A Few Words About Safety

Service Information

The service and repair information contained in this manual is intended for use by qualified, professional technicians. Attempting service or repairs without the proper training, tools, and equipment could cause injury to you and/or others. It could also damage this Honda product or create an unsafe condition.

This manual describes the proper methods and procedures for performing service, maintenance, and repairs. Some procedures require the use special tools. Any person who intends to use a replacement part, service procedure, or a tool that is not recommended by Honda must determine the risks to their personal safety and the safe operation of this product.

If you need to replace a part, use Honda Genuine parts with the correct part number or an equivalent part. We strongly recommend that you do not use replacement parts of inferior quality.

For Your Customer's Safety

Proper service and maintenance are essential to the customer's safety and the reliability of this product. Any error or oversight while servicing this product can result in faulty operation, damage to the product, or injury to others.

⚠WARNING

Improper service or repairs can create an unsafe condition that can cause your customer or others to be seriously hurt or killed.

Follow the procedures and precautions in this manual and other service materials carefully.

For Your Safety

Because this manual is intended for the professional service technician, we do not provide warnings about many basic shop safety practices (e.g., Hot parts-wear gloves). If you have not received shop safety training or do not feel confident about your knowledge of safe servicing practices, we recommend that you do not attempt to perform the procedures described in this manual.

Some of the most important general service safety precautions are given below. However, we cannot warn you of every conceivable hazard that can arise in performing service and repair procedures. Only you can decide whether or not you should perform a given task.

⚠WARNING

Failure to properly follow instructions and precautions can cause you to be seriously hurt or killed.

Follow the procedures and precautions in this manual carefully.

Important Safety Precautions

Make sure you have a clear understanding of all basic shop safety practices and that you are wearing appropriate clothing and using safety equipment. When performing any service task, be especially careful of the following:

- Read all of the instructions before you begin, and make sure you have the tools, the replacement or repair parts, and the skills required to perform the tasks safely and completely.
- Protect your eyes by using proper safety glasses, goggles, or face shields anytime you hammer, drill, grind, or work around pressurized air, pressurized liquids, springs, or other stored-energy components. If there is any doubt, put on eye protection.
- Use other protective wear when necessary, for example gloves or safety shoes. Handling hot or sharp parts can cause severe burns or cuts. Before you grab something that looks like it can hurt you, stop and put on gloves.
- Protect yourself and others whenever you have equipment hoisted in the air. Anytime you lift this product with a hoist, make sure that the hoist hook is securely attached to the product.

Make sure the engine is off before you begin any servicing procedures, unless the instruction tells you to do otherwise. This will help eliminate several potential hazards:

- Carbon monoxide poisoning from engine exhaust. Be sure there is adequate ventilation whenever you run the engine.
- Burns from hot parts. Let the engine and exhaust system cool before working in those areas.
- Injury from moving parts. If the instruction tells you to run the engine, be sure your hands, fingers, and clothing are out of the way.

Gasoline vapors and hydrogen gasses from batteries are explosive. To reduce the possibility of a fire or explosion, be careful when working around gasoline or batteries.

- Use only a nonflammable solvent, not gasoline, to clean parts.
- Never store gasoline in an open container.
- Keep all cigarettes, sparks, and flames away from the battery and all fuel-related parts.

CONTENTS

How to use this manual

INTRODUCTION

This manual covers the service and repair procedures for the Honda FJ500 tiller.

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.

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.

SERVICE PUBLICATION OFFICE

Date of Issue: November 2012

SERVICE RULES

- Use Honda Genuine or Honda-recommended parts and lubricants or their equivalents. Parts that do not meet Honda's design specifications may damage the unit.
- Use the special tools designed for the product.
- Install new gaskets, O-rings, etc. when reassembling.
- When torquing bolts or nuts, begin with larger-diameter or inner bolts first and tighten to the specified torque diagonally, unless a particular sequence is specified.
- Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
- After reassembly, check all parts for proper installation and operation.
- Many screws used in this machine are self-tapping. Be aware that cross-threading or overtightening these screws will strip the threads and ruin the hole.

Use only metric tools when servicing this unit. Metric bolts, nuts, and screws are not interchangeable with non-metric fasteners. The use of incorrect tools and fasteners will damage the unit.

SYMBOLS

The symbols used throughout this manual show specific service procedures. If supplementary information is required pertaining to these symbols, it will be explained specifically in the text without the use of the symbols.

	Replace the part(s) with new one(s) before assembly.
	Use the recommend engine oil, unless otherwise specified.
	Use molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1:1).
	Use multi-purpose grease (lithium based multi-purpose grease NLGI #2 or equivalent).
	Use marine grease (water resistant urea based grease).
	Apply a locking agent. Use a medium strength locking agent unless otherwise specified.
	Apply sealant.
	Use automatic transmission fluid.
(○ x ○) (○)	Indicates the diameter, length, and quantity of metric bolts used.
page 1-1	Indicates the reference page.

ABBREVIATIONS

Throughout this manual, the following abbreviations are used to identify the respective parts or systems.

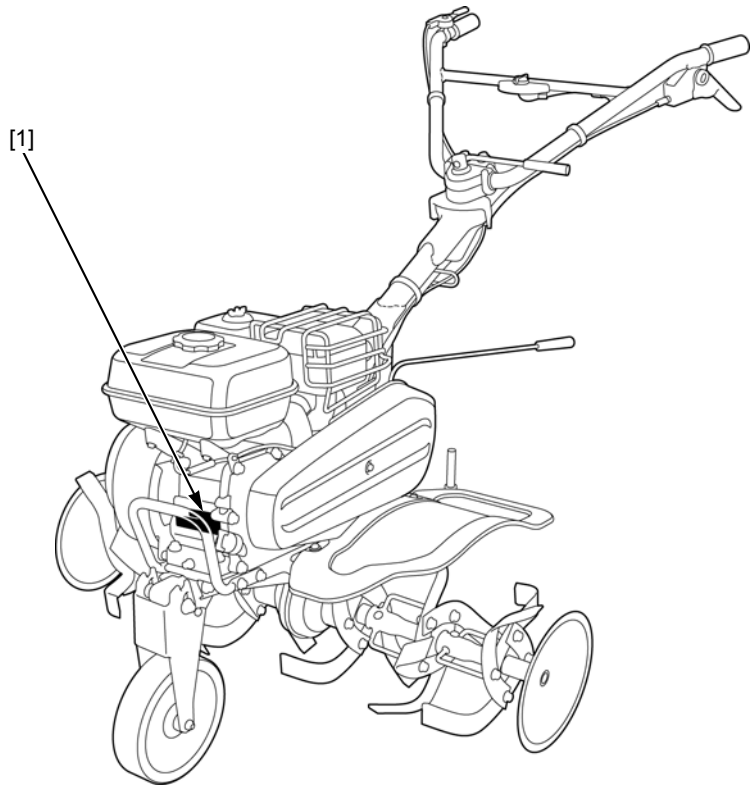
Abbreviated term	Full term
ACG	Alternator
A/F	Air Fuel Ratio
API	American Petroleum Institute
Approx.	Approximately
Assy.	Assembly
ATDC	After Top Dead Center
ATF	Automatic Transmission Fluid
ATT	Attachment
BAT	Battery
BDC	Bottom Dead Center
BTDC	Before Top Dead Center
BARO	Barometric Pressure
CKP	Crankshaft Position
Comp.	Complete
CMP	Camshaft Position
CYL	Cylinder
DLC	Data Link Connector
EBT	Engine Block Temperature
ECT	Engine Coolant Temperature
ECM	Engine Control Module
EMT	Exhaust Manifold Temperature
EOP	Engine Oil Pressure
EX	Exhaust
F	Front or Forward
GND	Ground
HO_2S	Heated Oxygen sensor
HST	Hydrostatic Transmission
IAB	Intake Air Bypass
IAC	Idle Air Control
IAT	Intake Air Temperature
I.D.	Inside diameter
IG or IGN	Ignition
IN	Intake
INJ	Injection
L.	Left
MAP	Manifold Absolute Pressure
MIL	Malfunction Indicator Lamp
O.D.	Outside Diameter
OP	Optional Part
PGM-FI	Programmed-Fuel Injection
P/N	Part Number
Qty	Quantity
R.	Right
SAE	Society of Automotive Engineers
SCS	Service Check Signal
STD	Standard
SW	Switch
TDC	Top Dead Center
TP	Throttle Position
VST	Variable Speed Transmission
VTEC	Variable Valve Timing & Valve Lift Electronic Control

