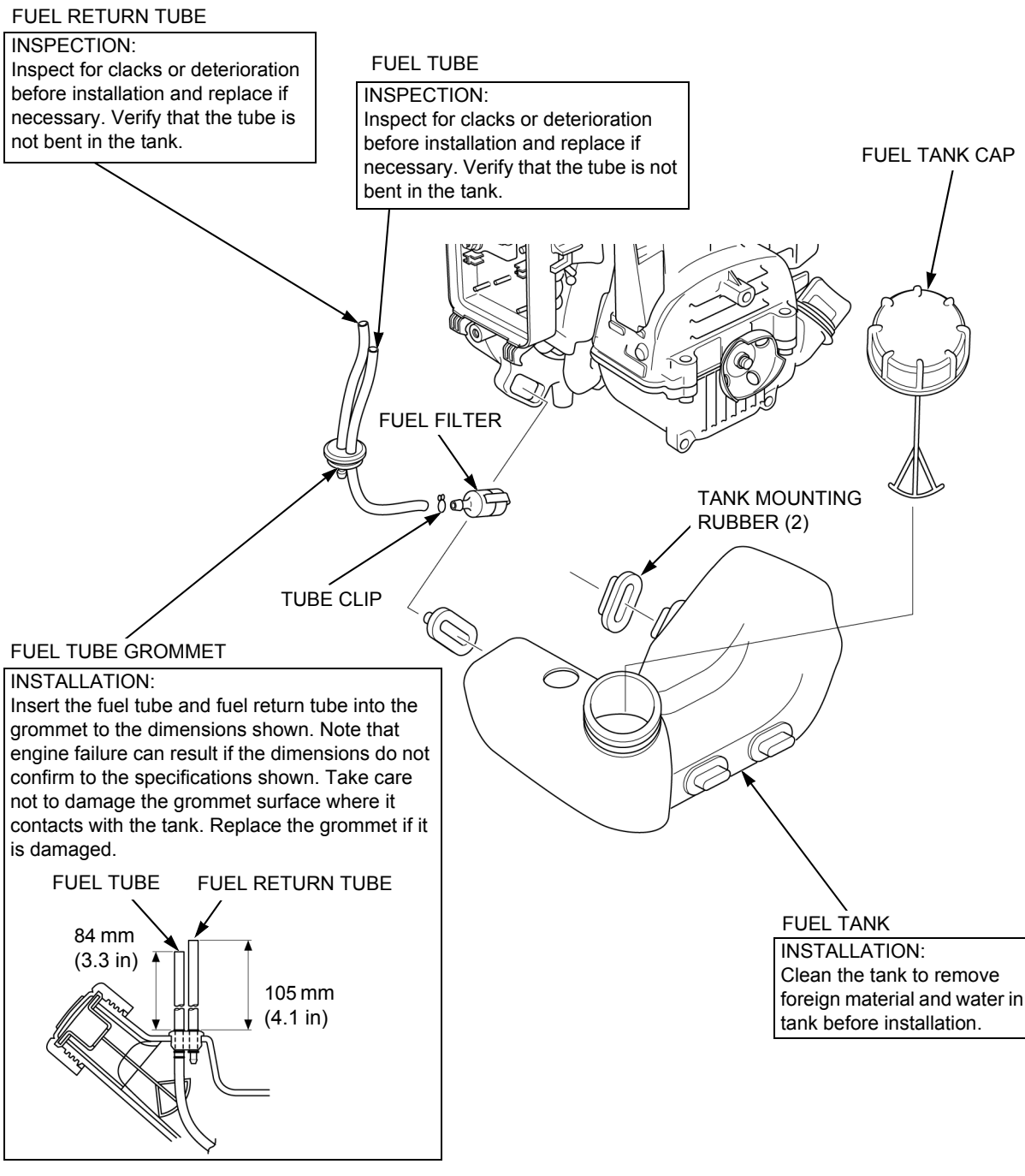
FUEL TANK REMOVAL/INSTALLATION

⚠WARNING

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.
- Keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

Remove the following:

– Recoil starter (page 7-2)

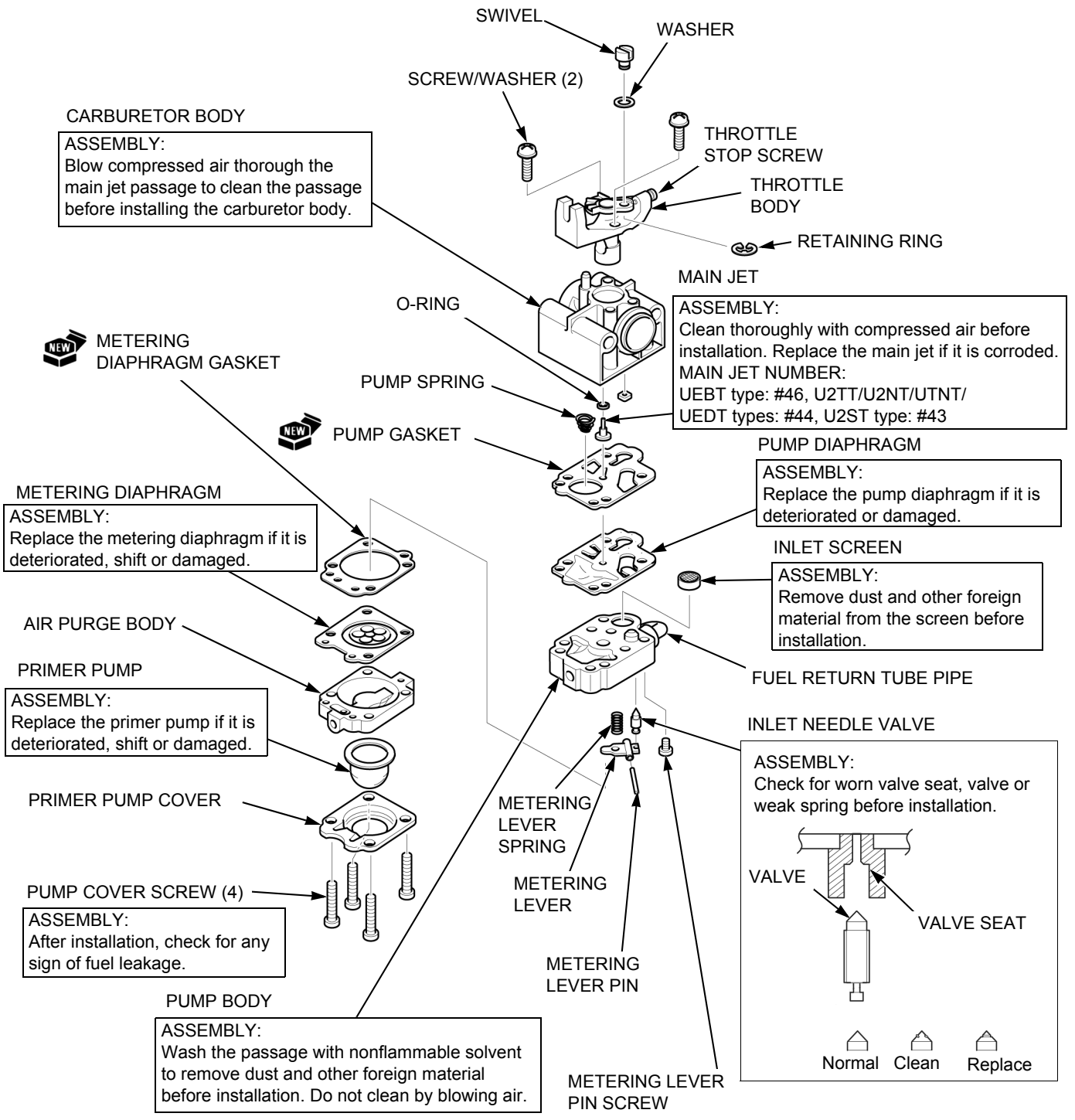


CARBURETOR DISASSEMBLY/ASSEMBLY

⚠ WARNING

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.
- Keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

Remove the carburetor (page 5-3).



MEMO

6. IGNITION SYSTEM

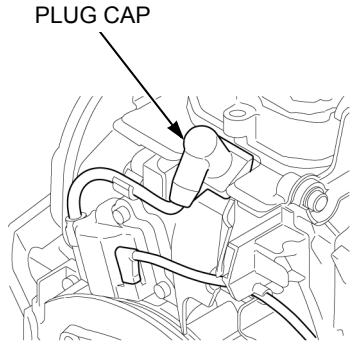
IGNITION COIL REMOVAL/INSTALLATION ····· 6-2
SPARK TEST ····· 6-3
IGNITION COIL INSPECTION ····· 6-3
IGNITION COIL AIR GAP ADJUSTMENT ···· 6-4

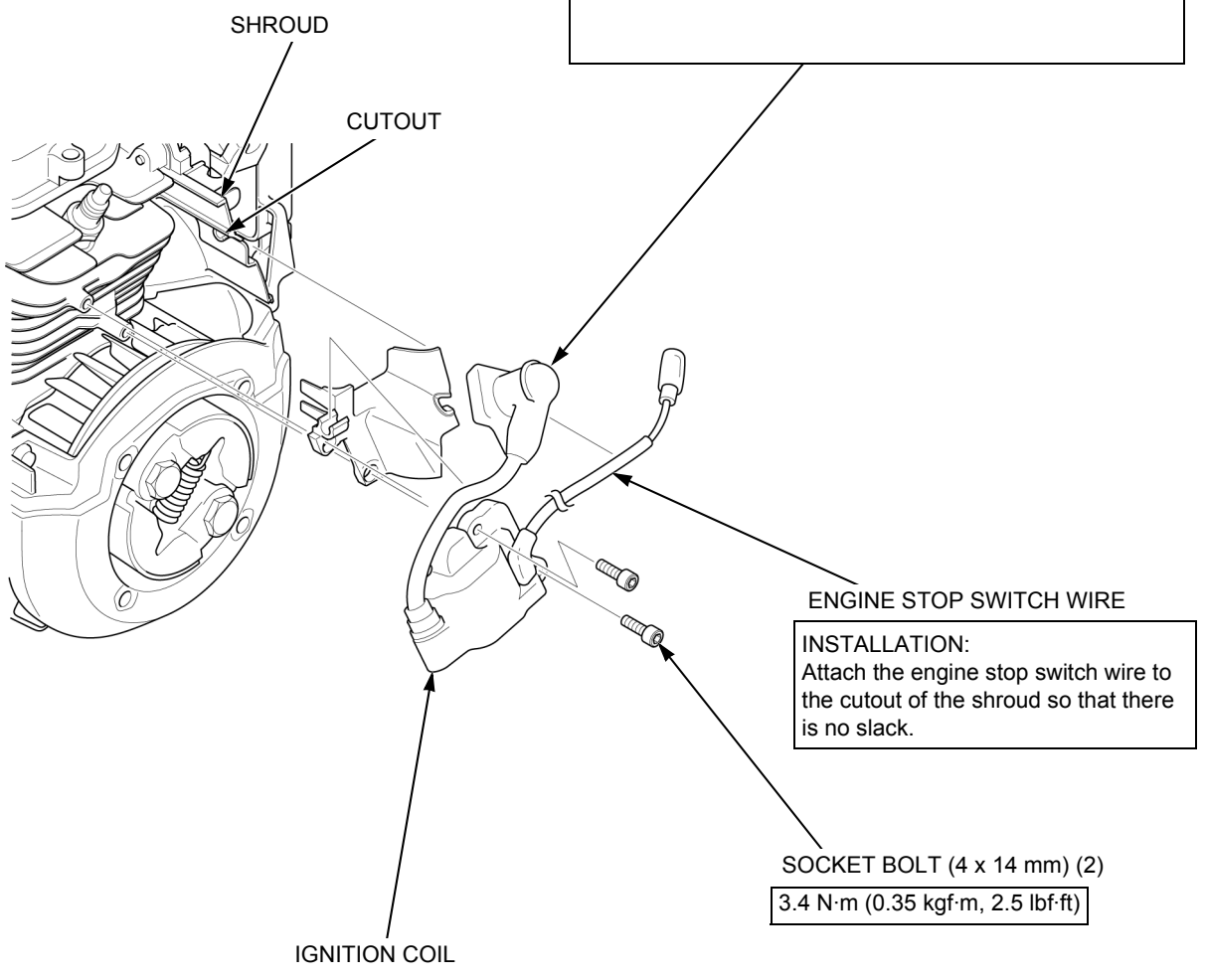
IGNITION COIL REMOVAL/INSTALLATION

Remove the top cover (page 3-4).

HIGH TENSION CORD

INSTALLATION:
Attach the plug cap in the direction as shown in the figure.
Attach the high tension cord to the high tension cord clip so that there is no slack.





SPARK TEST

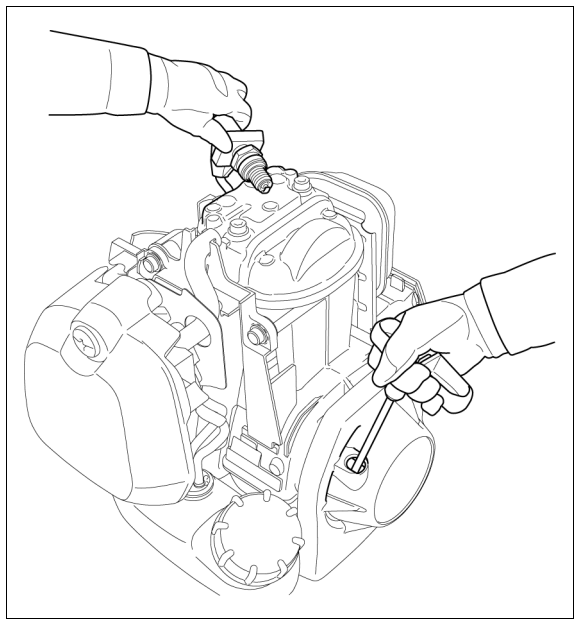
⚠ WARNING

Gasoline is highly flammable and explosive.
You can be burned or seriously injured when handling fuel.
- Keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

Unburnt gas can ignite if it is left in the cylinder.

Do not touch the flywheel fins when pulling the recoil starter.

Drain the fuel tank into a suitable container.
Remove the fuel tube, fuel return tube and fuel tube grommet from the fuel tank.
Drain the carburetor into a suitable container by pushing the primer bulb.
Insert the fuel tube and fuel return tube and install the fuel tube grommet to the fuel tank securely.
Remove the spark plug.
Pull the recoil starter several times to expel unburnt gas.
Install the removed spark plug on the plug cap.
Ground the negative (–) electrode of the spark plug to the engine block.
Pull the recoil starter to check for sparks.

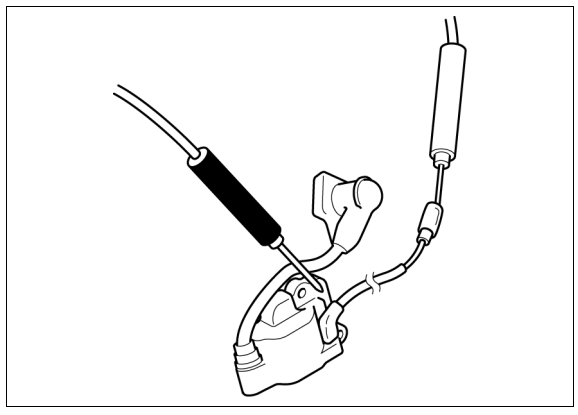


IGNITION COIL INSPECTION

PRIMARY SIDE

Measure the resistance of the primary coil by attaching the ohmmeter leads to the ignition coil terminal and the iron core.

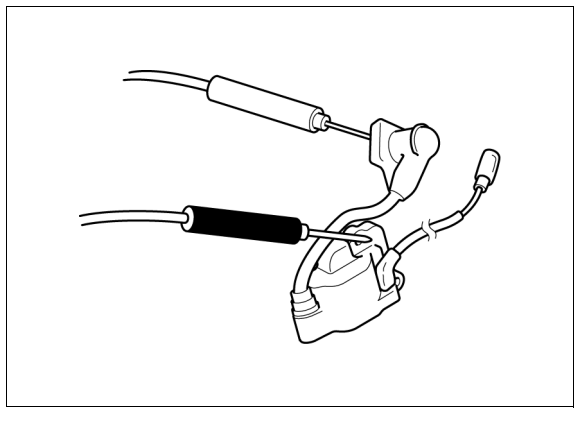
Resistance: **0.63 – 0.77 Ω**



SECONDARY SIDE

Measure the resistance of the secondary coil by attaching the ohmmeter leads to the inside of the spark plug cap and the iron core.

Resistance: **5.4 – 6.6 kΩ**



IGNITION COIL AIR GAP ADJUSTMENT

Remove the top cover (page 3-4).