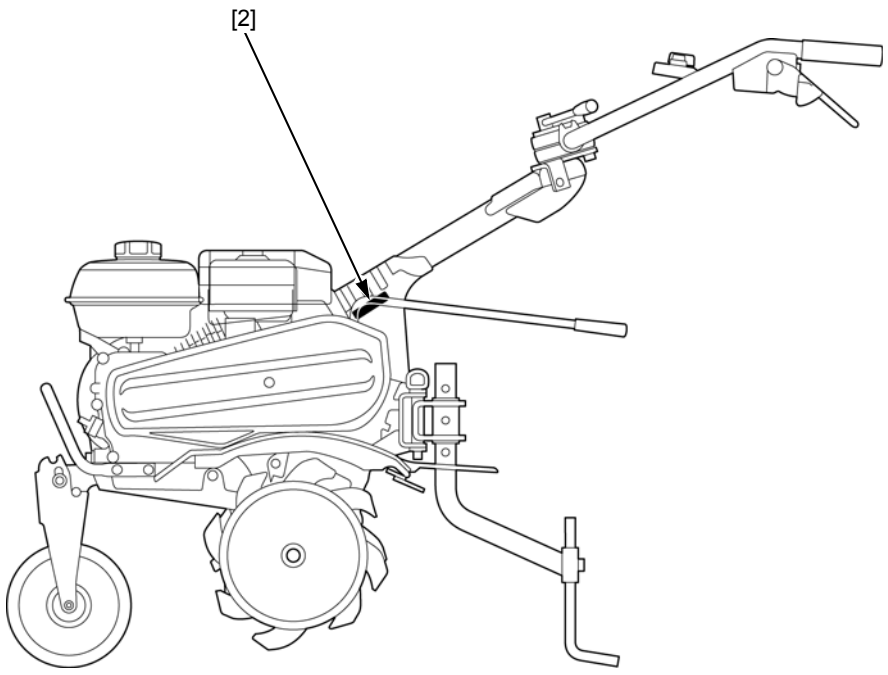
Bl	Black	G	Green	Br	Brown	Lg	Light green
Y	Yellow	R	Red	O	Orange	P	Pink
Bu	Blue	W	White	Lb	Light blue	Gr	Gray

1. SPECIFICATIONS

SERIAL NUMBER LOCATION

The engine serial number [1] is located on the cylinder block.
The frame serial number [2] is located on the handle column.
Refer to these numbers when ordering parts and when making technical inquiries.





SPECIFICATIONS

DIMENSIONS AND WEIGHTS

Model	FJ500			
Description code	FAAC			
Type code	SER	SE	DER	DE
Overall length*	1,395 mm (54.9 in)		1,435 mm (56.5 in)	
Overall width	925 mm (36.4 in)	610 mm (24.0 in)	925 mm (36.4 in)	610 mm (24.0 in)
Overall height*	990 mm (39.0 in)		1,015 mm (40.0 in)	
Minimum ground clearance	80 mm (3.1 in)			
Dry weight**	57 kg (126 lbs)	45 kg (99 lbs)	62 kg (137 lbs)	50 kg (110 lbs)
Operating weight***	60 kg (132 lbs)	48 kg (106 lbs)	65 kg (143 lbs)	53 kg (117 lbs)

Each dimension shall be determined when tines with each rotor is on level surface with engine bed in a level position.

Each mass value when french rotor (11 kg, 24 lbs) is installed shall be given.

*: Dimensions of overall length and overall height shall be determined when locating tightening position of handle pipe middle of movable range in vertical direction.

**: Without oil and fuel.

***: With oil (specified upper level) and fuel (fuel tank upper level).

ENGINE

Model	GX160H1
Description code	GCAAH
Type	4-stroke, OHV, single cylinder, inclined by 25°
Total displacement	163 cm^3 (9.9 cu-in)
Bore and stroke	68.0 x 45.0 mm (2.68 x 1.77 in)
Max. horsepower	3.6 kW (4.9 PS)/3,600 min^{-1} (rpm)
Max. torque	10.3 N·m (1.1 kgf·m, 8 lbf·ft)/2,500 min^{-1} (rpm)
Compression ratio	8.5 : 1
Cooling system	Forced-air
Ignition system	Transistorized magneto ignition
Ignition timing	25° B.T.D.C.
Spark plug	BPR5ES (NGK), W16EPR-U (DENSO)
Carburetor	Horizontal type, butterfly valve
Air cleaner	Dual element type
Lubricating system	Splash
Engine oil capacity	0.58 liter (0.61 US qt, 0.51 Imp qt)
Recommended engine oil	SAE 10W-30 API service classification SE or higher
Starting system	Recoil
Stopping system	Ignition primary circuit ground
Fuel used	Unleaded gasoline with a pump octane rating 86 or higher
Fuel tank capacity	2.4 liters (0.63 US gal, 0.53 Imp gal)
P.T.O. shaft rotation	Counterclockwise (from P.T.O. side)
Breather system	Flat valve type

SPECIFICATIONS

FRAME

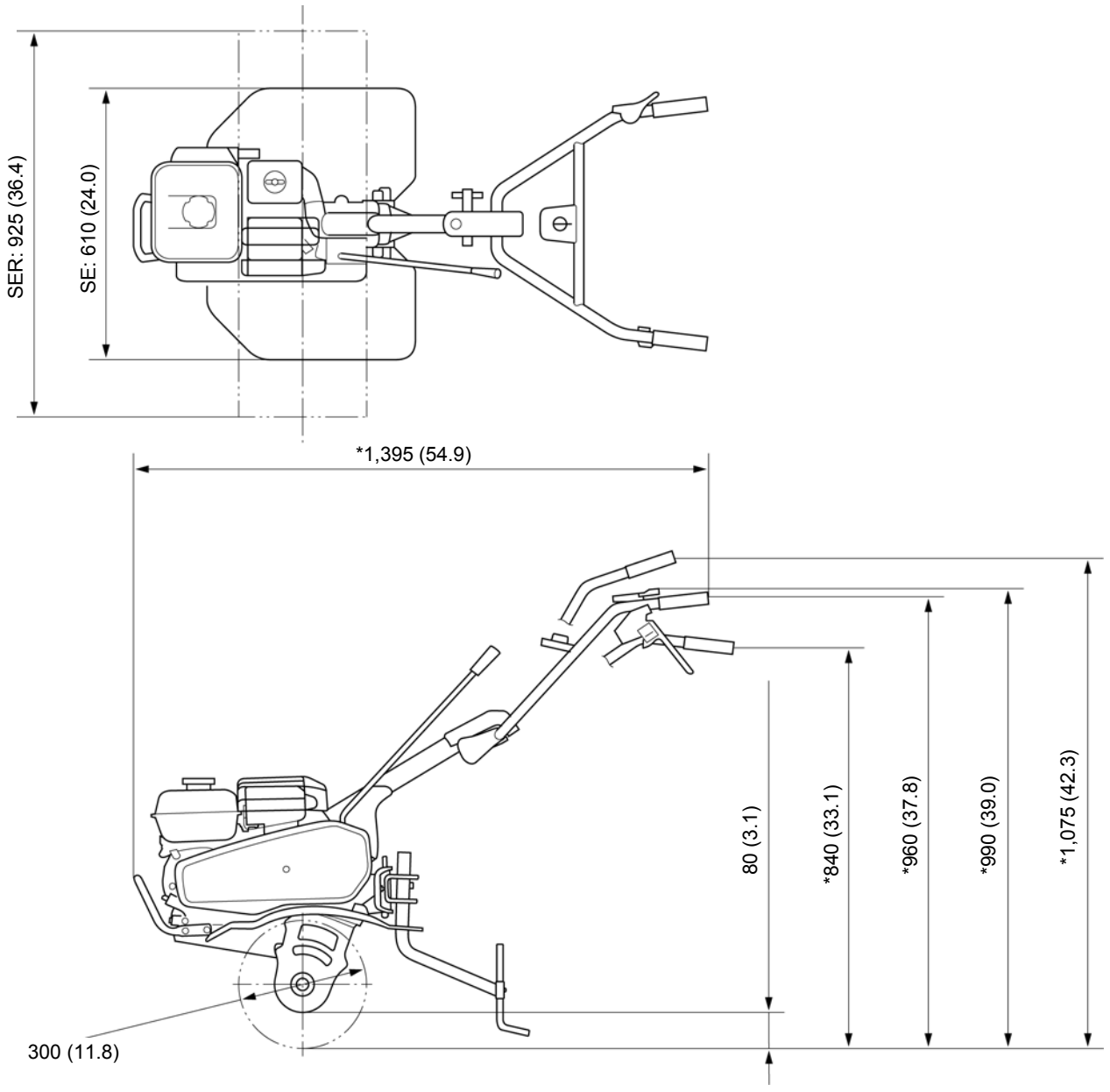
Model		FJ500			
Type code		SER	SE	DER	DE
Rotor type		French rotor	–	French rotor	–
Standard handle height (with rotor operation position)		960 mm (37.8 in)		970 mm (38.2 in)	
Handle height adjustment		840 – 1,075 mm (33.1 – 42.3 in)		805 – 1,120 mm (31.7 – 44.1 in)	
Handle swing angle		–		Left: 30°, Right 30°	
Rear hitch width		100 mm (3.9 in)			
Rear hitch height		75.0 – 76.0 mm (2.95 – 2.99 in)			
Tillage depth adjustment		Move drag bar up and down (5 height positions)	–	Move drag bar up and down (5 height positions)	–
Tillage width	2 strand	350 mm (13.8 in)	–	350 mm (13.8 in)	–
	4 strand	630 mm (24.8 in)	–	630 mm (24.8 in)	–
	6 strand	900 mm (35.4 in)	–	900 mm (35.4 in)	–
Number of tines	2 strand	4 tines per rotor	–	4 tines per rotor	–
	4 strand	8 tines per rotor	–	8 tines per rotor	–
	6 strand	12 tines per rotor	–	12 tines per rotor	–
Rotor assembly		O.D. 300 mm (11.8 in)	–	O.D. 300 mm (11.8 in)	–
Engine to transmission mechanism		V-belt			
V-belt		W400 SB-38			
Clutch		Belt tension type			
Clutch operation		Manual lever (2 motion)			
Transmission lubrication		Oil bath			
Transmission oil capacity		0.95 liter (1.00 US qt, 0.84 Imp qt)			
Recommended transmission oil		SAE 10W-30 API service classification SE or higher			
Transmission final gear ratio	1st	31.9		45.3	
	2nd	–		31.9	
	R	128.6			
Rotor shaft speed *		1st: 112.9 min^{-1} (rpm), R: 28.0 min^{-1} (rpm)		1st: 79.5 min^{-1} (rpm), 2nd: 112.9 min^{-1} (rpm), R: 28.0 min^{-1} (rpm)	
Measured sound power level (2000/14/EC, 2005/88/EC)		96 dB (A)			
Uncertainty of measured sound power level (2000/14/EC)		2 dB (A)			

*: at engine speed 3,600 min^{-1} (rpm)

DIMENSIONAL DRAWINGS

SER, SE TYPE

Unit: mm (in)



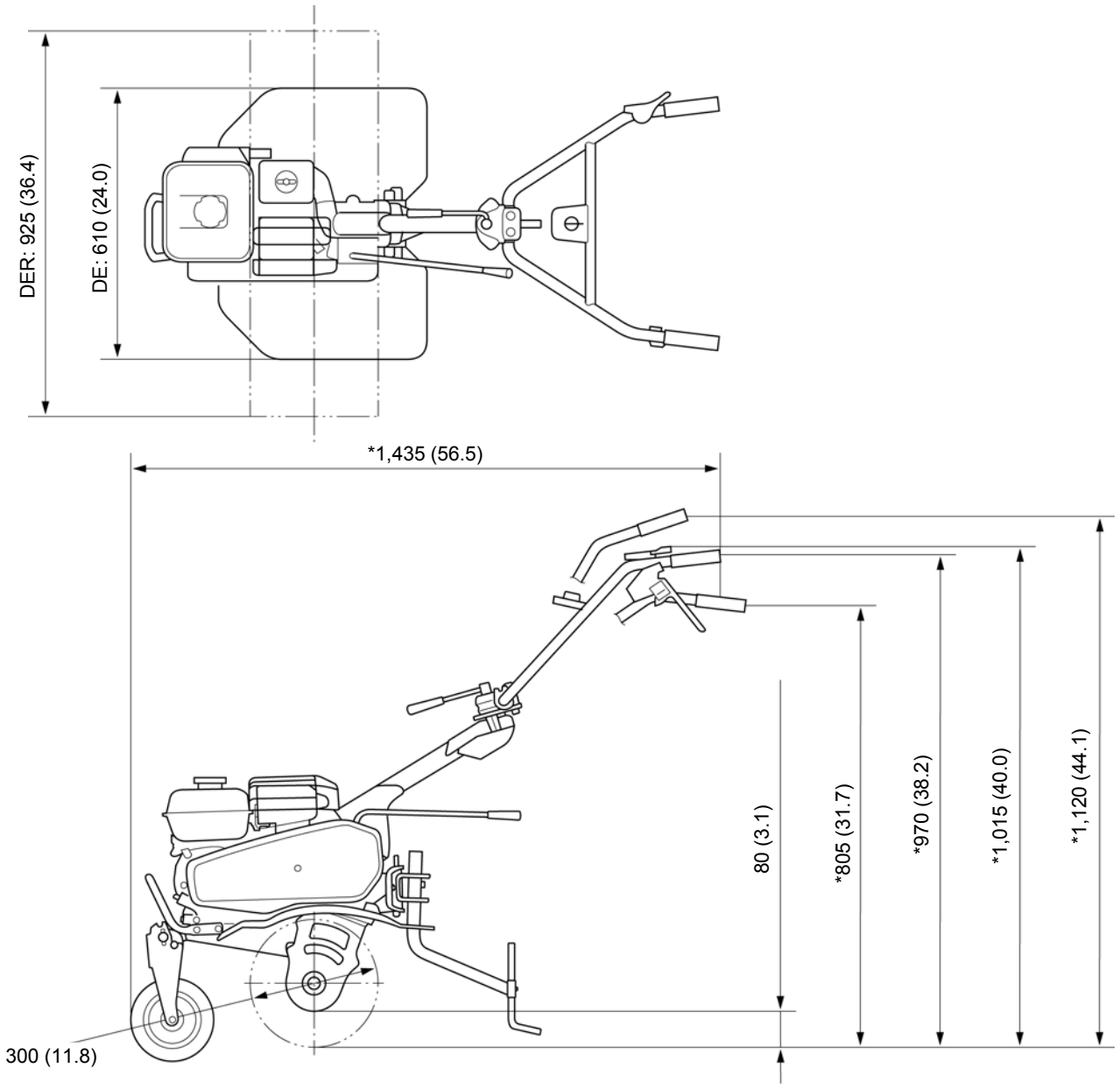
Each dimension shall be determined when tines with each rotor is on level surface with engine bed in a level position.

*: Dimensions of overall length and overall height shall be determined when locating tightening position of handle pipe middle of movable range in vertical direction.

SPECIFICATIONS

DER, DE TYPE

Unit: mm (in)

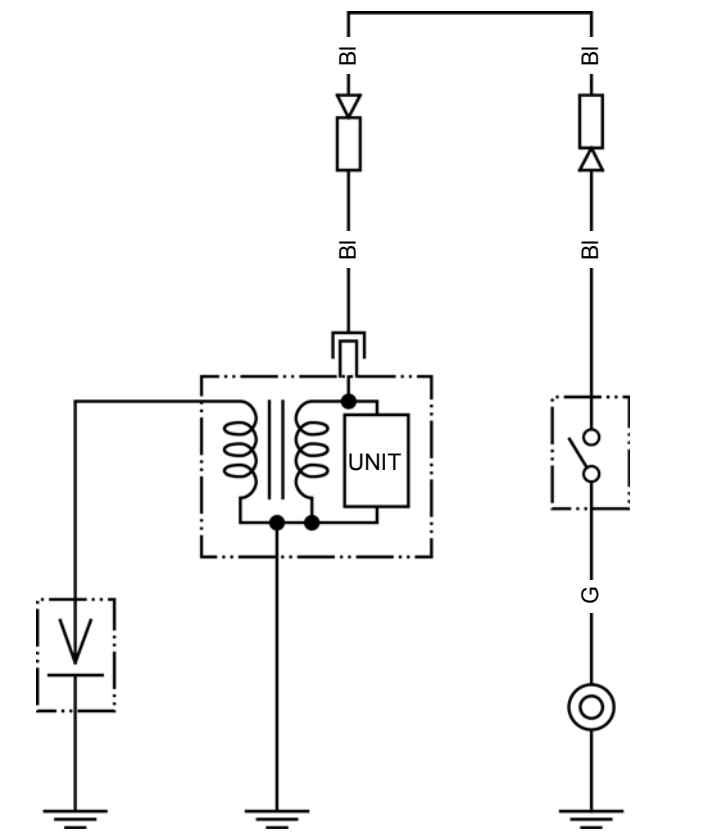


Each dimension shall be determined when tines with each rotor is on level surface with engine bed in a level position.

*: Dimensions of overall length and overall height shall be determined when locating tightening position of handle pipe middle of movable range in vertical direction.