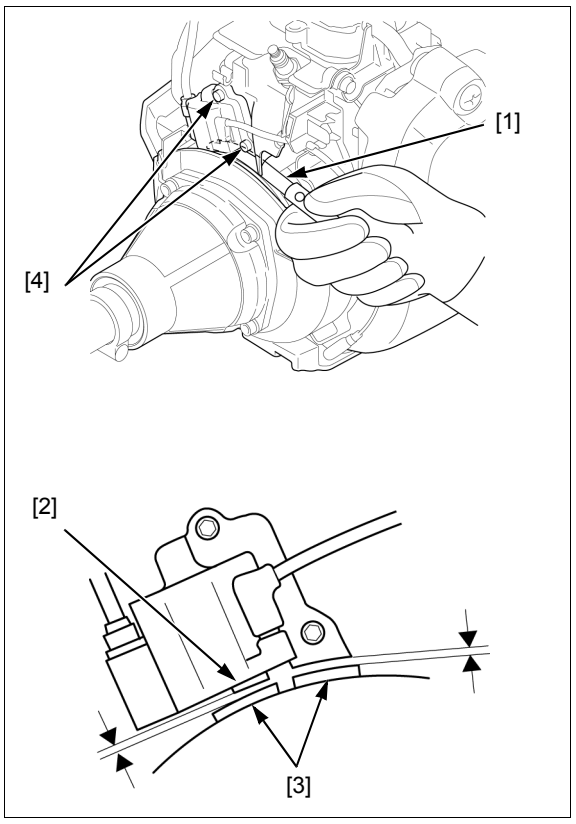
Insert an appropriate feeler gauge [1] between the ignition coil [2] and magnetic part [3] of the rotor.

Air gap (at flywheel): **0.2 – 0.4 mm (0.008 – 0.016 in)**

Push the ignition pulse generator firmly against the rotor and tighten the two bolts [4]. Remove the feeler gauge.

NOTICE

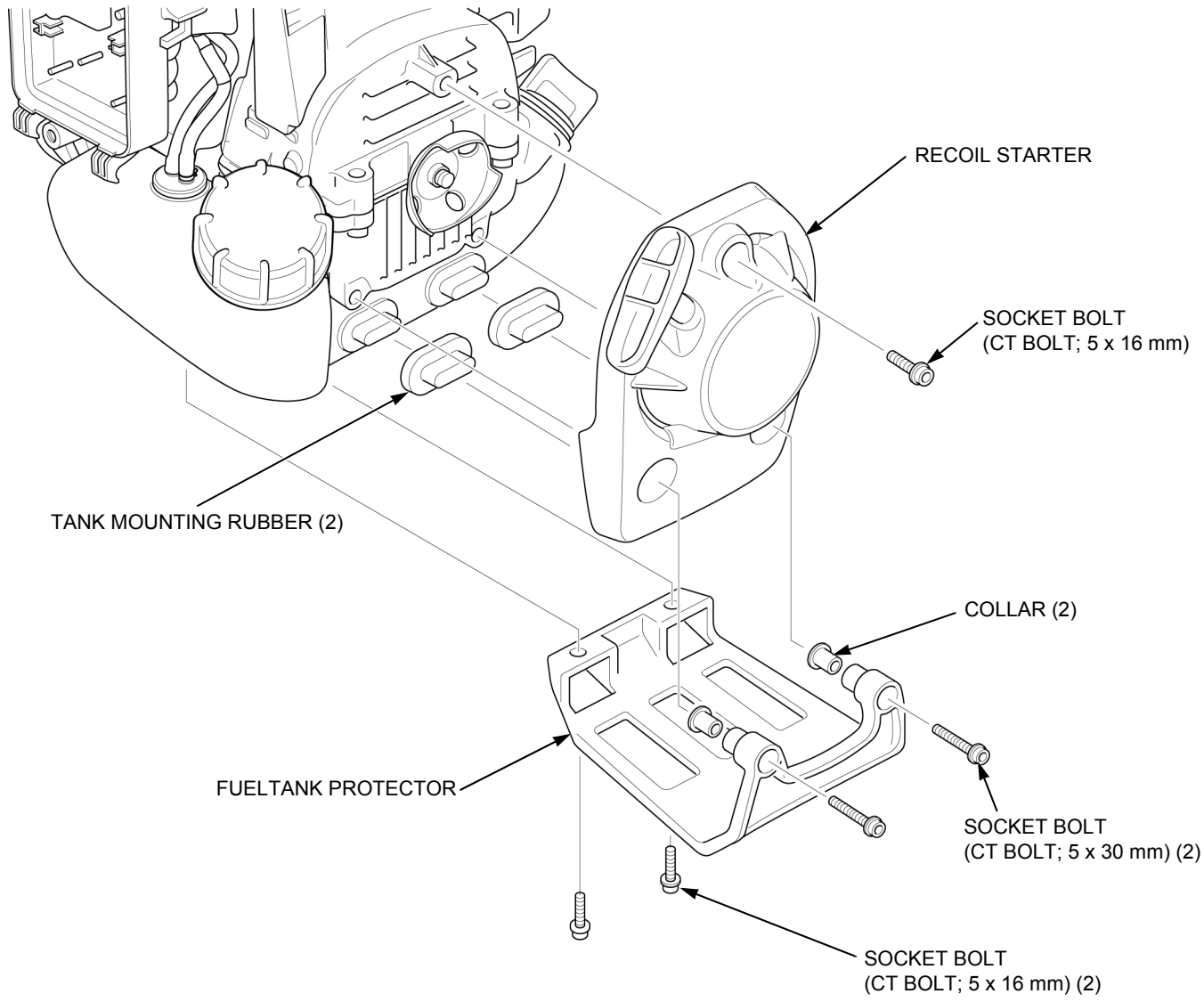
Make sure you adjust the clearance between the ignition coil and the magnetic parts of the rotor. Rotate the flywheel to move the magnetic parts.



7. STARTING SYSTEM

RECOIL STARTER
REMOVAL/INSTALLATION·····7-2

RECOIL STARTER REMOVAL/INSTALLATION



8. MUFFLER

MUFFLER REMOVAL/INSTALLATION·····8-2

MUFFLER REMOVAL/INSTALLATION

⚠ CAUTION

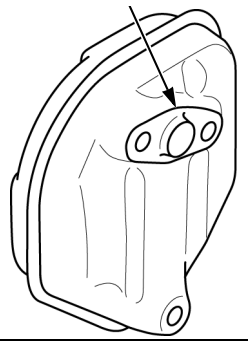
The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Allow it to cool before proceeding.

Remove the top cover (page 3-4).

MUFFLER

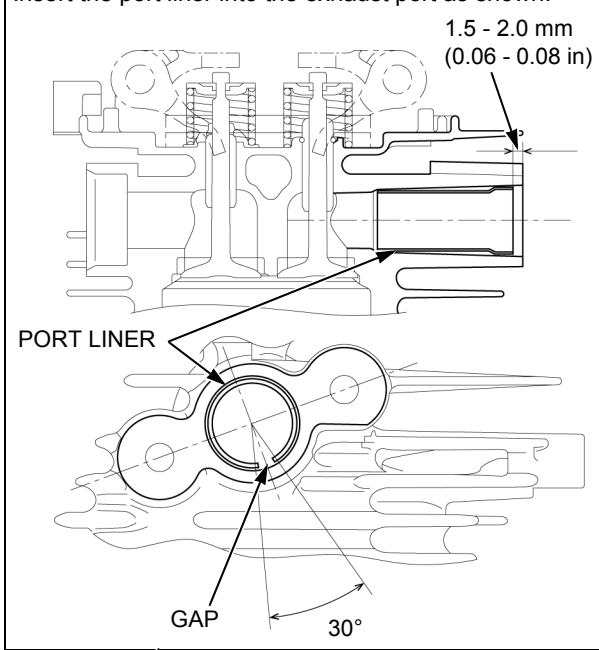
- Before installation, remove any carbon deposits from the muffler, using a plastic hammer.
- Do not tap on the muffler seal flange to avoid damaging this part.
  If the seal flange is dented or damaged, replace the muffler.
- Check the cylinder exhaust port for damage.

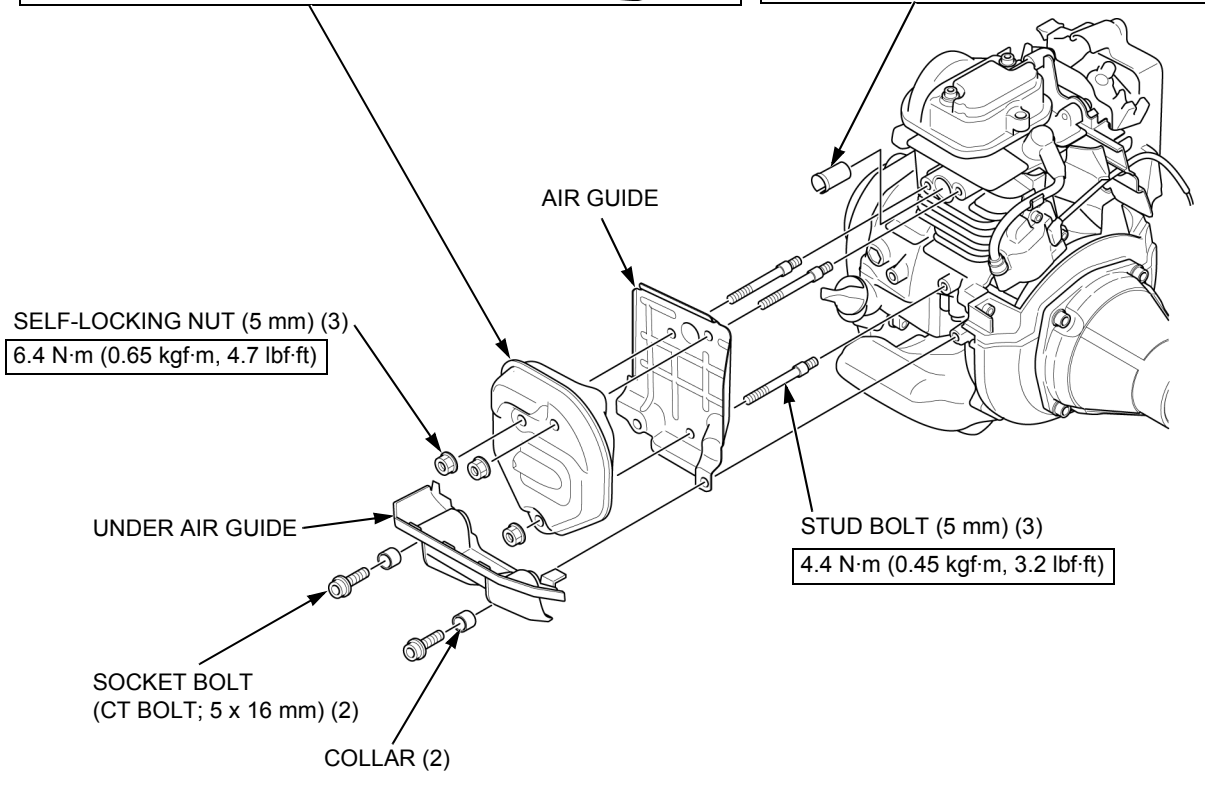
MUFFLER SEAL FLANGE



PORT LINER

INSTALLATION:
Insert the port liner into the exhaust port as shown.





9. CLUTCH

CLUTCH HOUSING
REMOVAL/INSTALLATION ····· 9-2

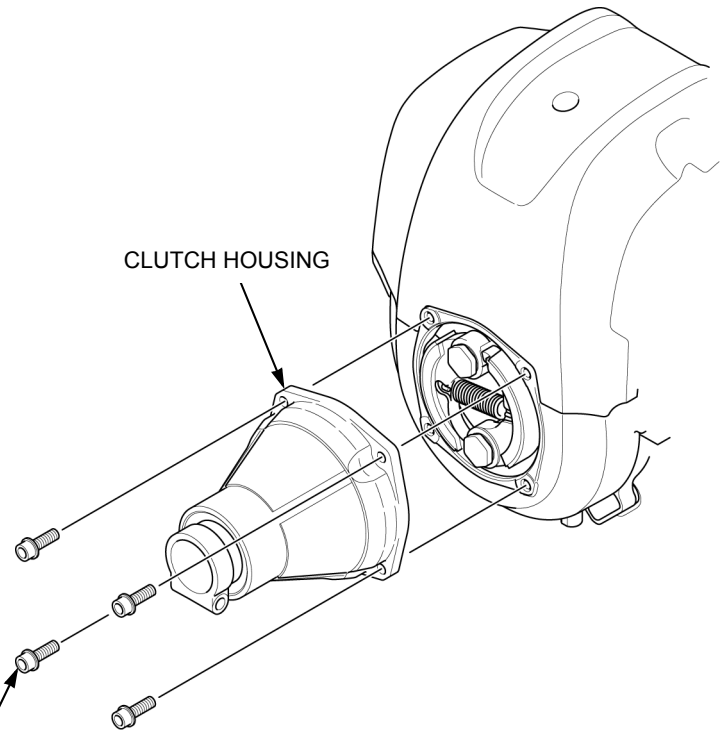
CLUTCH SHOE/FLYWHEEL
REMOVAL/INSTALLATION ····· 9-3

RECOIL STARTER PULLEY
REMOVAL/INSTALLATION ····· 9-5

CLUTCH INSPECTION ····· 9-6

CLUTCH HOUSING REMOVAL/INSTALLATION

Remove the frame pipe (page 14-2).

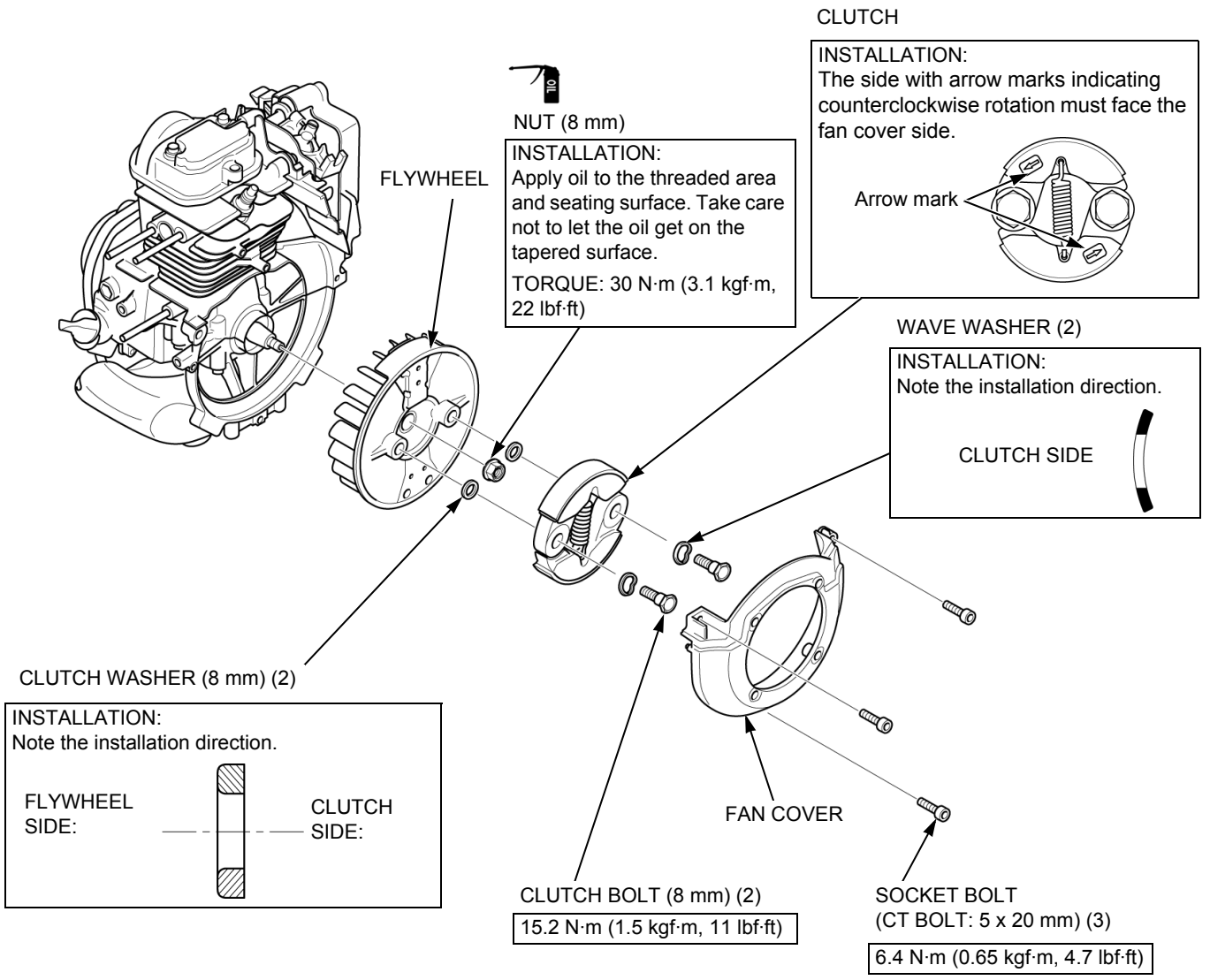


SOCKET BOLT (6 x 20 mm) (4)

6.9 N·m (0.70 kgf·m, 5.1 lbf·ft)

CLUTCH SHOE/FLYWHEEL REMOVAL/INSTALLATION

Remove the clutch housing (page 9-2).

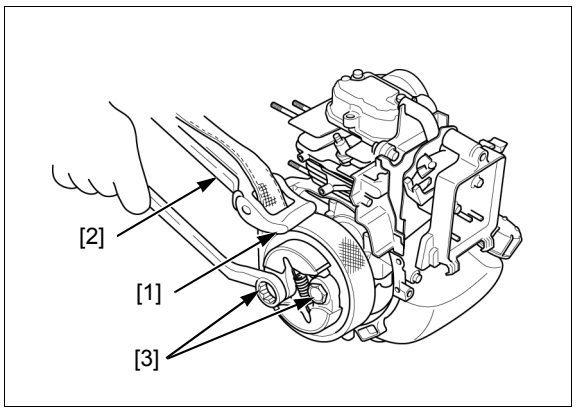


CLUTCH REMOVAL

NOTICE

To avoid flywheel fan blade damage, position the strap wrench fulcrum [1] at the flywheel magnetic parts.