WIRING DIAGRAM

BI: BLACK
G: GREEN



MEMO

2. SERVICE INFORMATION

MAINTENANCE STANDARDS

ENGINE

Unit: mm (in)

Part	Item		Standard	Service limit
Engine	Idle speed		1,250 – 1,550 min^{-1} (rpm)	–
	Maximum engine speed (at no load)		3,800 $^{0}_{-200}$ min^{-1} (rpm)	–
	Cylinder compression		0.59 MPa (6.0 kgf/cm^2, 86 psi)/600 min^{-1} (rpm)	–
Cylinder	Sleeve I.D.		68.000 – 68.015 (2.6772 – 2.6778)	68.165 (2.6837)
Cylinder head	Warpage		–	0.10 (0.004)
Piston	Skirt O.D. at 10 mm (0.4 in) from bottom		67.965 – 67.985 (2.6758 – 2.6766)	67.845 (2.6711)
	Piston-to-cylinder clearance		0.015 – 0.050 (0.0006 – 0.0020)	0.12 (0.005)
	Piston pin bore I.D.		18.002 – 18.008 (0.7087 – 0.7090)	18.048 (0.7106)
Piston pin	Pin O.D.		17.994 – 18.000 (0.7084 – 0.7087)	17.954 (0.7068)
	Piston pin-to-piston pin bore clearance		0.002 – 0.014 (0.0001 – 0.0006)	0.06 (0.002)
Piston rings	Ring side clearance	Top	0.035 – 0.070 (0.0014 – 0.0028)	0.15 (0.006)
		Second	0.045 – 0.080 (0.0018 – 0.0032)	0.15 (0.006)
	Ring end gap	Top	0.200 – 0.350 (0.0079 – 0.0138)	1.0 (0.04)
		Second	0.350 – 0.550 (0.0138 – 0.0217)	1.0 (0.04)
		Oil (side rail)	0.10 – 0.60 (0.004 – 0.024)	1.0 (0.04)
	Ring width	Top	0.95 – 0.97 (0.037 – 0.038)	0.93 (0.037)
		Second	0.94 – 0.96 (0.037 – 0.038)	0.92 (0.036)
Connecting rod	Small end I.D.		18.005 – 18.020 (0.7089 – 0.7094)	18.07 (0.711)
	Big end I.D.		30.020 – 30.033 (1.1819 – 1.1824)	30.066 (1.1837)
	Big end oil clearance		0.040 – 0.063 (0.0016 – 0.0025)	0.12 (0.005)
	Big end side clearance		0.10 – 0.40 (0.004 – 0.016)	1.10 (0.043)
Crankshaft	Crankpin O.D.		29.970 – 29.980 (1.1799 – 1.1803)	29.920 (1.1780)
Valves	Valve clearance	IN	0.15 ± 0.02 (0.006 ± 0.001)	–
		EX	0.20 ± 0.02 (0.008 ± 0.001)	–
	Valve stem O.D.	IN	5.468 – 5.480 (0.2153 – 0.2157)	5.318 (0.2094)
		EX	5.425 – 5.440 (0.2136 – 0.2142)	5.275 (0.2077)
	Guide-to-stem clearance	IN	0.020 – 0.044 (0.0008 – 0.0017)	0.10 (0.004)
		EX	0.060 – 0.087 (0.0024 – 0.0034)	0.12 (0.005)
	Valve guide I.D.	IN/EX	5.500 – 5.512 (0.2165 – 0.2170)	5.572 (0.2194)
	Valve guide installation height	IN	1.0 (0.04)	–
	Valve seat width		0.7 – 0.9 (0.03 – 0.04)	2.0 (0.08)
	Valve spring free length		30.5 (1.20)	29.0 (1.14)
	Valve spring perpendicularity		–	1.5° max.
Camshaft	Camshaft O.D.		13.966 – 13.984 (0.5498 – 0.5506)	13.916 (0.5479)
	Cam height	IN	27.500 – 27.900 (1.0827 – 1.0984)	27.45 (1.081)
		EX	27.547 – 27.947 (1.0845 – 1.1003)	27.50 (1.083)
Cylinder block	Camshaft holder I.D.		14.000 – 14.018 (0.5512 – 0.5519)	14.048 (0.5531)
Crankcase cover	Camshaft holder I.D.		14.000 – 14.018 (0.5512 – 0.5519)	14.048 (0.5531)
Spark plug	Gap		0.70 – 0.80 (0.028 – 0.031)	–
Spark plug cap	Resistance		7.5 – 12.5 kΩ	–
Ignition coil	Resistance	Primary side	0.69 – 0.83 Ω	–
		Secondary side	5.63 – 6.87 kΩ	–
	Air gap		0.20 – 0.60 (0.008 – 0.024)	–
Carburetor	Main jet		#68	–
	Float level height		3.4 (0.13)	–
	Pilot screw opening		No adjustment	–

FRAME

Unit: mm (in)

Part	Item		Standard	Service limit
V-belt	Distance L between upper and lower belt runs		43 – 49 (1.7 – 1.9)	–
	Belt stopper clearance	A	1.0 – 3.0 (0.04 – 0.12)	–
		B	7.0 – 10 (0.28 – 0.4)	–
		C	1.0 – 3.0 (0.04 – 0.12)	–
Throttle	Lever freeplay		5.0 – 10 (0.20 – 0.4)	–
Clutch	Lever freeplay		2.0 – 4.0 (0.08 – 0.16)	–

TORQUE VALUES

ENGINE TORQUE VALUES

Item	Tread Dia.	Torque values			Remarks
	mm	N·m	kgf·m	lbf·ft	
Cylinder head bolt	M8 x 1.25	24	2.4	18	Apply engine oil to the bolt threads and seating surface.
Rocker arm pivot bolt	M8 x 1.25	24	2.4	18	
Rocker arm pivot lock nut	M6 x 0.5	10	1.0	7	
Crankcase cover bolt	M8 x 1.25	24	2.4	18	
Engine oil drain bolt	M10 x 1.25	18	1.8	13	
Connecting rod bolt	M7 x 1.0	12	1.2	9	Apply engine oil to the bolt threads and seating surface.
Spark plug	M14 x 1.25	18	1.8	13	
Flywheel nut	M14 x 1.5	75	7.6	55	Apply engine oil to the nut threads and seating surface.
Fuel tank bolt	M6 x 1.0	10	1.0	7	
Fuel tank nut	M6 x 1.0	10	1.0	7	
Fuel filter joint	M10 x 1.25	2	0.2	1.5	
Air cleaner elbow nut	M6 x 1.0	9	0.9	6.6	
Hose band screw	M4 x 0.7	–	–	–	See page 5-4
Muffler hex nut	M8 x 1.25	24	2.4	18	
Muffler deflector/guide screw	M4 x 1.5	2	0.2	1.5	
Tail pipe screw	M5 x 0.8	3	0.3	2.2	
Muffler protector screw	M5 x 0.8	3	0.3	2.2	
Governor arm nut	M6 x 1.0	3	0.3	2.2	See page 6-3
Sediment cup	–	4.5	0.5	3.3	
Fuel valve lever screw	M3 x 0.5	0.7	0.07	0.5	Apply LOCTITE® 271 or equivalent to the threads (page 5-8).
Valve cover screw	M3 x 0.5	0.8	0.08	0.6	
Float chamber screw	M5 x 0.8	2.5	0.3	1.8	
Stop screw	M3 x 0.5	0.7	0.07	0.5	
Baffle screw	M3 x 0.5	0.8	0.08	0.6	
Recoil starter center screw	M6 x 1.0 (Special bolt)	5.4	0.6	4.0	

FRAME TORQUE VALUES

Item	Tread Dia.	Torque values			Remarks
	mm	N·m	kgf·m	lbf·ft	
Belt cover stay bolt/washer	M6 x 1.0	6	0.6	4.4	
Drive pulley bolt	M8 x 1.25	26.5	2.7	20	
Shift fork hex bolt	M6 x 1.0	10	1.0	7	
Cable guide screw	M5 x 1.5	3	0.3	2.2	
Handle column cover screw (SER, SE TYPE)	M5 x 1.5	3	0.3	2.2	
Engine stop switch cover screw	M5 x 1.75	3	0.3	2.2	
Rotor nut	M8 x 1.25	26.5	2.7	20	

STANDARD TORQUE VALUES

Item	Tread Dia.	Torque values			Remarks
		N·m	kgf·m	lbf·ft	
Screw	4 mm	2	0.2	1.5	
	5 mm	4	0.4	2.9	
	6 mm	9	0.9	6.6	
Bolt and nut	5 mm	5	0.5	3.6	
	6 mm	10	1.0	7	
	8 mm	22	2.2	16	
	10 mm	34	3.5	25	
	12 mm	54	5.5	40	
Flange bolt and nut	6 mm	12	1.2	9	
	8 mm	27	2.8	20	
	10 mm	39	4.0	29	
	12 mm	59	6.0	44	
SH (Small head) flange bolt	6 mm	9	0.9	6.6	
CT (Cutting threads) flange bolt (Retightening)	6 mm	10	1.0	7	

LUBRICATION & SEAL POINT

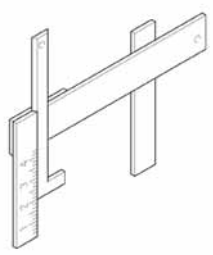
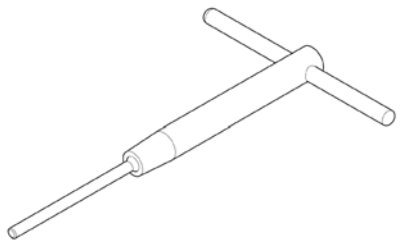
ENGINE

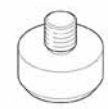
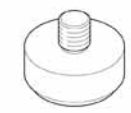
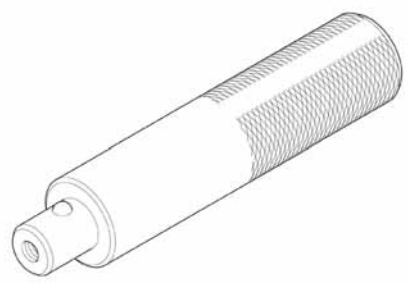
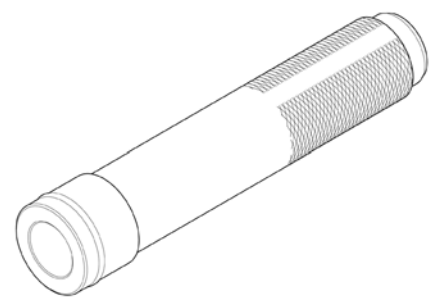
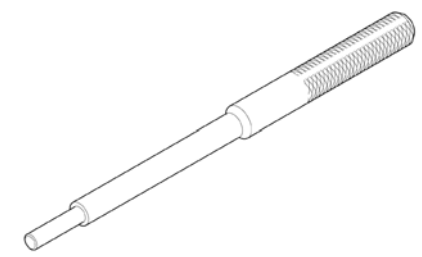
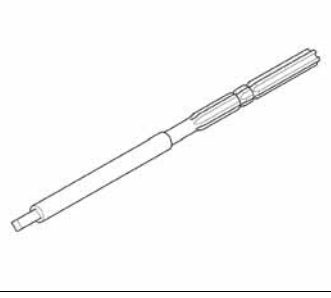
Material	Location	Remarks
Engine oil	Crankshaft pin and gear teeth	
	Piston outer surface, ring groove and piston pin hole	
	Piston ring whole surface	
	Piston pin whole surface	
	Cylinder inner surface	
	Connecting rod big and small end bearing	
	Connecting rod bolt threads and seating surface	
	Camshaft cam profile and journal	
	Valve lifter, stem end and slipper surface	
	Valve stem sliding surface and stem end	
	Rocker arm tappet surface and pivot	
	Rocker arm pivot threads and seating surface	
	Flywheel nut threads and seating surface	
	Cylinder head bolt threads and seating surface	
	Governor weight holder gear and sliding surface	
	Governor shaft journal	
	Governor arm shaft journal	
	O-ring whole surface	
Use molybdenum oil solution (mixture of engine oil and molybdenum grease in a ratio of 1:1)	Camshaft cam profile	When installing a new camshaft.
Multi-purpose grease	Recoil starter case starter pulley sliding surface	
	Ratchet sliding surface	
	Spring retainer inside	
	Oil seal rips	
Silicone grease	Fuel valve groove	See page 5-8
	Fuel valve cover sliding surface	See page 5-8
LOCTITE® 271 or equivalent	Fuel valve lever screw threads	See page 5-8

FRAME

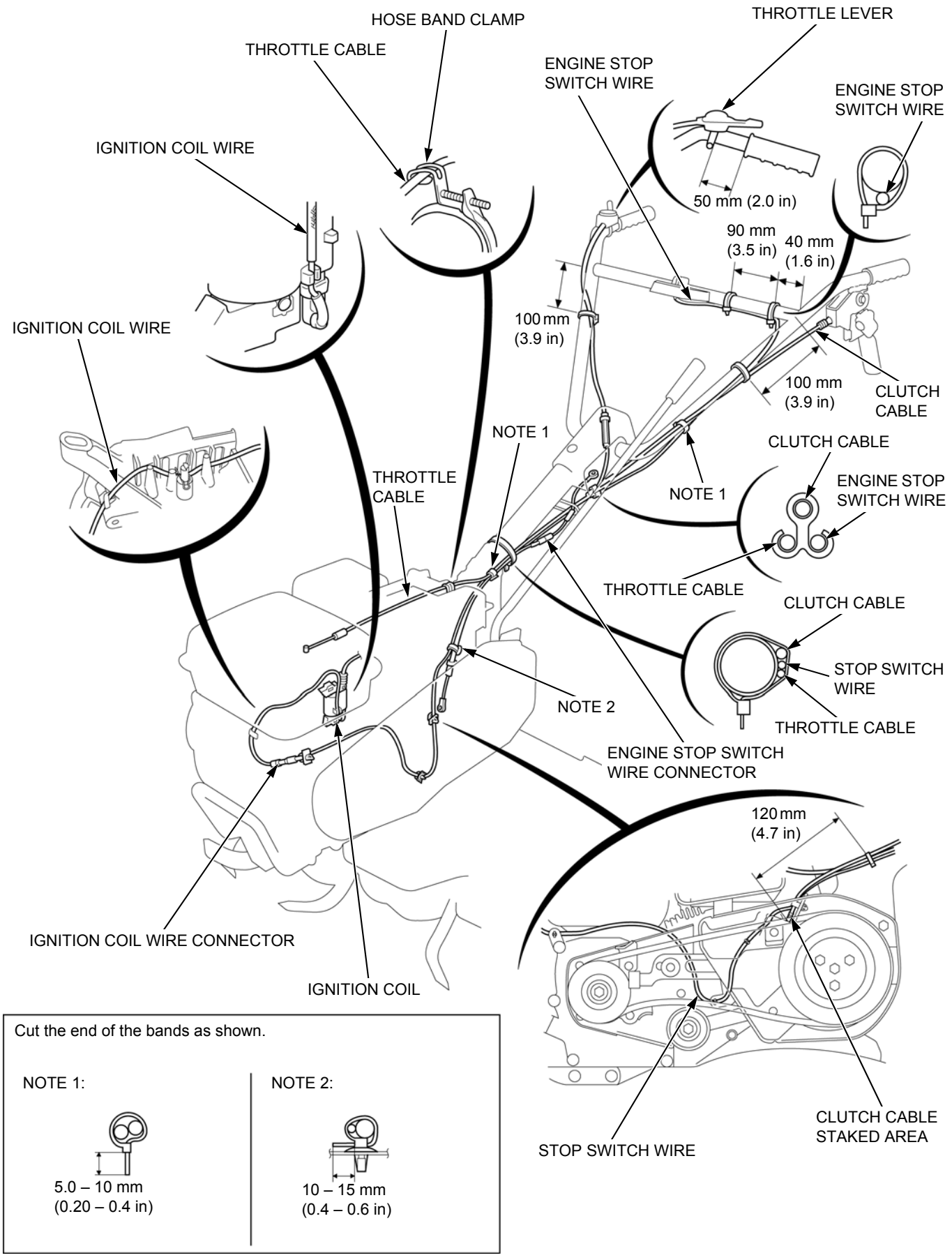
Material	Location	Remarks
Transmission oil	Transmission oil filler cap O-ring whole surface	
Shell Alvania grease RA or equivalent	Clutch lever pin (8 mm) sliding surface	
	Change lever holder change lever sliding surface	
	Handle column pivot change lever holder sliding surface	
	Tension arm shaft tension arm sliding surface	
	Throttle lever control plate sliding surface	
	Front wheel arm shaft sliding surface (DER, DE, TYPE)	
	Front wheel collar sliding surface (DER, DE, TYPE)	
ThreeBond® 1530C or equivalent	Change lever grip inside	
	Handle grip inside	

TOOLS

Float level gauge 07401-0010000 	Seat cutter, 27.5 mm (45° IN) 07780-0010200 	Seat cutter, 24.5 mm (45° EX) 07780-0010100 
Flat cutter, 28 mm (32° IN) 07780-0012100 	Flat cutter, 25 mm (32° EX) 07780-0012000 	Interior cutter, 30 mm (60° IN/EX) 07780-0014000 
Cutter holder 5.5 mm 07781-0010101 	Attachment, 52 x 55 mm 07746-0010400 	Attachment, 37 x 40 mm 07746-0010200 

Pilot, 22 mm 07746-0041000 	Pilot, 25 mm 07746-0040600 	Pilot, 28 mm 07746-0041100 
Driver 07749-0010000 	Driver, 22 mm I.D. 07746-0020100 	Valve guide driver, 5.5 mm 07742-0010100 
Valve guide reamer, 5.510 mm 07984-2000001 		

CABLE/HARNESS ROUTING



Cut the end of the bands as shown.