Holding the flywheel with a commercially available strap wrench [2], remove the clutch bolts [3] and remove the clutch assembly.



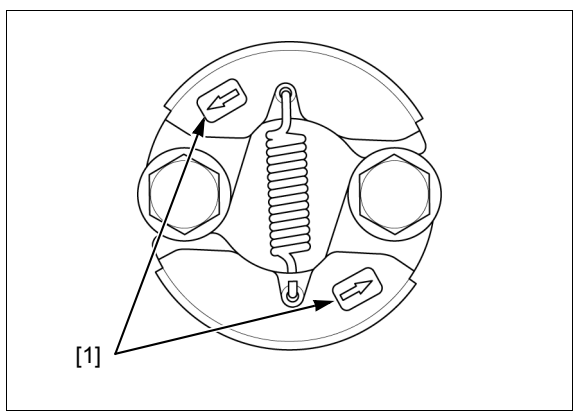
CLUTCH INSTALLATION

Install the clutch so that arrow marks indicating counterclockwise rotation [1] are visible, as shown.

Be sure to set the clutch washer between the clutch and flywheel.

Holding the flywheel with a commercially available strap wrench, tighten the 8 mm clutch bolts and wave washers to the specified torque.

TORQUE: 15.2 N·m (1.5 kgf·m, 11 lbf·ft)



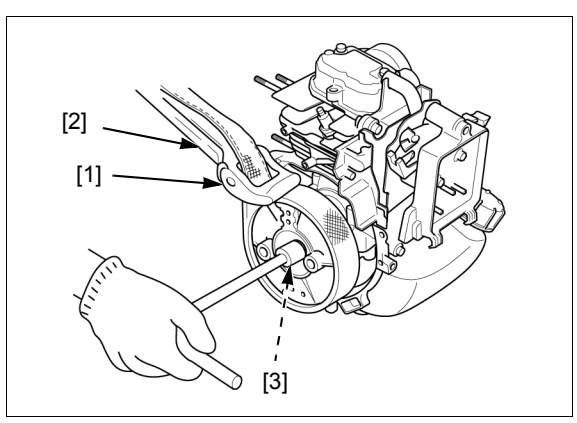
FLYWHEEL REMOVAL

NOTICE

To avoid flywheel fan blade damage, position the strap wrench fulcrum [1] at the flywheel magnetic parts.

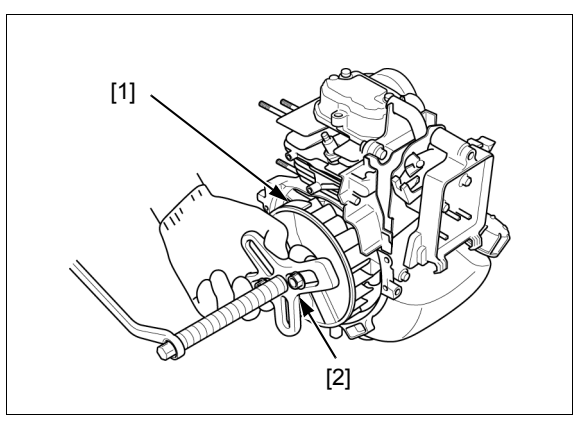
Remove the clutch (page 9-3).

Holding the flywheel with a commercially available strap wrench [2], remove the nut [3] from the flywheel.



Remove the flywheel [1] using a commercially available flywheel puller [2].

- Do not remove the flywheel by tapping it with a hammer.



FLYWHEEL INSTALLATION

Clean tapered part of dirt, oil, grease and other foreign material before installation.

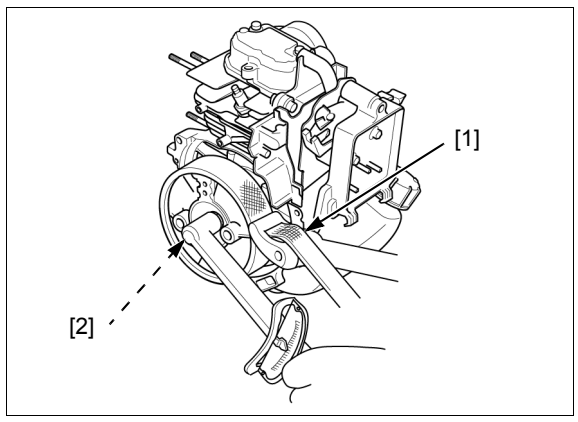
Be sure to woodruff key is set in the key groove properly.

Install the flywheel by aligning the key groove of the flywheel with the key on the crankshaft.

Holding the flywheel with a commercially available strap wrench [1], tighten the nut [2] to the specified torque.

TORQUE: 30 N·m (3.1 kgf·m, 22 lbf·ft)

Install the clutch (page 9-4).

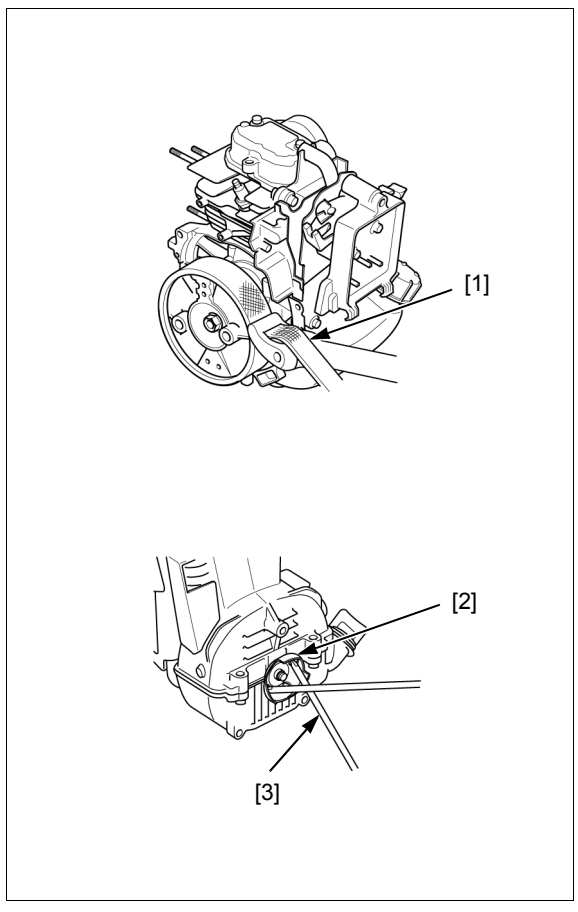


RECOIL STARTER PULLEY REMOVAL/INSTALLATION

Remove the following:

– Recoil starter (page 7-2)
– Clutch shoe (page 9-2)

Holding the flywheel with a commercially available strap wrench [1], remove the recoil starter pulley [2] with a screwdriver or equivalent tool [3].

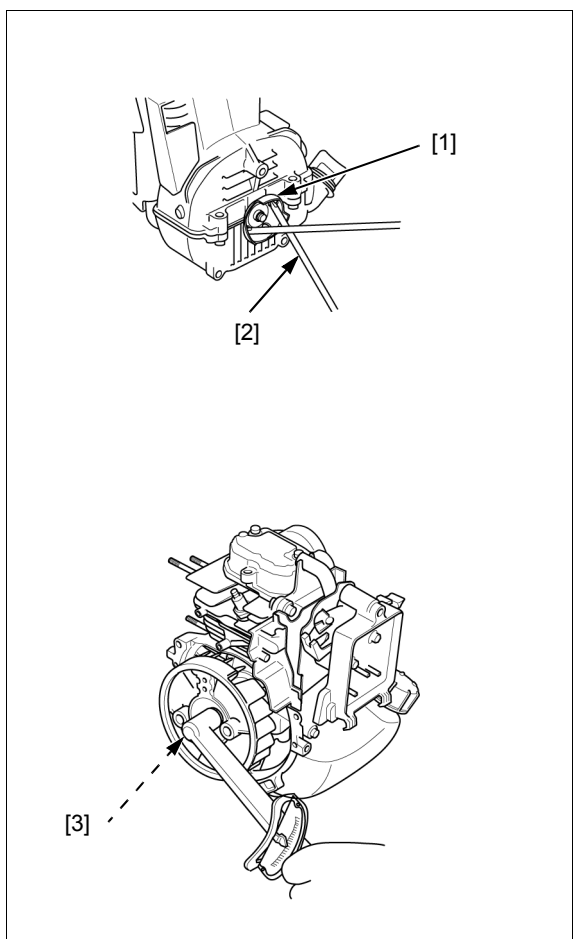


Install the recoil starter pulley [1] and hold it with a driver or equivalent tool [2].
Tighten the nut [3] to the specified torque.

TORQUE: 6.4 N·m (0.65 kgf·m, 4.7 lbf·ft)

Install the following:

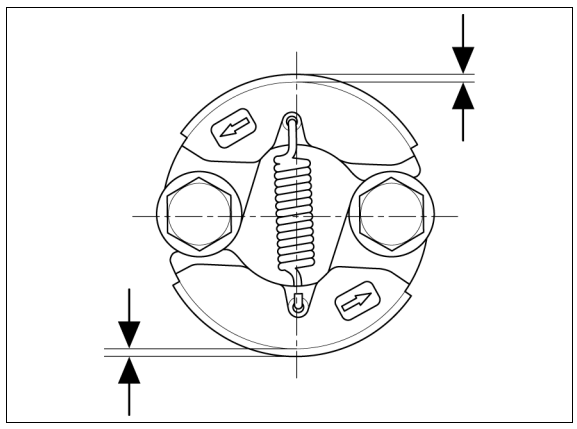
– Clutch shoe (page 9-2)
– Recoil starter (page 7-2)



CLUTCH INSPECTION

Measure the thickness at the clutch lining.

STANDARD: 2.0 mm (0.08 in)
SERVICE LIMIT: 1.0 mm (0.04 in)



11. CRANKCASE

LOWER CRANKCASE/SHROUD REMOVAL/INSTALLATION ····· 11-2

CRANKSHAFT/PISTON REMOVAL/INSTALLATION ····· 11-5

CRANKSHAFT/PISTON INSPECTION ····· 11-6

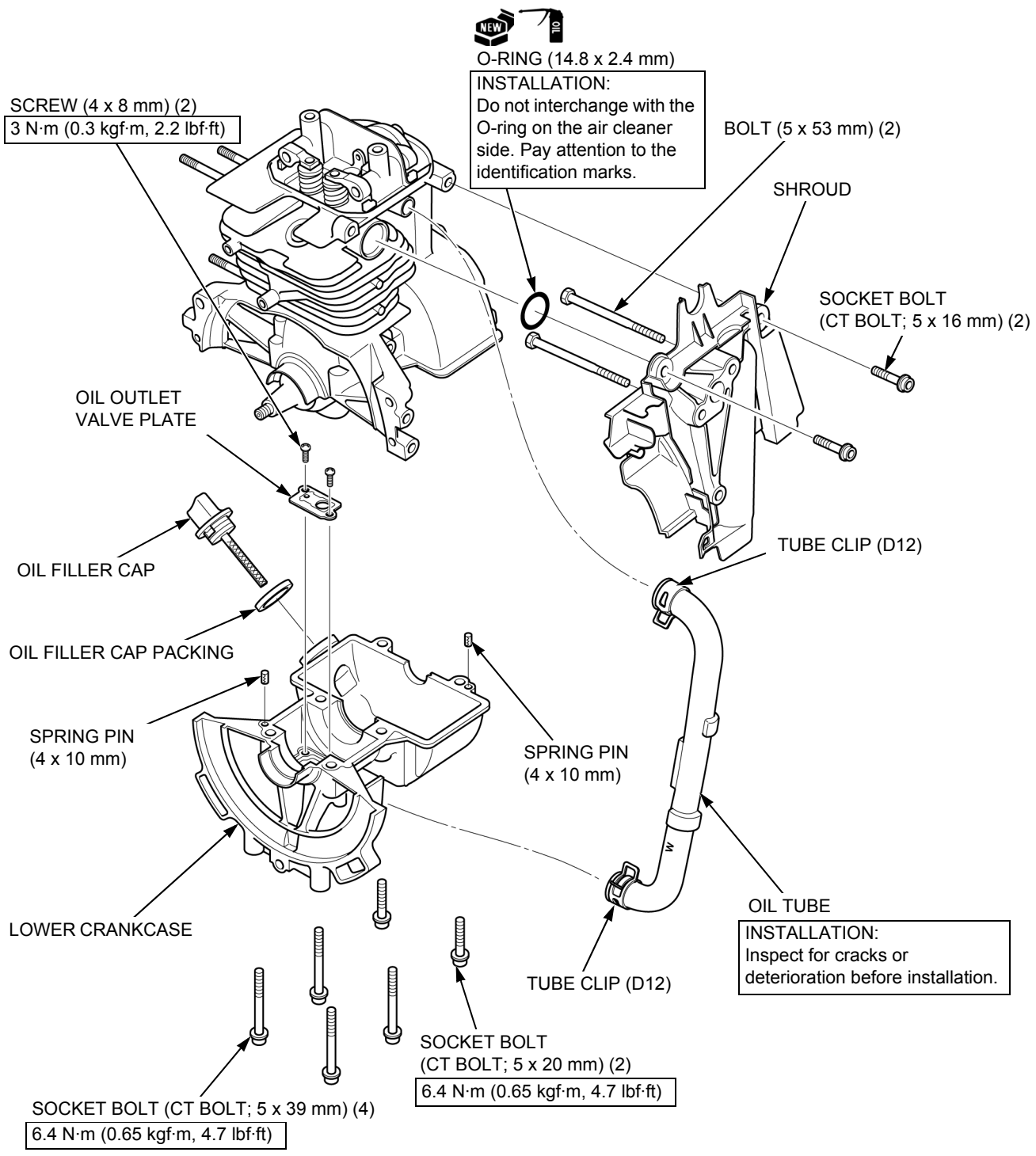
LOWER CRANKCASE/SHROUD REMOVAL/INSTALLATION

Drain the engine oil (page 3-3).

Remove the following:

- Carburetor (page 5-3)
- Fuel tank (page 5-4)
- Muffler (page 8-2)
- Flywheel (page 9-3)
- Recoil starter pulley (page 9-5)

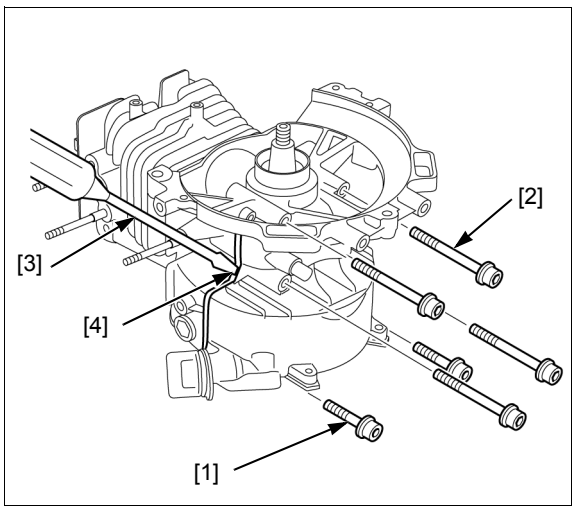
Installation is in the reverse order of removal



LOWER CRANKCASE REMOVAL/INSTALLATION

Remove the two socket bolts (5 x 20 mm) [1] and four socket bolts (5 x 39 mm) [2].

Insert the screw driver or equivalent tool [3] into the recess [4] as shown, and remove the lower crankcase from the cylinder barrel.

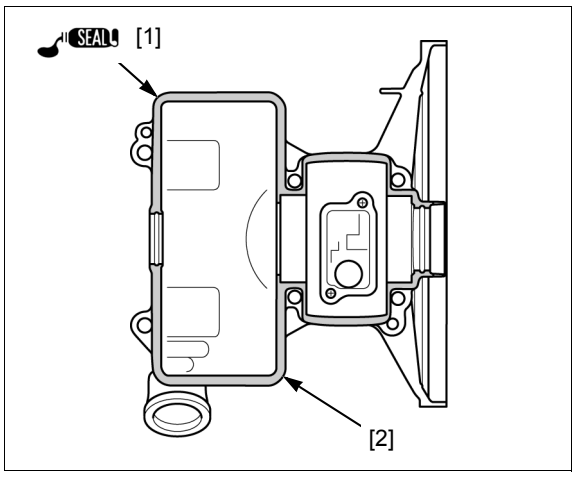


Clean the inside of the crankcase and remove foreign material.

Clean the mating surfaces of the cylinder barrel and the lower crankcase using a degreasing cleaning agent and clean shop towel.

Apply a bead [Φ1.0 – 1.5 mm (Φ0.04 – 0.06 in)] of the liquid sealant (ThreeBond® #1216, 1216E or equivalent) [1] to the cylinder barrel; specifically, to the mating surface with the lower crankcase [2].

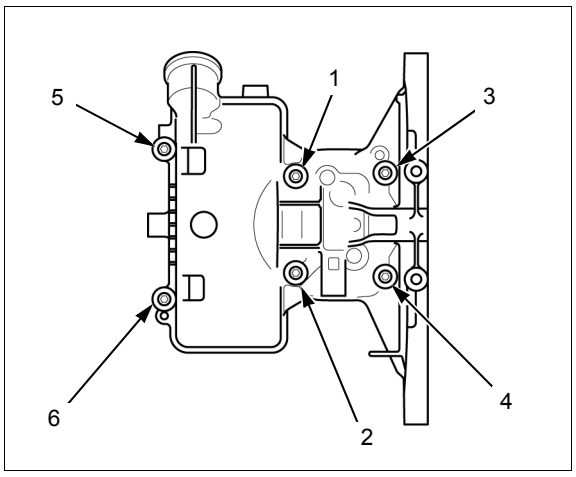
Install the lower crankcase on the cylinder barrel.
Assemble within 3 minutes after applying the liquid gasket.



Loosely tighten each two socket bolts (5 x 20 mm) and four socket bolts (5 x 39 mm) then tighten to the numbered sequence.

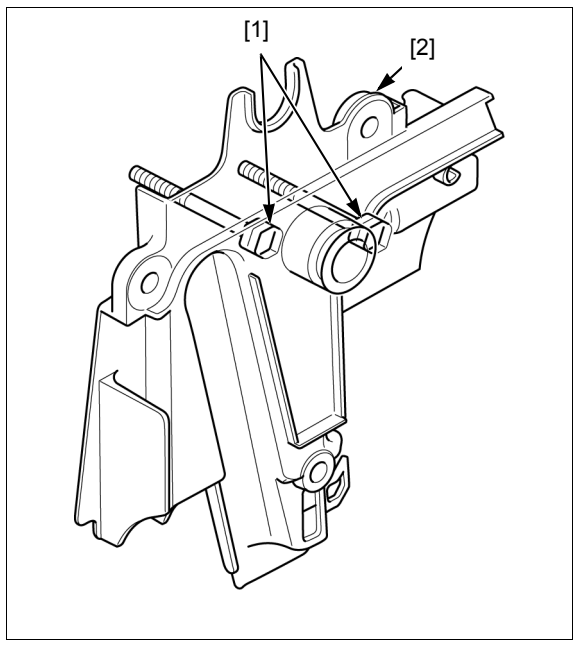
TORQUE: 6.4 N·m (0.65 kgf·m, 4.7 lbf·ft)

Wait for approximately 60 minutes after assembly before filling oil and starting the engine.



SHROUD INSTALLATION

Set the two bolts [1] on the shroud [2]. Take care not to allow the bolt heads to protrude from the shroud when installing on the cylinder barrel.

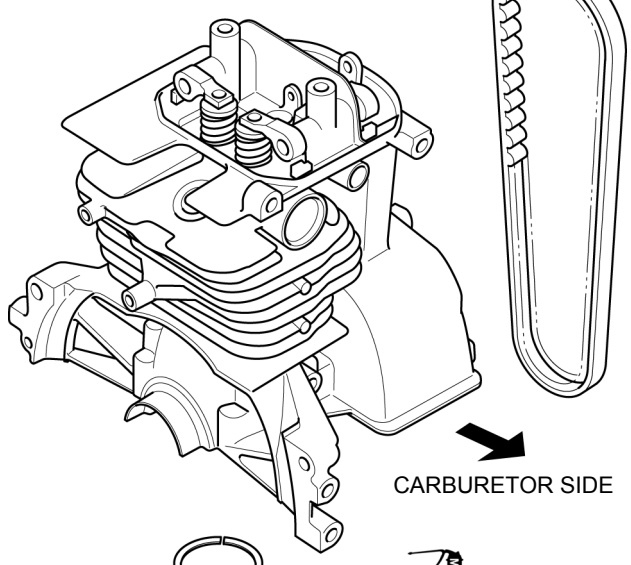


CRANKSHAFT/PISTON REMOVAL/INSTALLATION

Remove the lower crankcase (page 11-2).

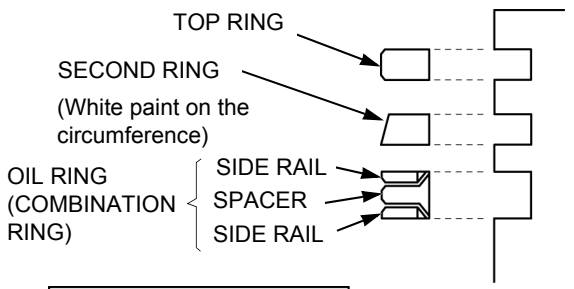
TIMING BELT

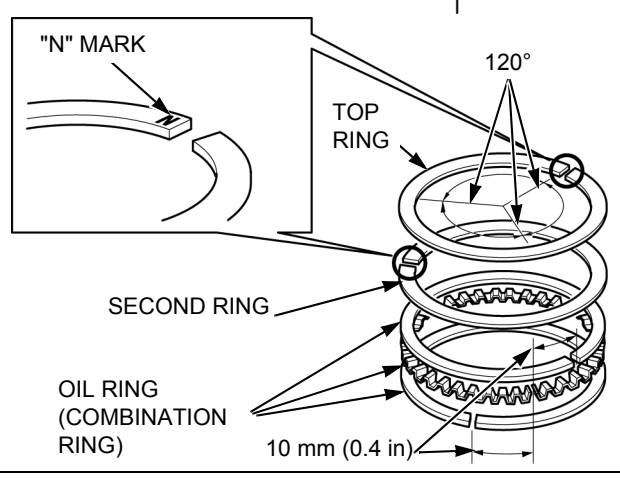
INSPECTION:
Check that the belt is not worn or cracked. Do not bend or twist the belt.



PISTON RING

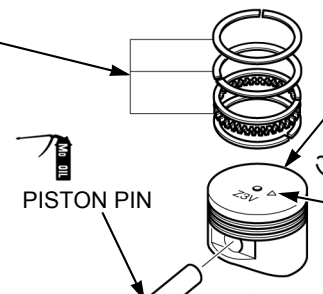
INSTALLATION:
- Install the top ring and second ring with the "N" mark facing up.
- Do not interchange the top ring and the second ring.
- After assembly, check for smooth movement of the piston ring.
- Stagger the piston ring end gaps 120° apart. Do not align with the piston pin.
- Space the side rail end gaps at least 10 mm (0.4 in) apart. Coat the oil ring with oil after assembly.





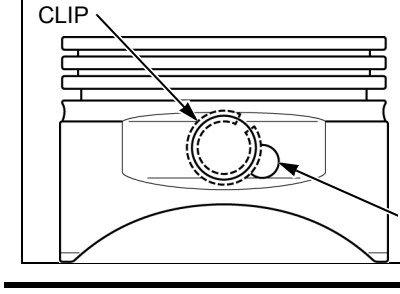
PISTON

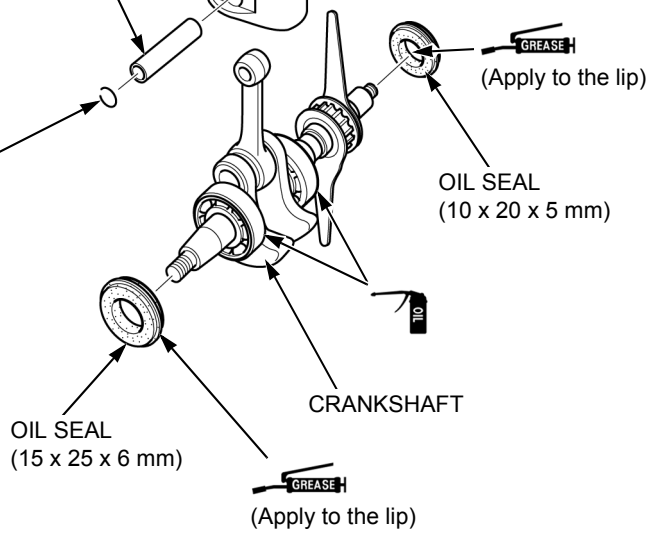
INSTALLATION:
Install with the " △ " on the piston head facing the carburetor side.



PISTON PIN CLIP [2]

ASSEMBLY:
- Reusing the piston pin clip may damage the engine. Always install new piston pin clips.
- Install by setting one end of the clip in the piston groove, holding the other end with long-nosed pliers, and rotating the clip in.
- Do not align the end gap of the clip with the cutout in the piston pin bore.





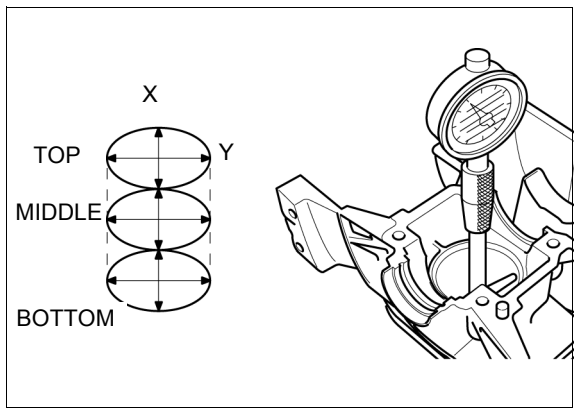
CRANKSHAFT/PISTON INSPECTION

CYLINDER SLEEVE I.D.

Measure and record the cylinder I.D. at three levels in both the “X” axis (perpendicular to crankshaft) and the “Y” axis (parallel to crankshaft). Take the maximum reading to determine cylinder wear and taper.

STANDARD: 43.000 – 43.015 mm (1.6929 – 1.6935 in)
SERVICE LIMIT: 43.100 mm (1.6968 in)

If the measurement is more than the service limit, replace the crankcase set.

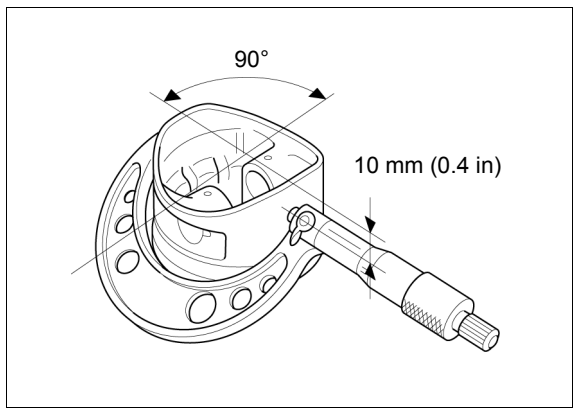


PISTON SKIRT O.D.

Measure and record the piston O.D. at a point 10 mm (0.4 in) from the bottom of the skirt and 90 degrees to the piston pin bore.

STANDARD: 42.970– 42.990 mm (1.6917 – 1.6925 in)
SERVICE LIMIT: 42.900 mm (1.6890 in)

If the measurement is less than the service limit, replace the piston.

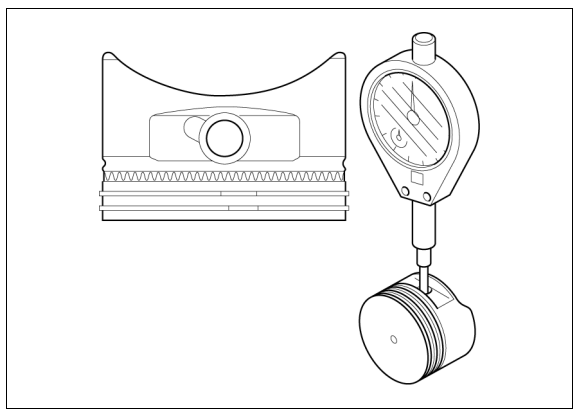


PISTON PIN BORE I.D.

Measure and record the piston pin bore I.D. of the piston.

STANDARD: 9.002 – 9.012 mm (0.3544 – 0.3548 in)
SERVICE LIMIT: 9.050 mm (0.3563 in)

If the measurement is more than the service limit, replace the piston.

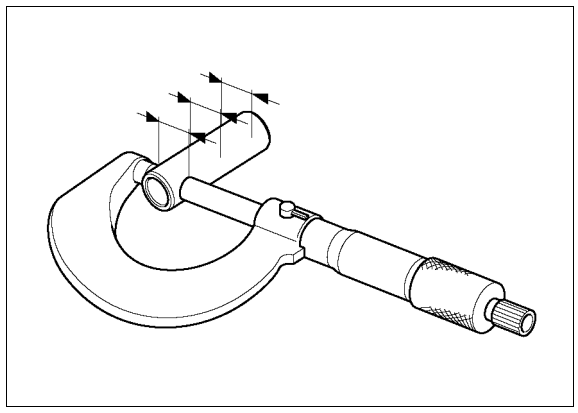


PISTON PIN O.D.

Measure and record the piston pin O.D. at three points (both ends and middle). Take the minimum reading to determine piston pin O.D.

STANDARD: 8.994 – 9.000 mm (0.3541 – 0.3543 in)
SERVICE LIMIT: 8.950 mm (0.3527 in)

If the measurement is less than the service limit, replace the piston pin.



PISTON PIN-TO-PISTON PIN BORE CLEARANCE

Subtract the piston pin O.D. from the piston pin bore I.D. to obtain the piston pin-to-piston pin bore clearance.

STANDARD: 0.002 – 0.016 mm (0.0001 – 0.0006 in)
SERVICE LIMIT: 0.050 mm (0.0020 in)

If the calculated clearance is more than the service limit, replace the piston pin and recheck the clearance.

If the clearance is still more than the service limit with the new piston pin, replace the piston.

PISTON RING END GAP

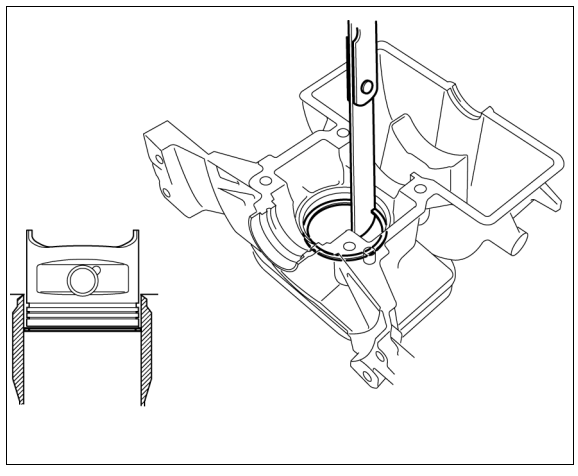
Before inspection, check whether the cylinder sleeve I.D. is within the specification (page 11-6).

Put the piston ring in the cylinder and then use the piston crown to push the ring down.
This will make the piston ring horizontal so ring end gap can be measured.

Measure each piston ring end gap using a feeler gauge.

STANDARD:
Top/Second: 0.15 – 0.30 mm (0.006 – 0.012 in)
Oil: 0.20 – 0.70 mm (0.008 – 0.0028 in)
SERVICE LIMIT:
Top/Second: 0.60 mm (0.024 in)
Oil: 1.0 mm (0.04 in)

If any of the measurements is more than the service limit, replace the piston rings (top, second, oil) as a set.

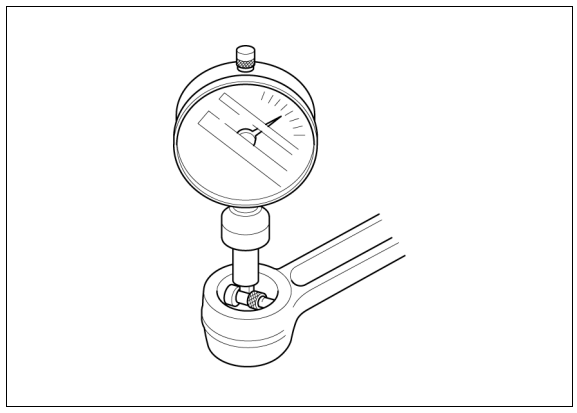


CONNECTING ROD SMALL END I.D.

Measure the connecting rod small end I.D.

STANDARD: 8.983 – 8.994 mm (0.3537 – 0.3541 in)
SERVICE LIMIT: Replace if exceeding the standard value.

If the measurement is more than the service limit, replace the crankshaft.