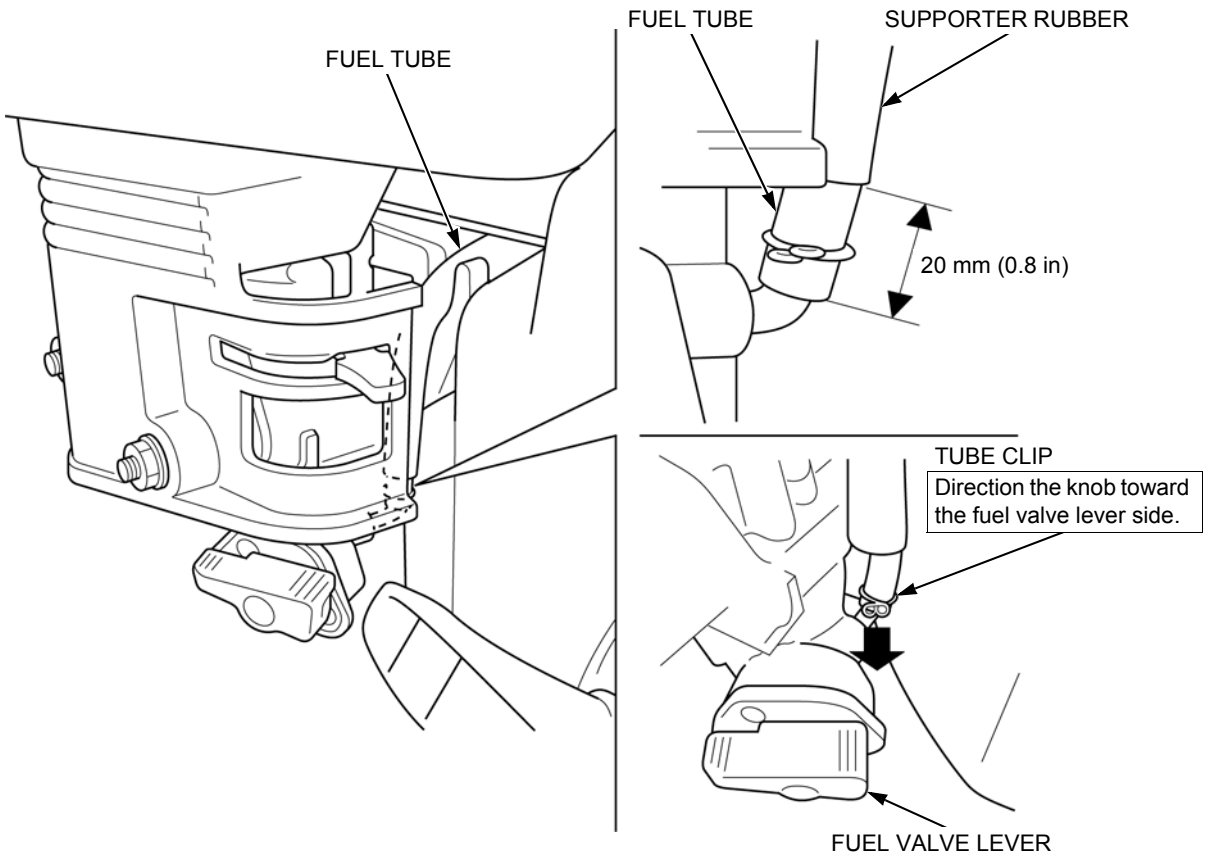
NOTE 1:

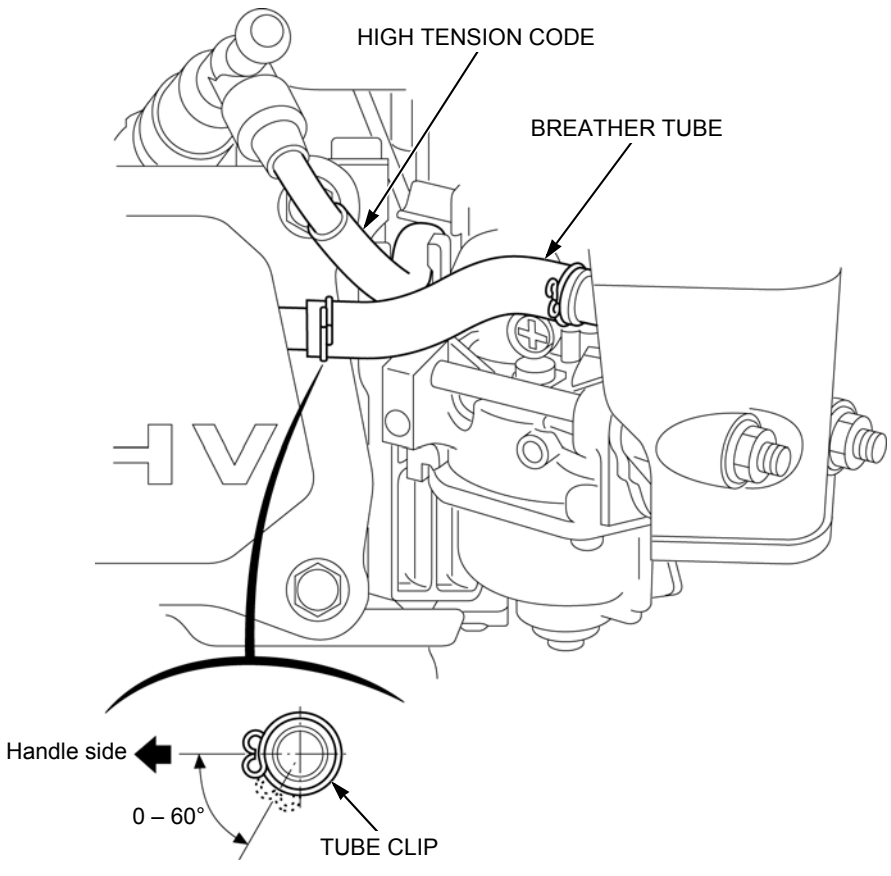
5.0 – 10 mm
(0.20 – 0.4 in)

NOTE 2:

10 – 15 mm
(0.4 – 0.6 in)

TUBE ROUTING





3. MAINTENANCE

MAINTENANCE SCHEDULE

ITEM		REGULAR SERVICE PERIOD (1) Perform at every indicated month or operating hour interval, whichever comes first.						Refer to page
		After storage	Each use	First month or 20 hrs.	Every 3 months or 50 hrs.	Every 6 months or 100 hrs.	Every year or 300 hrs.	
Engine oil	Check-Level		○					3-3
	Change	○		○		○		3-4
Air cleaner	Check		○					3-5
	Clean				○ (2)			3-5
	Replace						○	3-5
Tiller outside	Check		○					–
Throttle lever function	Check		○					–
Bolts and nuts tightness	Check		○					3-6
Wiring and cables	Check		○					2-7
Engine operation	Check		○					–
Clutch lever function	Check		○					3-6
Transmission oil	Check-Level	○		○			○	3-6
Sediment cup	Clean					○		3-7
Grease application	Grease lubricate	○						3-7
Spark plug	Check-Adjust					○		3-8
	Replace						○	3-8
Throttle cable	Check-Adjust						○	3-9
Engine idle speed	Check-Adjust						○	3-9
Clutch cable	Check-Adjust			○		○		3-9
Belt tension	Check-Adjust			○ (3)		○ (3)		3-10
Valve clearance	Check-Adjust						○	3-12
Combustion chamber	Clean	After every 500 hrs.						3-14
Fuel tank and filter	Clean	○				○		3-14
Fuel tube	Check	Every 2 years (Replace if necessary)						3-15

(1) For commercial use, log hours of operation to determine proper maintenance intervals.

(2) Service every 10 operating hours or every day when used in dusty areas.

(3) Check that there are no cracks and abnormal wear in the belt, and replace it if necessary.

ENGINE OIL LEVEL CHECK

NOTICE

- *Check the engine oil level with the engine stopped.*

Place the tiller on a firm level surface with the rotor set on the ground so that the engine becomes level.

Remove the oil filler cap/dipstick [1] and wipe the dipstick clean.

Insert the oil filler cap/dipstick in the oil filler neck, but do not screw it in.
Remove the oil filler cap/dipstick and check the oil level.

If the oil level is near or below the lower level [2] on the dipstick, fill with the recommended engine oil to the upper level (top of the oil filler neck) [3].

RECOMMENDED ENGINE OIL:
SAE 10W-30
API service classification SE or higher

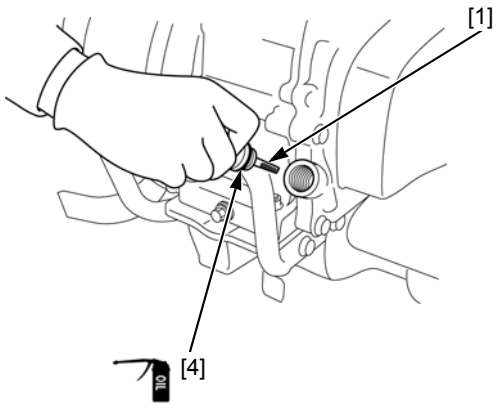
Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil.

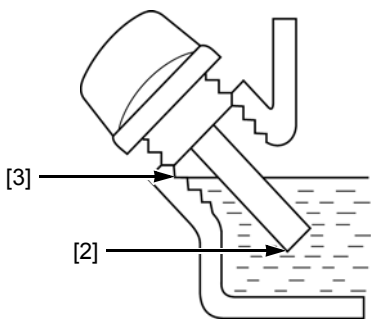
SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the recommended range.

Check that the O-ring [4] is in good condition, replace it if necessary.

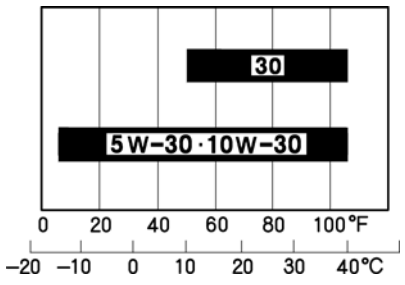
Apply engine oil to the O-ring whole surface.

Install the oil filler cap/dipstick securely.





SAE VISCOSITY GRADES

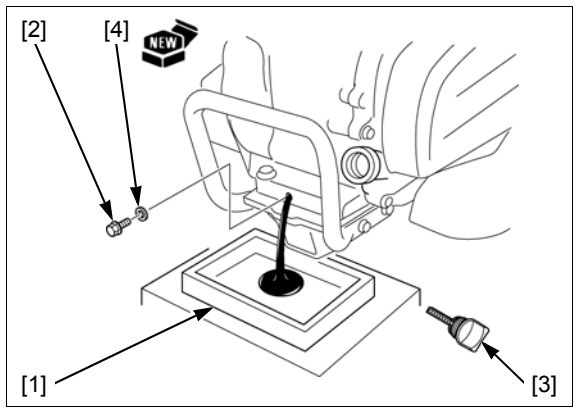


AMBIENT TEMPERATURE

ENGINE OIL CHANGE

NOTE:

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



DER, DE TYPE: Remove the front wheel (page 15-14).

Place the tiller on a firm level surface, and place a suitable container [1] under the engine oil drain bolt (10 x 15 mm) [2].

Remove the oil filler cap/dipstick [3], drain bolt and sealing washer (10 mm) [4] and drain the engine oil into the suitable container.

Please dispose of used engine 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 on the ground, or pour it 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.

Install the drain bolt and new sealing washer.
Tighten the drain bolt to the specified torque.

TORQUE: 18 N·m (1.8 kgf·m, 13 lbf·ft)

Fill the recommended engine oil (page 3-3).

ENGINE OIL CAPACITY:
0.58 liter (0.61 US qt, 0.51 Imp qt)

Install the oil filler cap/dipstick securely.

Recheck the engine oil level (page 3-3).

Make sure there are no engine oil leaks.

DER, DE TYPE: Install the front wheel (page 15-14).

AIR CLEANER CHECK/CLEANING/REPLACEMENT

NOTE:

- A dirty air cleaner element will restrict air flow to the carburetor, reducing engine performance. If the engine is operated in dusty areas, clean the air cleaner element more often than specified in the "MAINTENANCE SCHEDULE" (page 3-2).

NOTICE

- *Operating the engine without an air cleaner element or with a damaged air cleaner element, will allow dirt to enter the engine, causing rapid engine wear.*

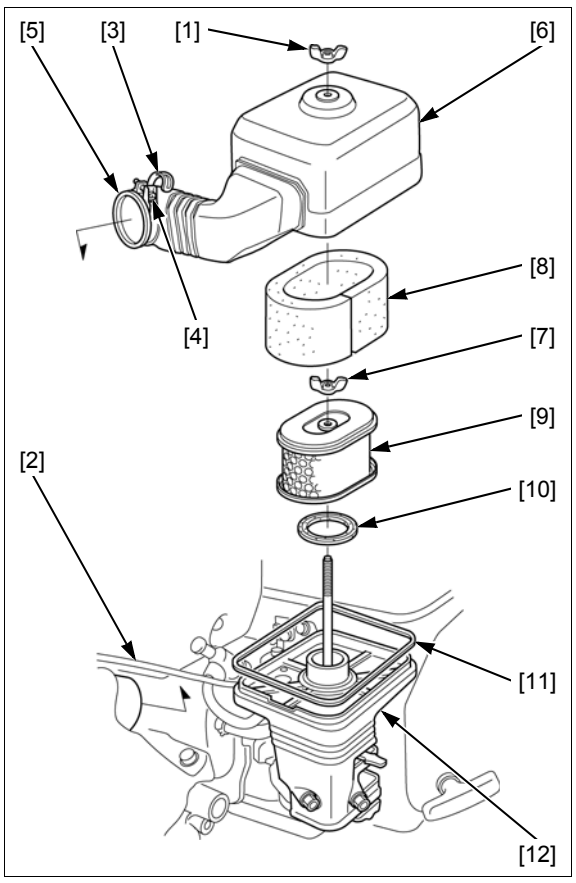
Remove the air cleaner cover nut [1].

Remove the throttle cable [2] from the hose band clamp [3].

Loosen the hose band screw (4 x 30 mm) [4] and disconnect the air cleaner hose [5] from the handle column, and then remove the air cleaner cover [6].

Remove the wing nut [7], foam element [8] and paper element [9].

Remove the elbow packing [10] and cover packing [11] from the air cleaner elbow [12].



Carefully check both elements for holes or tears and replace if damaged.

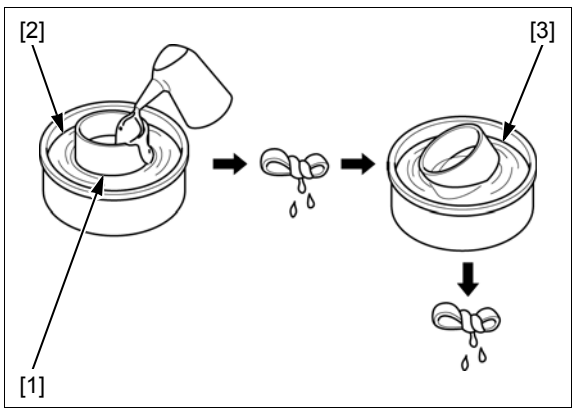
Check the air cleaner elbow packing and cover packing for deterioration or damage.

Wipe dirt from the inside of the air cleaner cover, air cleaner hose and air cleaner elbow with a moist rag.
Be careful to prevent dirt from entering the air cleaner elbow that leading to the carburetor.

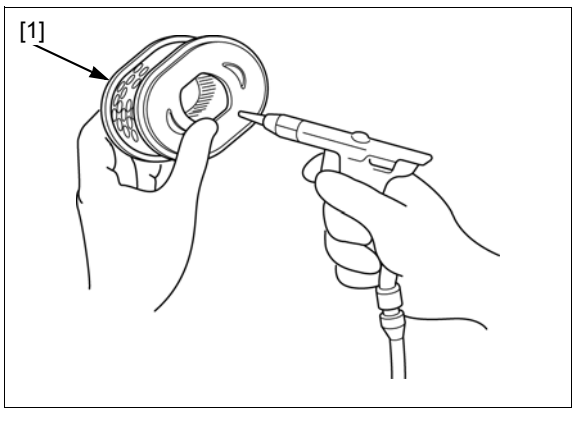
Clean the foam element [1] in warm soapy water, rinse and allow to dry thoroughly, or clean with a high flush point solvent [2] and allow to dry thoroughly.

Dip the form element in clean engine oil [3] and squeeze out all the excess oil.

Excess oil will restrict air flow through the form element and may cause the engine to smoke at startup.



Tap the paper element [1] several times on a hard surface to remove dirt, or blow compressed air (not exceeding 207 kPa, 2.1 kgf/cm^2, 30 psi) through the paper element from the inside.



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

Assemble the air cleaner in the reverse order of disassembly.

Tighten the hose band screw (4 x 30 mm) to the specified distance (page 5-4).

NOTE:

- After assembly, clamp the throttle cable with hose band clamp (page 5-4).

BOLTS AND NUTS TIGHTNESS

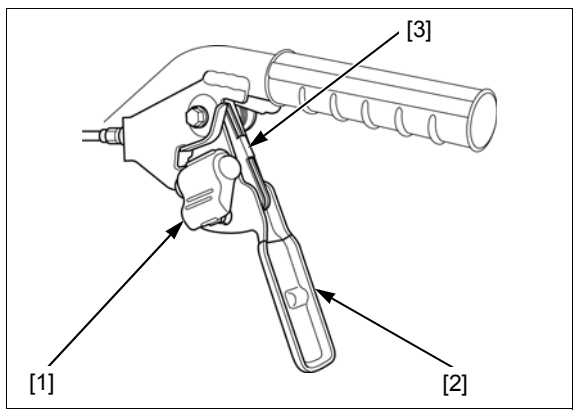
Check that all chassis nuts and bolts are tighten to their correct torque values (page 2-3).

Check that all split pins, safety clips, hose clamps and cable stays are in place and properly secured.

CLUTCH LEVER FUNCTION

NOTE:

- Do not apply any oil or lubricant to the operating area of the lock lever and clutch lever as they could attract dirt or deposits.



Check that the lock lever [1] and clutch lever [2] operate smoothly.
When operating the clutch lever without operating the lock lever, check that the tiller is not moving (Except in neutral position).