12. CYLINDER HEAD

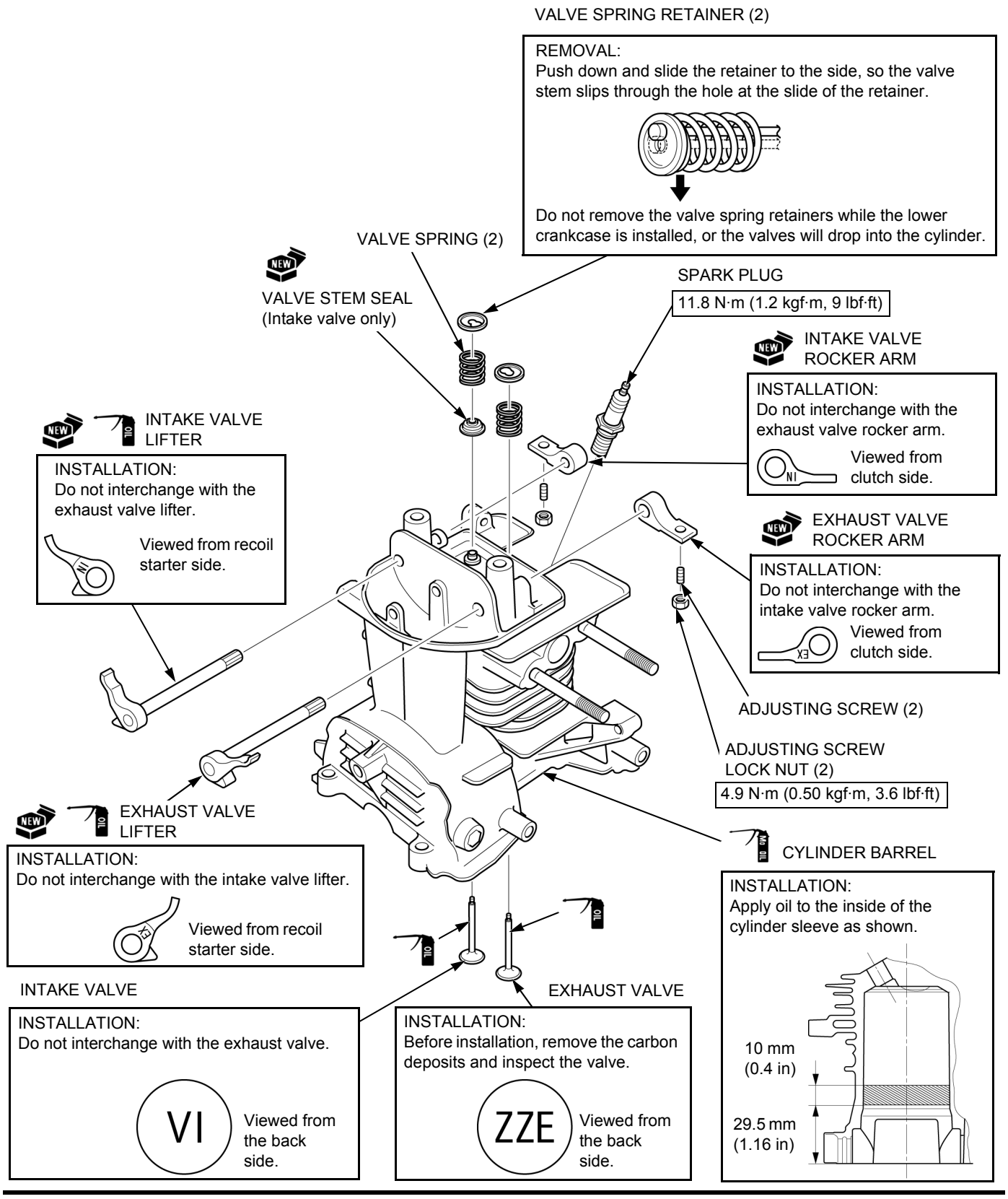
ROCKER ARM/VALVES
REMOVAL/INSTALLATION ····· 12-2

CYLINDER HEAD/VALVES
INSPECTION ····· 12-3

ROCKER ARM/VALVES REMOVAL/INSTALLATION

Remove the following:

– Cam pulley (Base shop manual: page 12-2)
– Crankshaft (page 11-5)



CYLINDER HEAD/VALVES INSPECTION

CYLINDER COMPRESSION CHECK

Warm the engine to normal operating temperature.

Turn the engine switch to the OFF position.

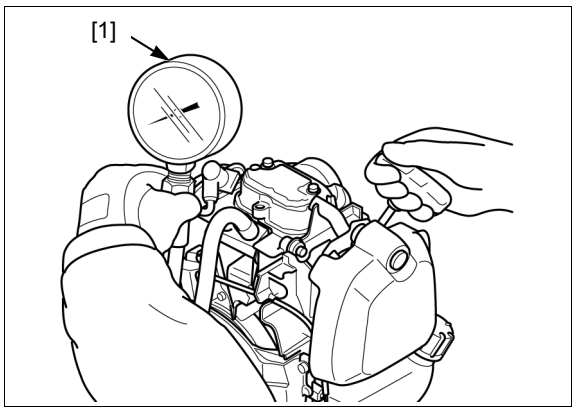
Drain the fuel from the fuel tank.
Drain the fuel from the carburetor by pushing the carburetor primer pump.

Remove the spark plug cap from the spark plug.
Remove the spark plug using a spark plug wrench.

Pull the recoil starter several times to expel unburned gas.

Attach a commercially available compression gauge [1] to the spark plug hole.

Pull the recoil starter forcefully until the gauge reading stops rising.



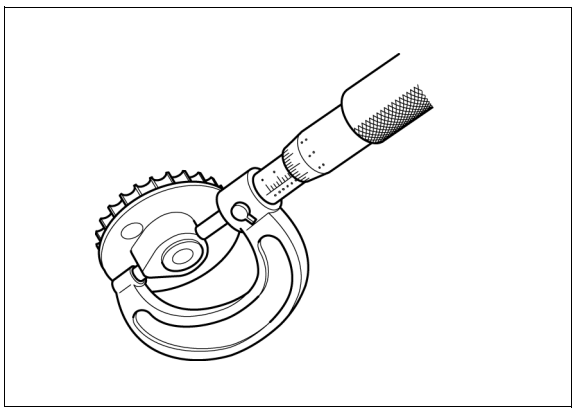
CYLINDER COMPRESSION:
1.03 MPa (10.5 kgf/cm^2, 149 psi) at 2,000 min^{-1} (rpm)

CAM HEIGHT

Measure the cam height.

STANDARD: 22.49 mm (0.885 in)
SERVICE LIMIT: 22.19 mm (0.874 in)

If the measurement is less than the service limit, replace the cam pulley.



MEMO

13. CUTTER/GEAR CASE

BLADE CUTTER/GEAR CASE/DEFLECTOR REMOVAL/INSTALLATION……13-2

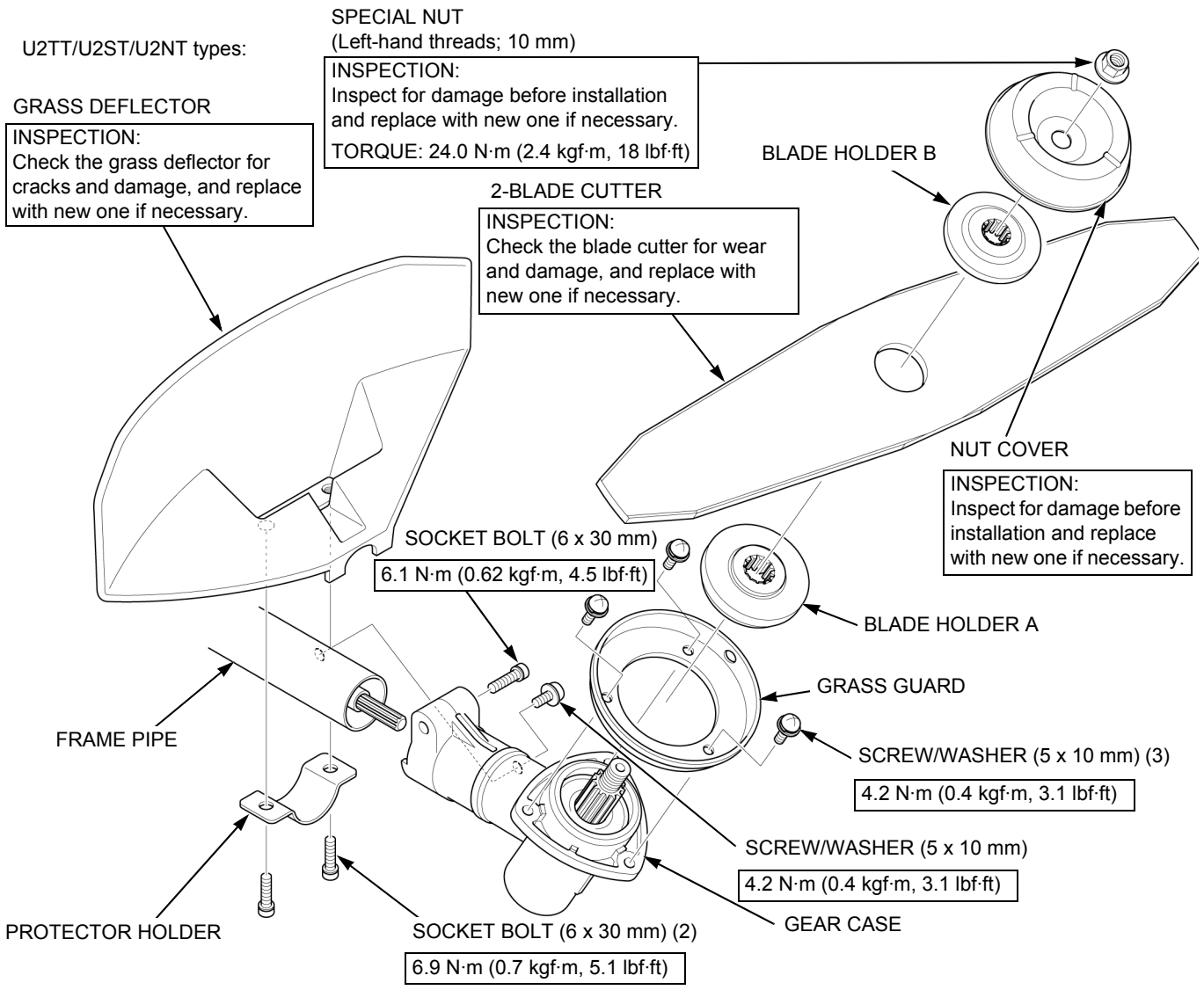
NYLON CUTTER/GEAR CASE/DEFLECTOR REMOVAL/INSTALLATION……13-7

GEAR CASE DISASSEMBLY/ASSEMBLY……13-10

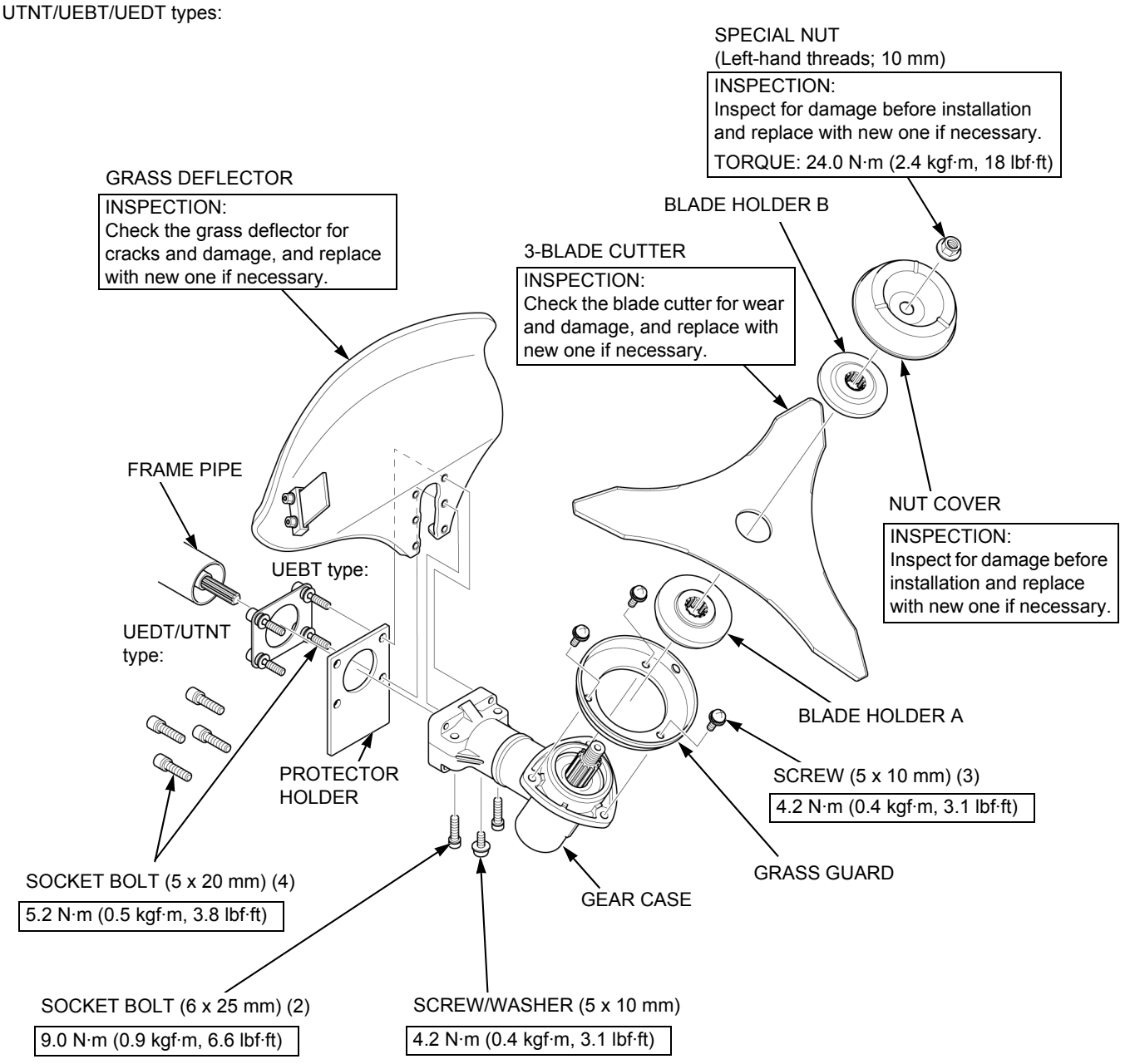
BLADE CUTTER/GEAR CASE/DEFLECTOR REMOVAL/INSTALLATION

⚠WARNING

- Turn the engine stop switch to the STOP position and remove the spark plug cap before removing the blade cutter/gear case.
- Be sure to remove wear gloves to protect your hands.



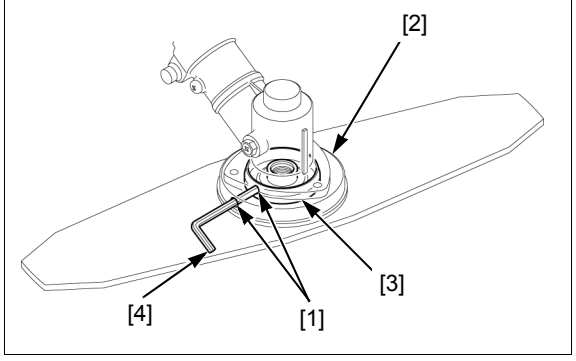
UTNT/UEBT/UEDT types:



BLADE CUTTER REMOVAL/INSTALLATION

Align the holes [1] of the grass guard [2] and the blade holder A [3] as shown, and insert the hexagon wrench [4].

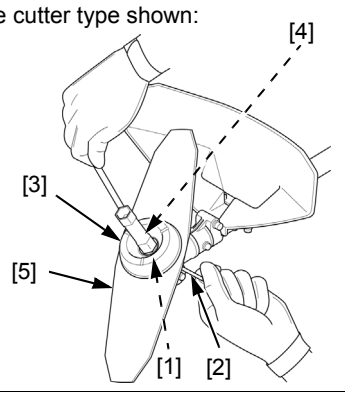
2-blade cutter type shown:



CUTTER/GEAR CASE

Remove the special nut (Left hand threads: 10 mm) [1] while holding the hexagon wrench [2].
And then remove the blade nut cover [3], blade holder B [4] and blade cutter [5].

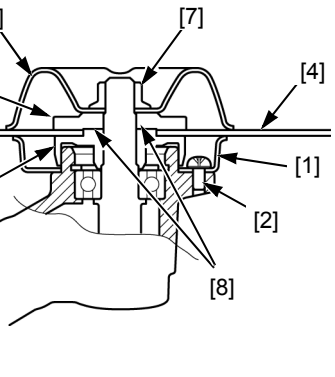
2-blade cutter type shown:



Install the following as shown:

– Grass guard [1]
– Two screws [2]
– Blade holder A [3]
– Blade cutter [4]
– Blade holder B [5]
– Blade nut cover [6]
– Special nut (left-hand thread; 10 mm) [7]

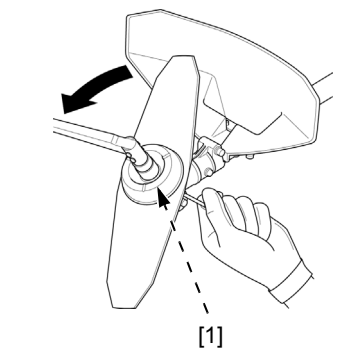
• Blade cutter must not be on these surface [8].



Align the holes of the grass guard and the blade holder A, and insert the hexagon wrench as same manner as removal.
Tighten the 10 mm special nut (left-hand thread) [1] to the specified torque.

TORQUE: 24.0 N·m (2.4 kgf·m, 18 lbf·ft)

2-blade cutter type shown:



GEAR CASE INSTALLATION

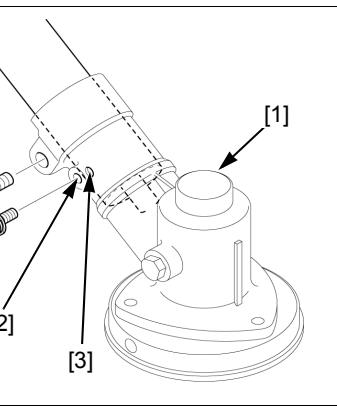
U2TT/U2ST/U2NT types

Install the gear case [1] by aligning the screw/washer installation hole [2] with the hole [3] in the frame pipe. Tighten the screw washer (5 x 10 mm) [4] to the specified torque.

TORQUE: 4.2 N·m (0.4 kgf·m, 3.1 lbf·ft)

After tightening the screw/washer, tighten the socket bolt (6 x 30 mm) [5] to the specified torque.

TORQUE: 6.1 N·m (0.6 kgf·m, 4.5 lbf·ft)



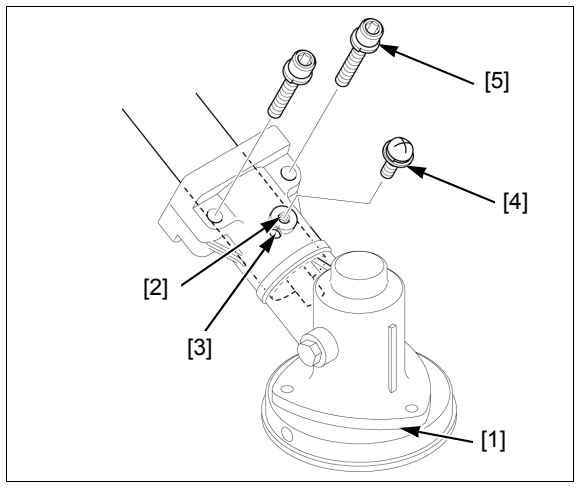
UTNT/UEBT/UEDT types

Install the gear case [1] by aligning the screw/washer installation hole [2] with the hole [3] in the frame pipe. Tighten the screw/washer [4] to the specified torque.

TORQUE: 4.2 N·m (0.4 kgf·m, 3.1 lbf·ft)

After tightening the screw/washer, tighten the socket bolts [5] to the specified torque.

TORQUE: 9.0 N·m (0.9 kgf·m, 6.6 lbf·ft)



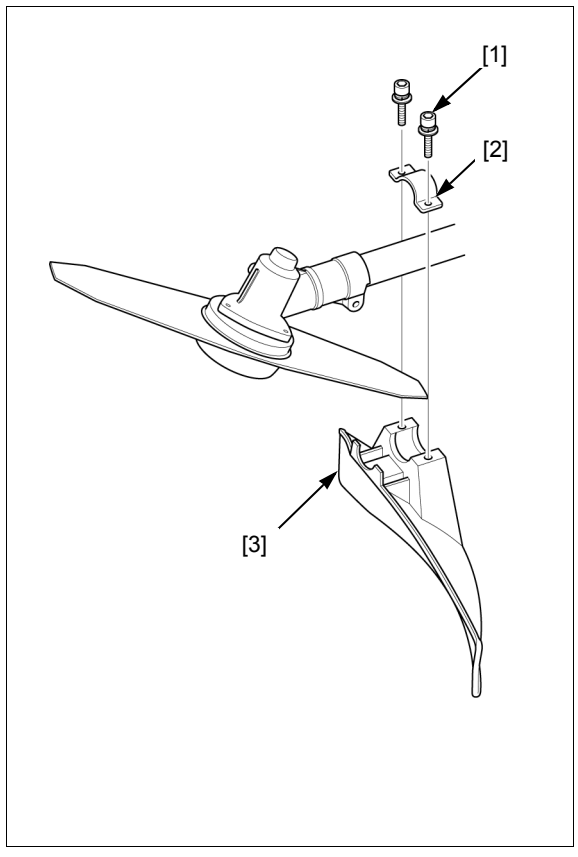
GRASS DEFLECTOR REMOVAL/INSTALLATION

2-BLADE TYPE (U2TT/U2ST/U2NT types)

Remove the two socket bolts [1], protector holder [2] and grass deflector [3].

Tighten the socket bolts to the specified torque.

TORQUE: 6.9 N·m (0.7 kgf·m, 5.1 lbf·ft)



3-BLADE TYPE
(UEDT/UEBT types)

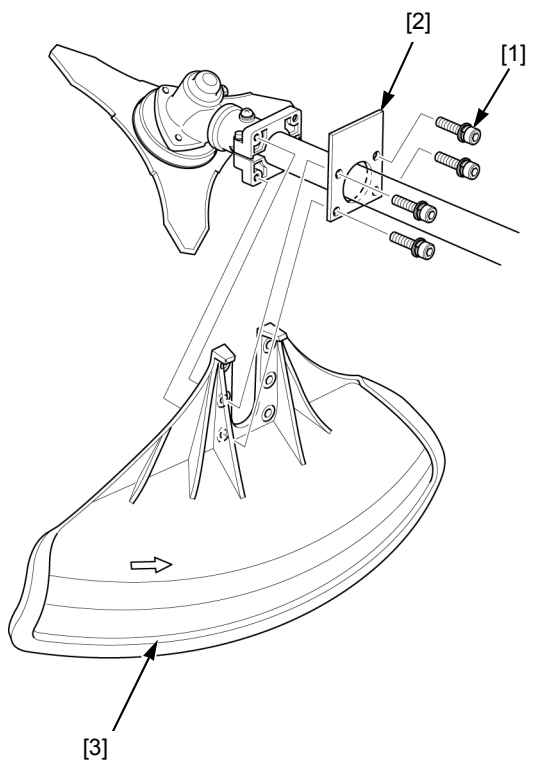
Remove the four socket bolts [1], protector holder [2] and grass deflector [3].

Installation is in the reverse order of removal.

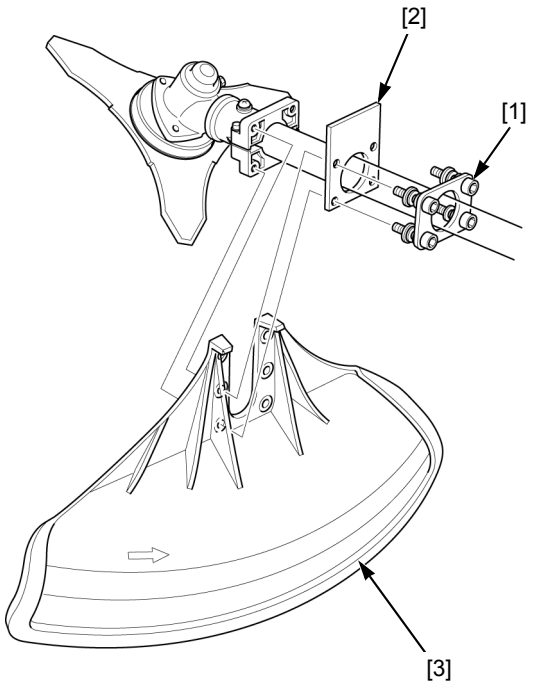
- When installing the protector holder as shown.

TORQUE: DEFLECTOR MOUNTING SOCKET BOLT
5.2 N·m (0.5 kgf·m, 3.8 lbf·ft)

UEDT type:



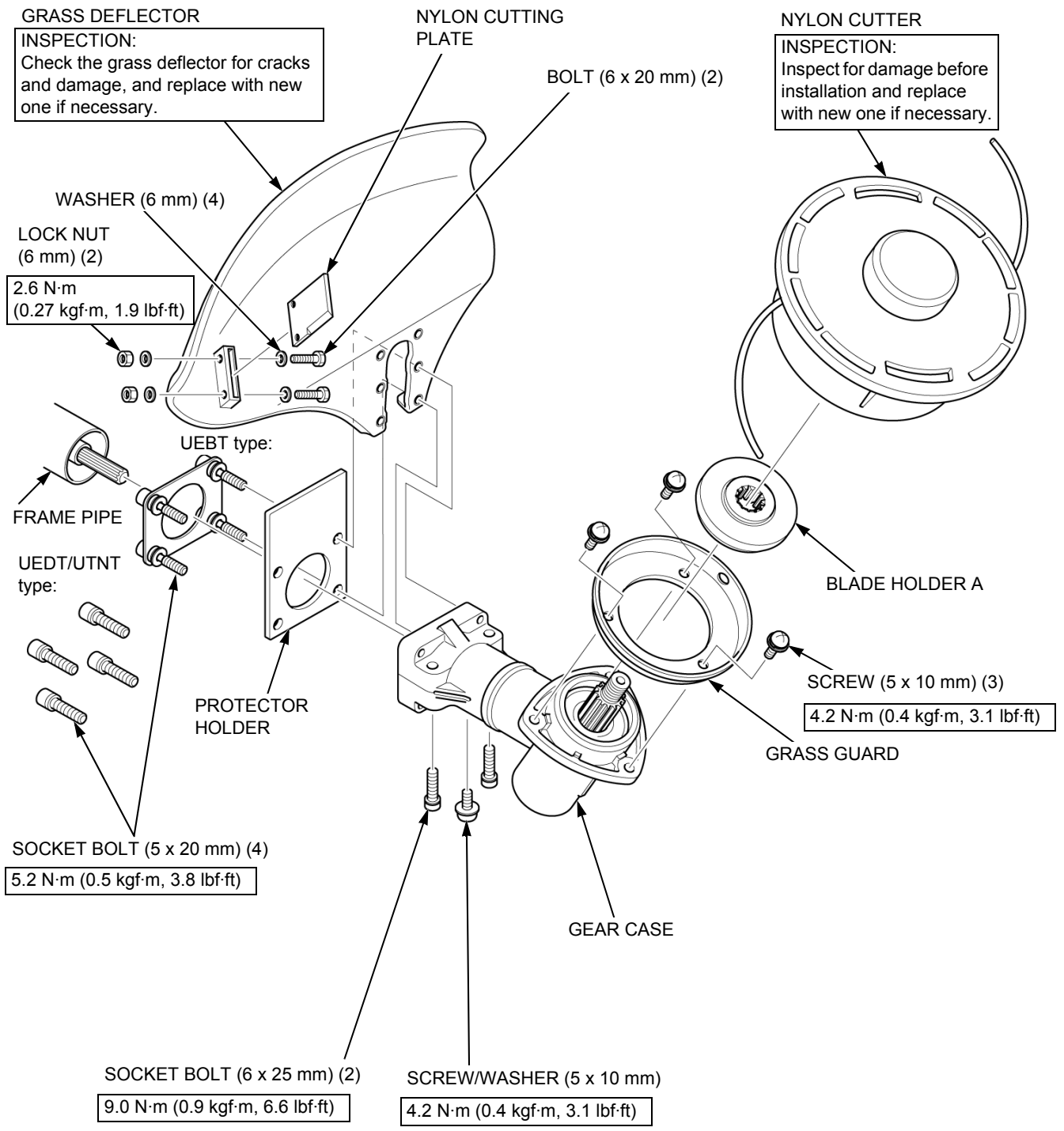
UEBT type:



NYLON CUTTER/GEAR CASE/DEFLECTOR REMOVAL/INSTALLATION

⚠ WARNING

- Turn the engine stop switch to the STOP position and remove the spark plug cap before removing the nylon cutter/gear case.
- Be sure to remove wear gloves to protect your hands.

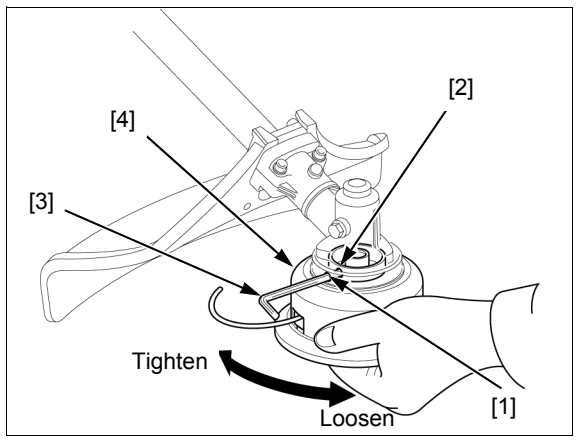


NYLON CUTTER REMOVAL/INSTALLATION

Align the hole [1] in the grass guard and the groove in the blade holder A [2] as shown, and insert the hexagon wrench [3].

Holding the hexagon wrench, turn the nylon cutter [4] clockwise and remove it.

Installation is in the reverse order of removal.



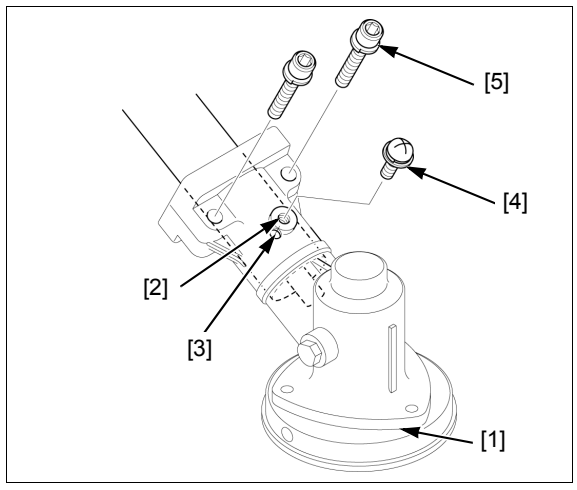
GEAR CASE INSTALLATION

Install the gear case [1] by aligning the screw/washer installation hole [2] with the hole [3] in the frame pipe. Tighten the screw/washer [4] to the specified torque.

TORQUE: 4.2 N·m (0.4 kgf·m, 3.1 lbf·ft)

After tightening the screw/washer, tighten the socket bolts [5] to the specified torque.

TORQUE: 9.0 N·m (0.9 kgf·m, 6.6 lbf·ft)



GRASS DEFLECTOR REMOVAL/INSTALLATION

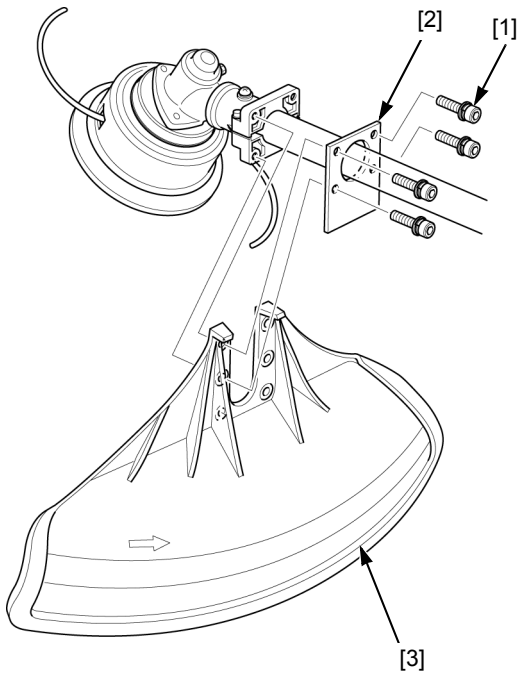
Remove the four socket bolts [1], protector holder [2] and grass deflector [3].

Installation is in the reverse order of removal.

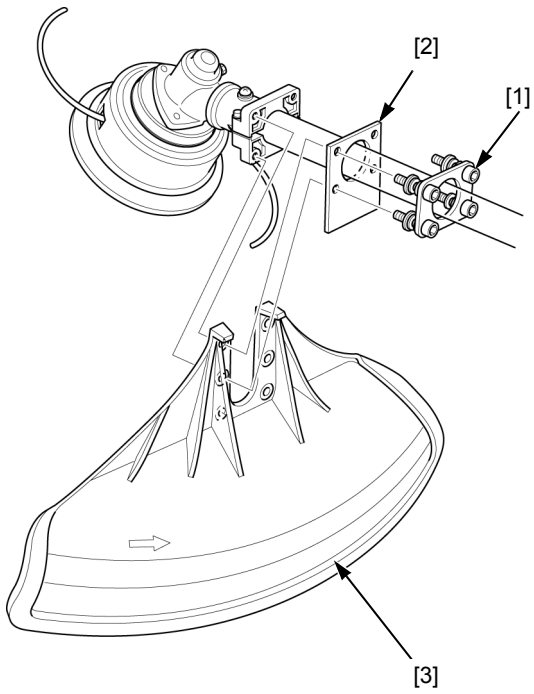
- When installing the protector holder as shown.

TORQUE: DEFLECTOR MOUNTING SOCKET BOLT
5.2 N·m (0.5 kgf·m, 3.8 lbf·ft)

UEDT/UTNT type:



UEBT type:

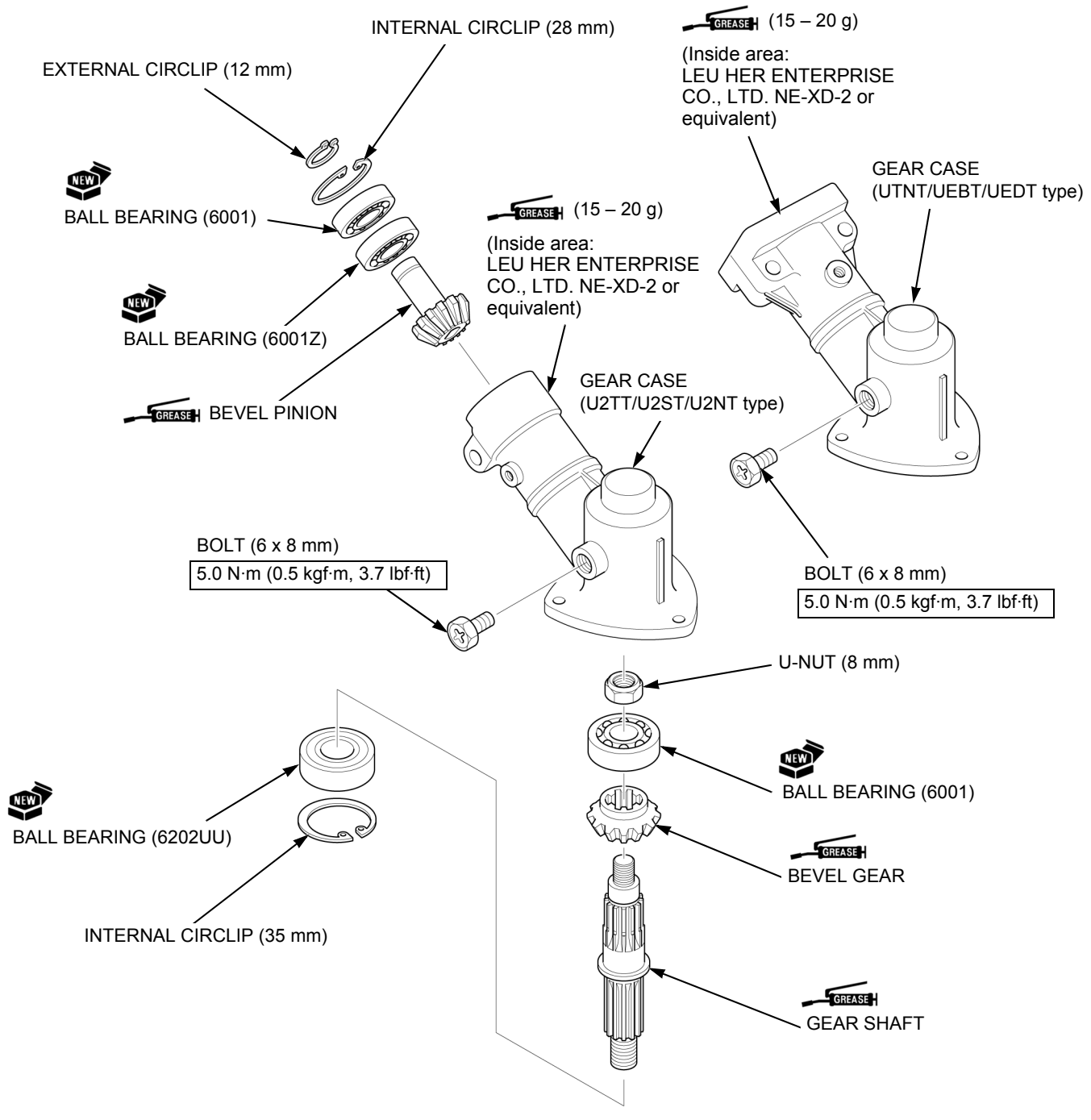


GEAR CASE DISASSEMBLY/ASSEMBLY

Remove the gear case:

– Blade cutter type (page 13-2)
– Nylon cutter type (page 13-7)

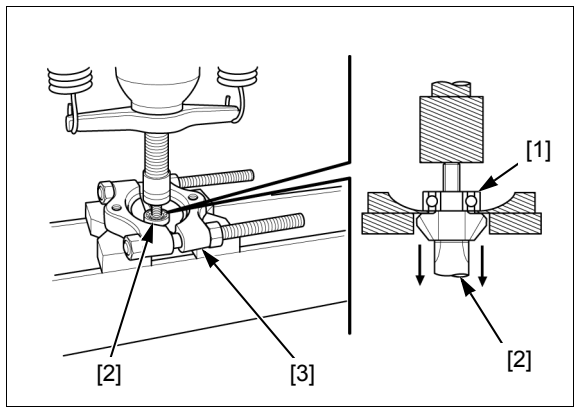
Heat the gear case to 100 °C (212 °F) evenly using a heat gun.
When the entire of the gear case becomes hot, remove/install each part from/to the gear case quickly.
After assembly, pour the grease into the gear case (page 3-8).
Note: Wear insulated gloves to avoid burns when handling the gear case.



GEARSHAFT BEARING REPLACEMENT

UPPER SIDE:

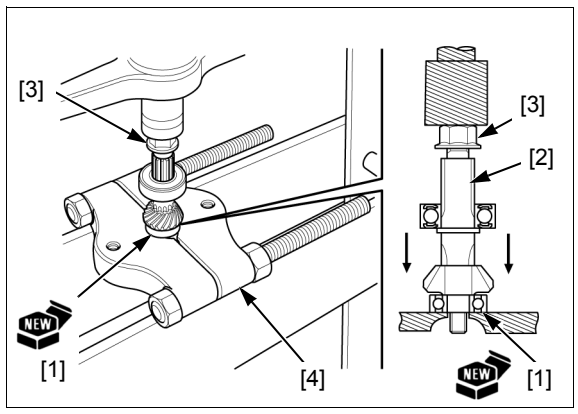
Remove the ball bearing (6001) [1] from the gearshaft [2] by using a commercially available bearing puller [3] and hydraulic press.



Install the new ball bearing (6001) [1] to the gearshaft [2] and loosely tighten the nut [3].

Install a ball bearing until it is fully seated by using the commercially available bearing puller [4] and hydraulic press.

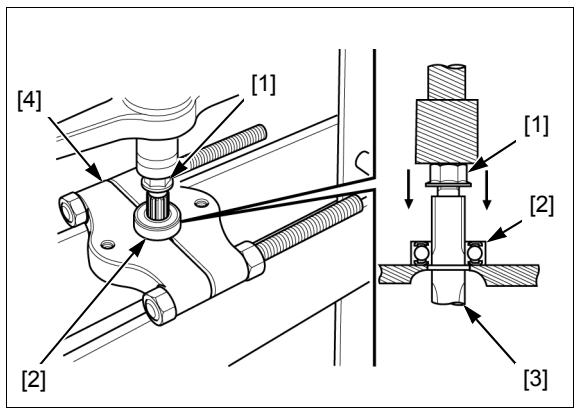
- When pressing the bearing, be sure to hold the bearing inner race.



LOWER SIDE:

Install the nut [1] and loosely tighten it.

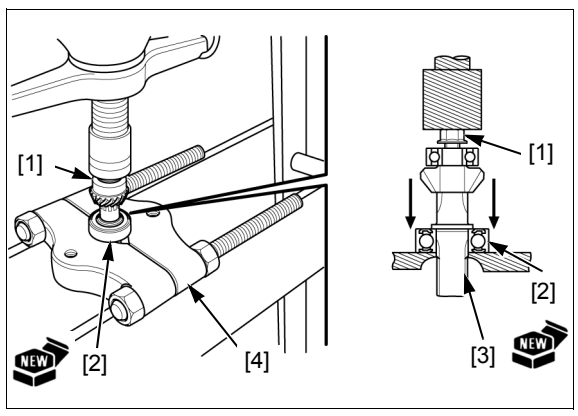
Remove the ball bearing (6202UU) [2] from the gearshaft [3] by using the commercially available bearing puller [4] and hydraulic press.



Install the nut [1] and loosely tighten it.

Install a new ball bearing (6202UU) [2] to the gearshaft [3] until it is fully seated by using the commercially available bearing puller [4] and hydraulic press.

- When pressing the bearing, be sure to hold the bearing inner race.



MEMO

14. FRAME/THROTTLE

FRAME PIPE/THROTTLE CABLE/GROUND CABLE REMOVAL/INSTALLATION ·····14-2

HANDLE PIPE/THROTTLE LEVER REMOVAL/INSTALLATION ·····14-4

ENGINE STOP SWITCH INSPECTION ·····14-8

FRAME PIPE/THROTTLE CABLE/GROUND CABLE REMOVAL/INSTALLATION

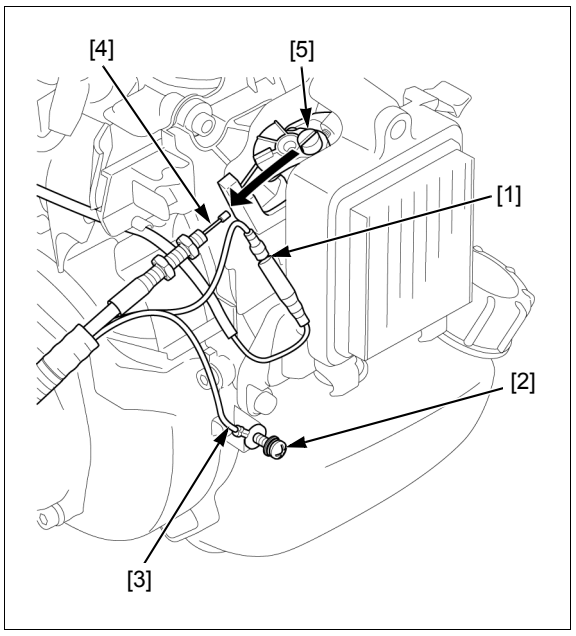
REMOVAL

Remove the air cleaner cover (page 3-4).

Disconnect the engine stop switch connector [1].

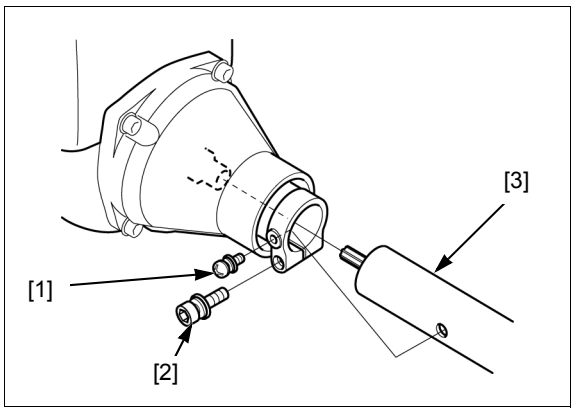
Remove the screw/washer [2] and disconnect the ground cable [3].

Loosen the throttle cable lock nut, and disconnect the throttle cable [4] from the swivel [5].



Remove the screw/washer [1] and socket bolt [2].

Remove the frame pipe [3].



INSTALLATION

Check to see that the drive shaft spline [1] is not damaged and apply oil to the spline.

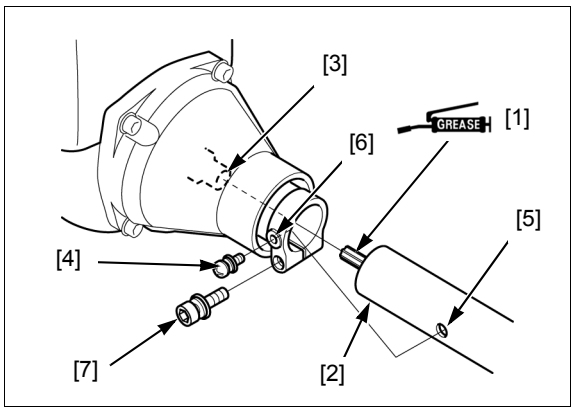
Install the frame pipe [2] by aligning the driveshaft spline and clutch outer spline [3].

Install the screw/washer [4] by aligning the screw hole [5] of the frame pipe with screw hole of the engine mounting bracket [6].
Tighten the screw/washer to the specified torque.

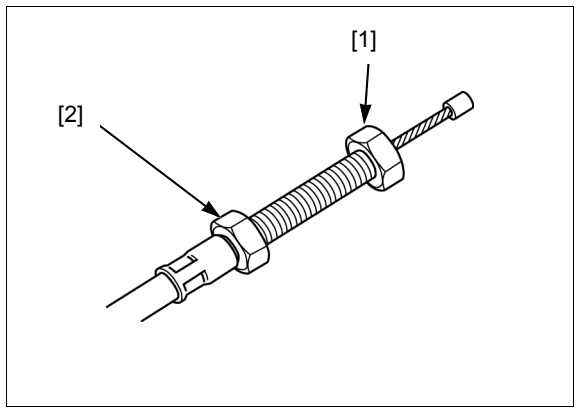
TORQUE: 4.2 N·m (0.43 kgf·m, 3.1 lbf·ft)

Install and tighten the socket bolt [7] to the specified torque.

TORQUE: 6.1 N·m (0.62 kgf·m, 4.5 lbf·ft)



Set the throttle cable lock nut [1] and adjust nut [2] at the ends of the threads as shown.



Install the throttle cable end [1] from the round hole [2] side in the swivel [3] of the carburetor throttle.

Set the throttle cable on the cable stay [4]. Adjust the throttle cable free play (page 3-6), then tighten the lock nut.

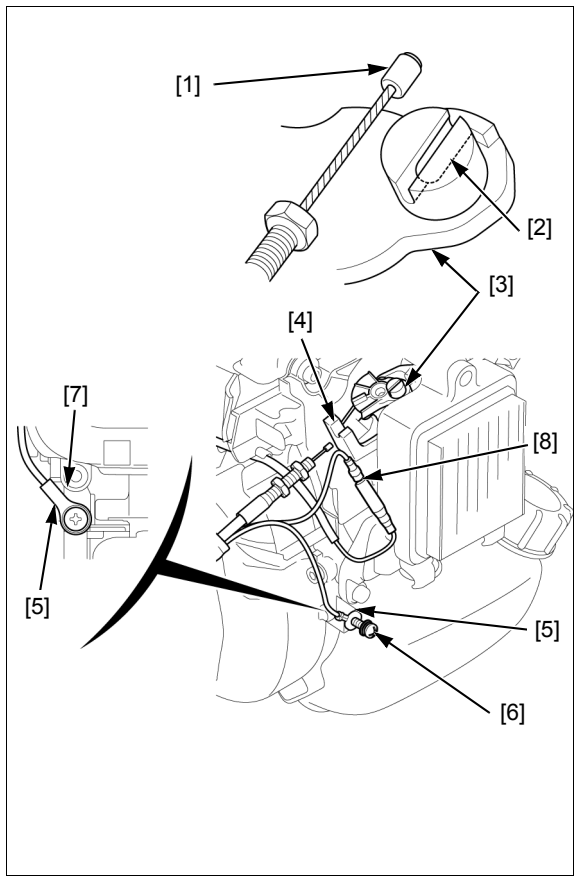
TORQUE: 1.8 N·m (0.18 kgf·m, 1.3 lbf·ft)

Install the ground terminal [5] and screw/washer [6] with it touching the boss [7] of air cleaner case as shown. Tighten the screw/washer to the specified torque.

TORQUE: 4.2 N·m (0.43 kgf·m, 3.1 lbf·ft)

Connect the engine stop switch connector [8].

Install the air cleaner cover (page 3-4).

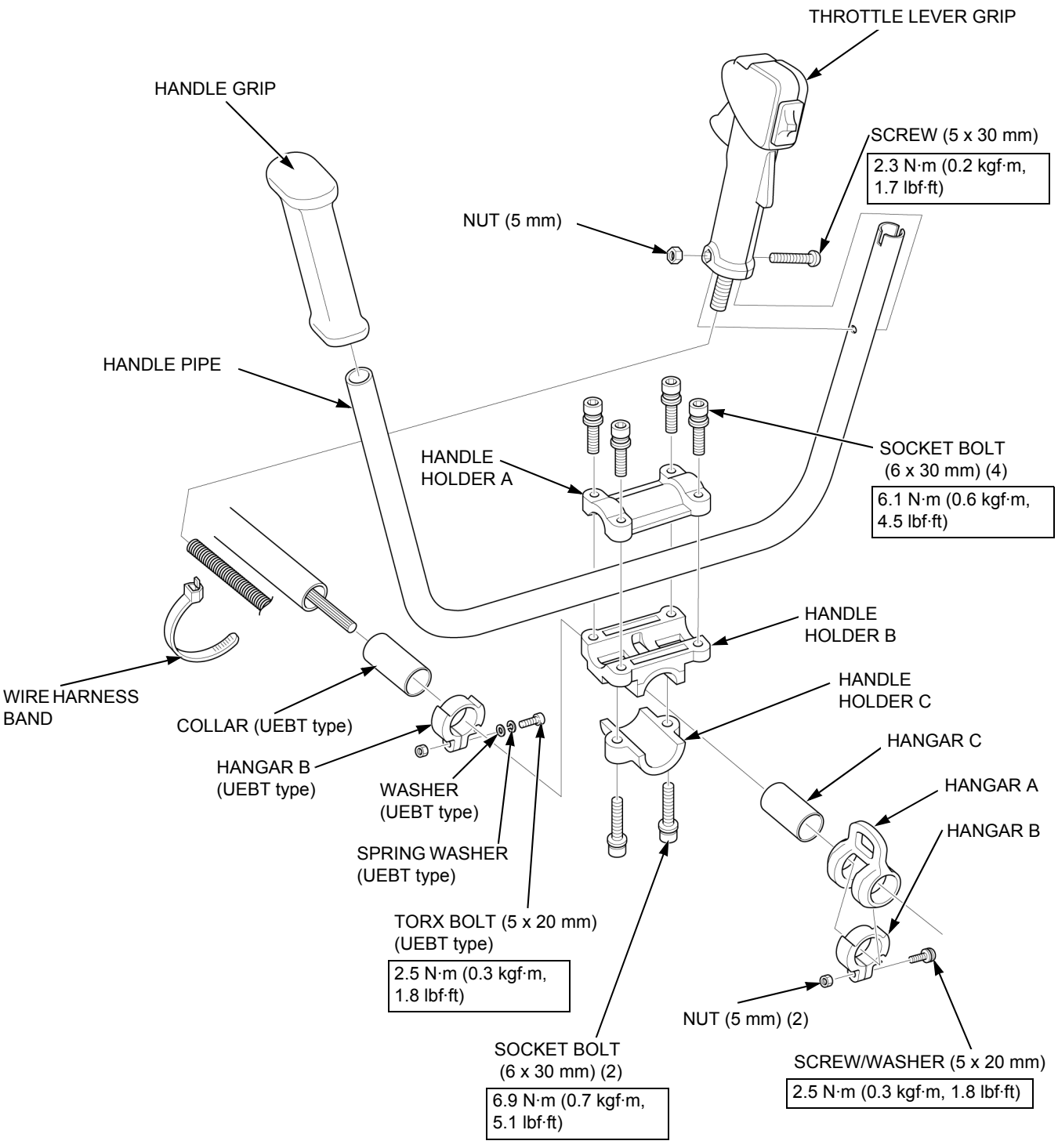


HANDLE PIPE/THROTTLE LEVER REMOVAL/INSTALLATION

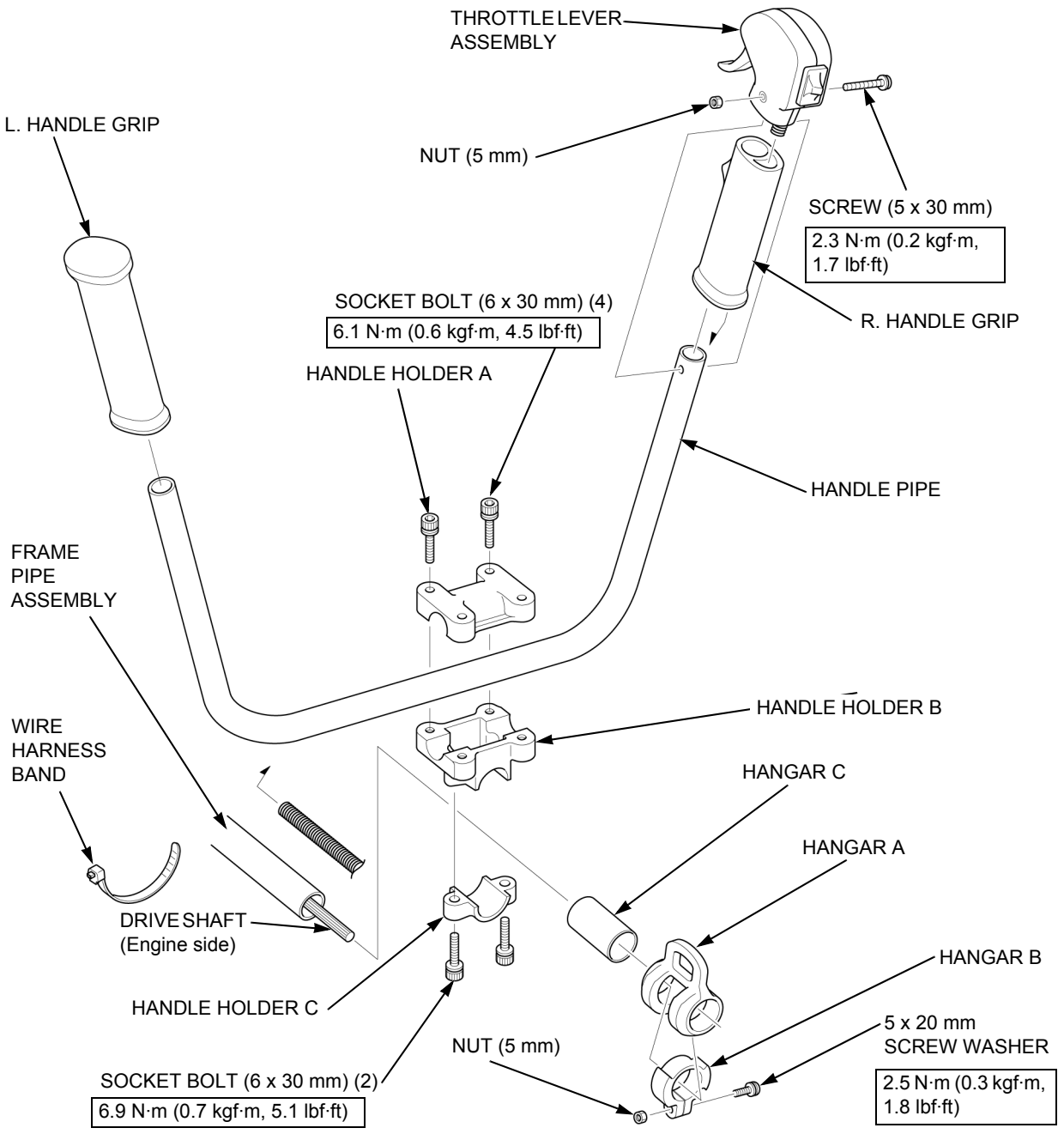
Remove the following:

- Frame pipe (page 14-2)
- Gear case/grass deflector:
  - Blade cutter type (page 13-2)
  - Nylon cutter type (page 13-7)

UEDT/UEBT/UTNT/U2NT types:



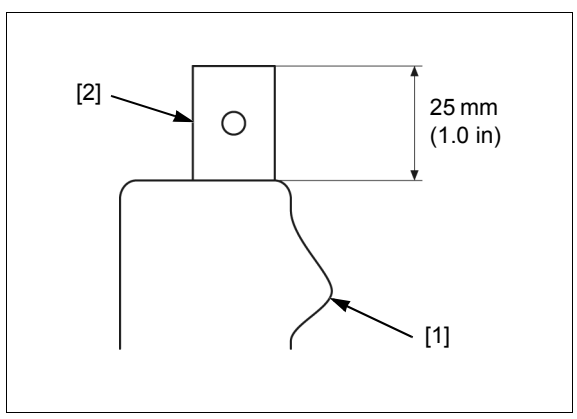
U2TT/U2ST types:



R.HANDLE GRIP INSTALLATION (U2ST/U2TT TYPES)

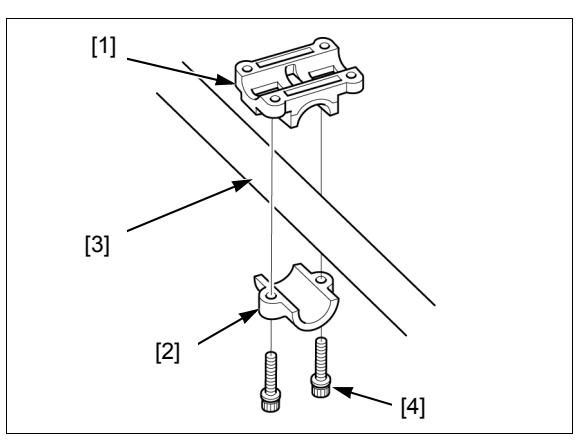
Apply soapy water inside the handle grip [1].

Insert the handle pipe [2] to the handle grip [1] as shown.



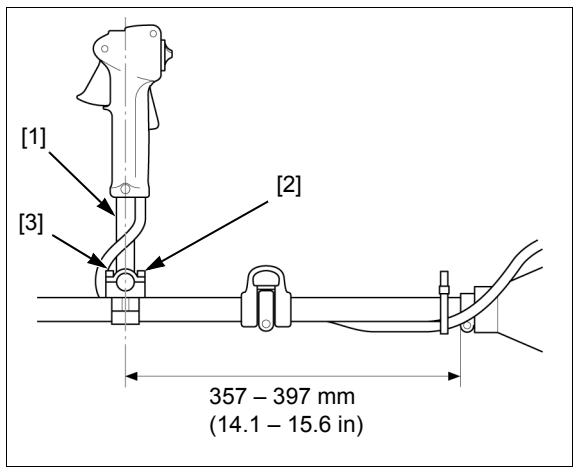
HANDLE HOLDER B, C INSTALLATION

Install the handle holder B [1] and C [2] on the frame pipe [3] and loosely tighten the socket bolts [4].



Set the handle pipe [1] on the handle holder B and install the handle holder A [2].
Loosely tighten the four socket bolts [3].

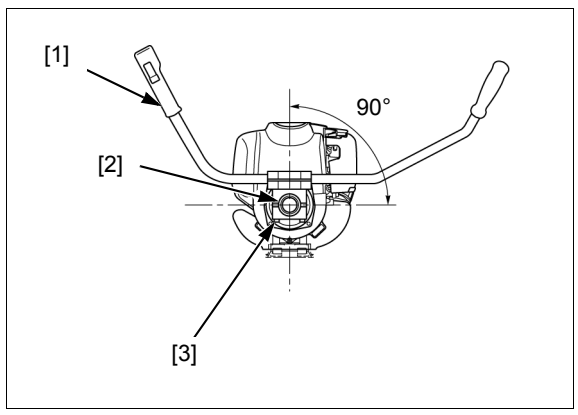
Move the handle holder B and C so that the length between the clutch housing B end (engine side) and the center of the handle holder B is 357 – 397 mm (14.1 – 15.6 in).



Adjust the handle pipe [1] so that it makes a right angle with the center line of the frame pipe [2] by viewing the handle pipe from the gear case side.

After adjustment, tighten the socket bolt [3] to the specified torque.

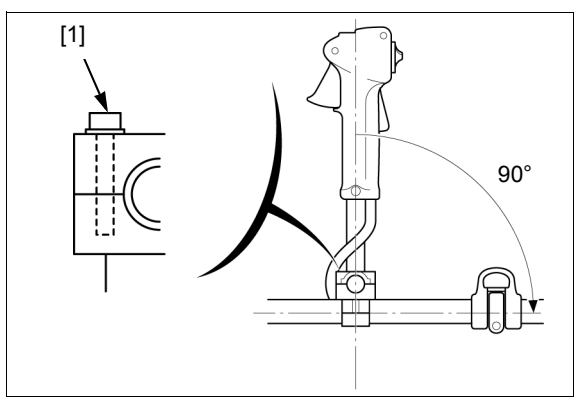
TORQUE: 6.9 N·m (0.7 kgf·m, 5.1 lbf·ft)



Adjust the handle pipe so that it makes a right angle with the frame pipe by viewing the handle pipe from the side.

After adjustment, tighten the socket bolt [1] to the specified torque.

TORQUE: 6.1 N·m (0.6 kgf·m, 4.5 lbf·ft)



HANGER HOLDER INSTALLATION

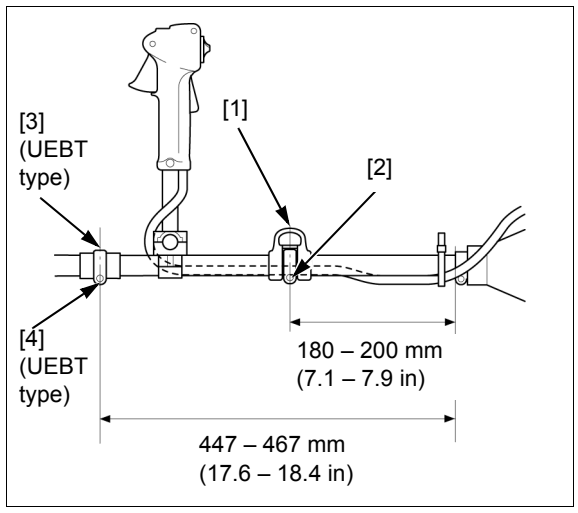
Install the hanger holder [1] at the position shown, and tighten the screw/washer [2] to the specified torque.

TORQUE: 2.5 N·m (0.3 kgf·m, 1.8 lbf·ft)

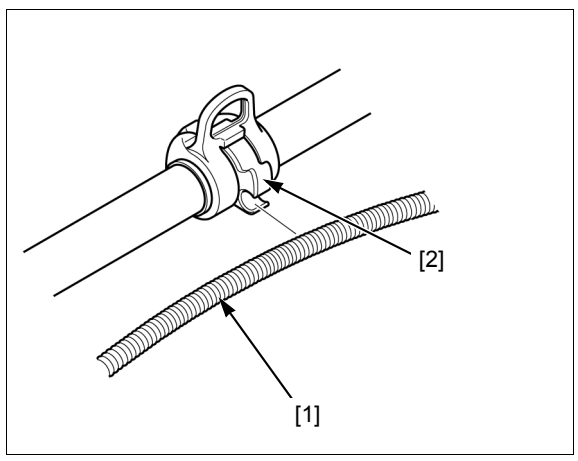
UEBT type:

Install the hanger holder [3] at the position shown, and tighten the torx bolt [4] to the specified torque.

TORQUE: 2.5 N·m (0.3 kgf·m, 1.8 lbf·ft)



Attach the corrugate tube [1] to the clamp of the hanger B [2].

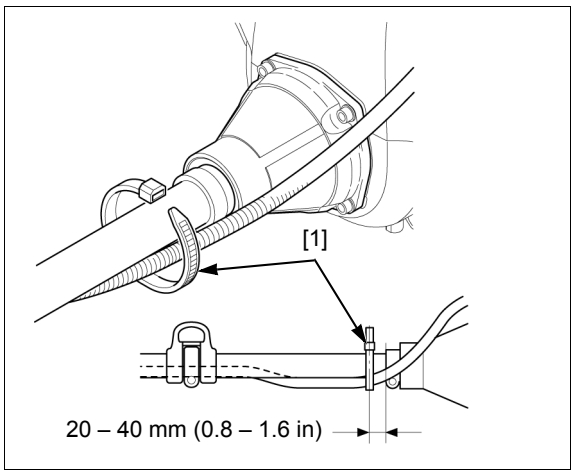


WIRE HARNESS BAND INSTALLATION

Set the wire harness band [1] at the respective positions shown.

NOTICE

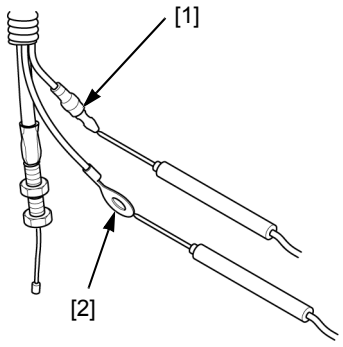
Make sure you install the wire harness band as shown. Failure to do so may cause the cable to be damaged during operation.



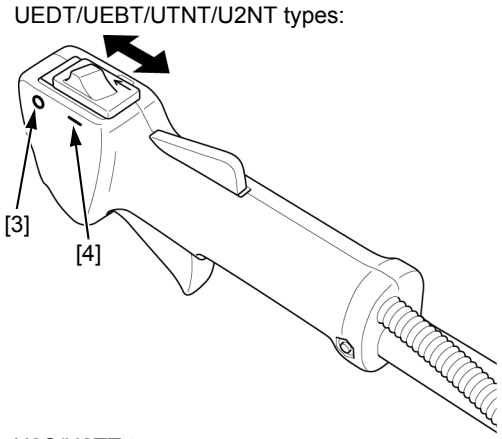
ENGINE STOP SWITCH INSPECTION

Check for continuity between the switch connector [1] and ground terminal [2].
There should be continuity with the engine stop switch at "STOP" [3] and no continuity with the engine stop switch "ON" [4].

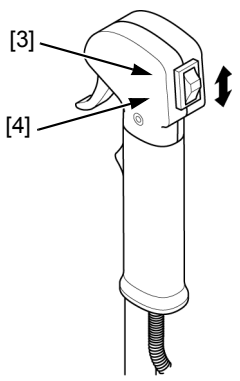
SWITCH POSITION	CONTINUITY
ON	No continuity
STOP	Continuity



UEDT/UEBT/UTNT/U2NT types:



U2S/U2TT types:



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HONDA

Shop Manual News

GRASS/WEED TRIMMER

Power Equipment

News No.	Issue Date
P/P-502	June 2019

SOME PARTS OF CHANGES

Applicable Information	Publication No.	Applicable Page
UMK450T	62VL510X	1-3

CHANGE LOCATIONS

The added instructions are shown in [ ] .

DIMENSIONS AND WEIGHTS SPECIFICATIONS

Model		UMK450T							
Description code		HAPT							
Type		U2TT	U2ST	U2NT	UTNT	UEBT		UEDT	
Cutting attachment	Type	2-blade cutter			Nylon cutter	3-blade cutter	Nylon cutter	3-blade cutter	Nylon cutter
	Diameter	350 mm (13.8 in)			440 mm (17.3 in)	255 mm (10.0 in)	440 mm (17.3 in)	255 mm (10.0 in)	440 mm (17.3 in)
	Rpm *1	5,250 min^{-1} (rpm)							
	Weight	0.48 kg (1.06 lbs)			0.38 kg (0.84 lbs)	0.37 kg (0.82 lbs)	0.38 kg (0.84 lbs)	0.37 kg (0.82 lbs)	0.38 kg (0.84 lbs)
Overall length		1,950 mm (76.8 in)			1,875 mm (73.8 in)	1,905 mm (75.0 in)	1,875 mm (73.8 in)	1,905 mm (75.0 in)	1,875 mm (73.8 in)
Overall width		640 mm (25.2 in)							
Overall height		440 mm (17.3 in)			470 mm (18.5 in)				
Dry weight *2		8.2 kg (18.1 lbs)			8.4 kg (18.5 lbs)				
Operating weight		9.2 kg (20.3 lbs)			9.1 kg (20.1 lbs)	9.3 kg (20.5 lbs)	9.1 kg (20.1 lbs)	9.3 kg (20.5 lbs)	9.1 kg (20.1 lbs)

*1: When engine rotation speed is 7,000 min^{-1} (rpm).
*2: Without cutting attachment, engine oil and fuel.

NOISE AND VIBRATION

Model	UMK450T	
Type	UEBT	
Cutter	Nylon	Metal blade
Sound pressure level at operator's ears (ISO 22868: 2011)	99 dB(A)	94 dB(A)
Sound pressure level at operator's ears (ISO 22868: 2011) Uncertainty	1 dB(A)	1 dB(A)
Measured sound power level (ISO 22868: 2011)	109 dB(A)	104 dB(A)
Measured sound power level (ISO 22868: 2011) Uncertainty	1 dB(A)	1 dB(A)
Vibration level at hand arm (ISO 22867: 2011)	4.3 m/s^2	4.1 m/s^2
Vibration level at hand arm (EN 12096: 1997 Annex D) Uncertainty	2.2 m/s^2	2.1 m/s^2