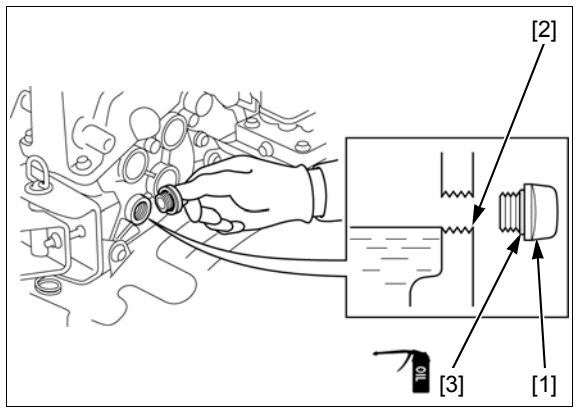
If moved, check for deposits between the lock lever and clutch lever or between the lock lever arm [3] and clutch lever.
Remove any deposits.

If necessary, remove the lock lever or lock lever arm (page 14-5) and clean them.

TRANSMISSION OIL LEVEL CHECK

NOTICE

- *Check the transmission oil level with the engine stopped.*



Place the tiller on a firm level surface with the rotor set on the ground so that the engine becomes level.

Remove the oil filler cap [1] and check the oil level is up to the lower edge [2] of the oil filler hole.

If the level is low, fill with the recommended transmission oil to the upper level (up to the lower edge of the oil filler hole).

RECOMMENDED TRANSMISSION OIL:
SAE 10W-30
API service classification SE or higher

Check that the O-ring [3] is in good condition, replace it if necessary.

Apply transmission oil to the O-ring whole surface.

Install the oil filler cap securely.

SEDIMENT CUP CLEANING

⚠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.

Turn the fuel valve lever [1] to the "DRAIN" position while pushing the stopper button [2] then drain the fuel into a suitable container.

Turn the fuel valve lever to the "OFF" position.

Remove the sediment cup [3] and O-ring [4].

NOTE:
- Be careful not to spill the fuel from the sediment cup.

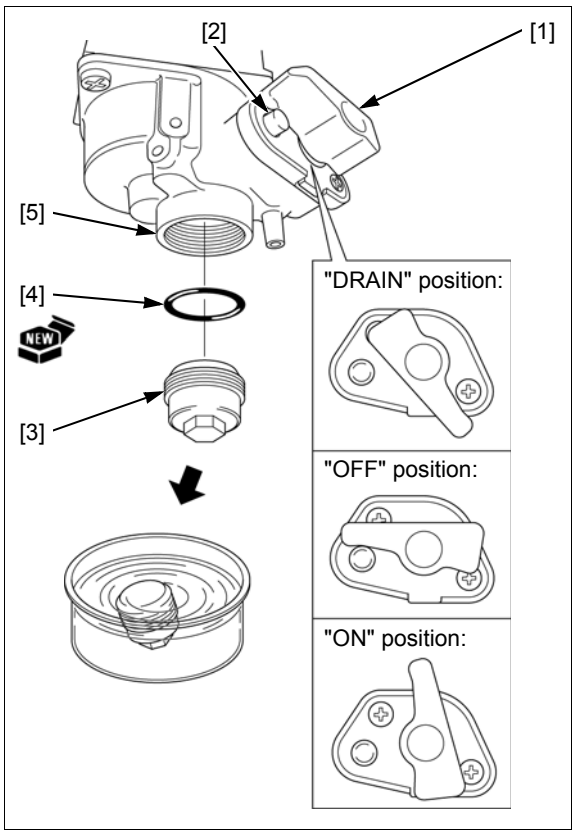
Wash the sediment cup in non-flammable solvent and dry it thoroughly.

Place a new O-ring in the float chamber [5] and install the sediment cup.

Tighten the sediment cup to the specified torque.

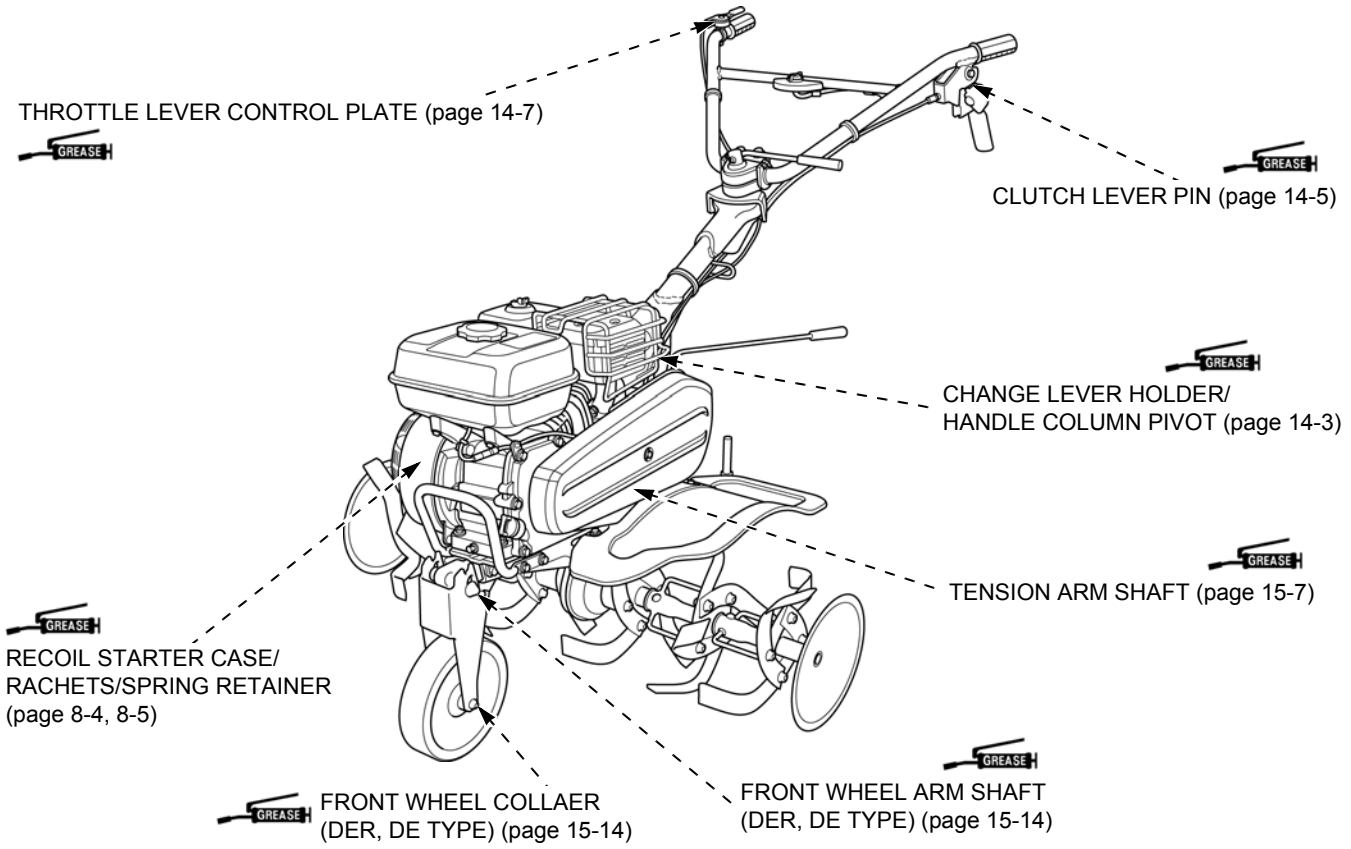
TORQUE: 4.5 N·m (0.5 kgf·m, 3.3 lbf·ft)

Turn the fuel valve lever to the "ON" position and check for fuel leaks.



GREASE APPLICATION

Apply grease to the following parts:



SPARK PLUG CHECK/ADJUSTMENT/REPLACEMENT

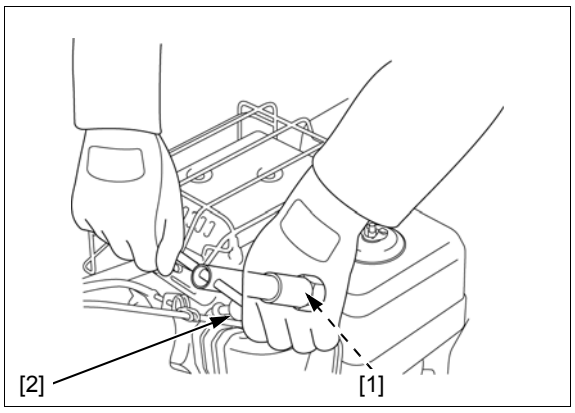
⚠CAUTION

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

Clean any dirt from around the spark plug [1].

Disconnect the spark plug cap [2].

Remove the spark plug with a spark plug wrench.



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], center electrode [3] and side electrode [4] for damage.

NOTICE

- *An incorrect spark plug can cause engine damage. Use the recommended spark plug or an exact equivalent.*
- *Replace the spark plug if the sealing washer is damaged.*

RECOMMENDED SPARK PLUG:
BPR5ES (NGK), W16EPR-U (DENSO)

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

SPARK PLUG GAP: 0.70 – 0.80 mm (0.028 – 0.031 in)

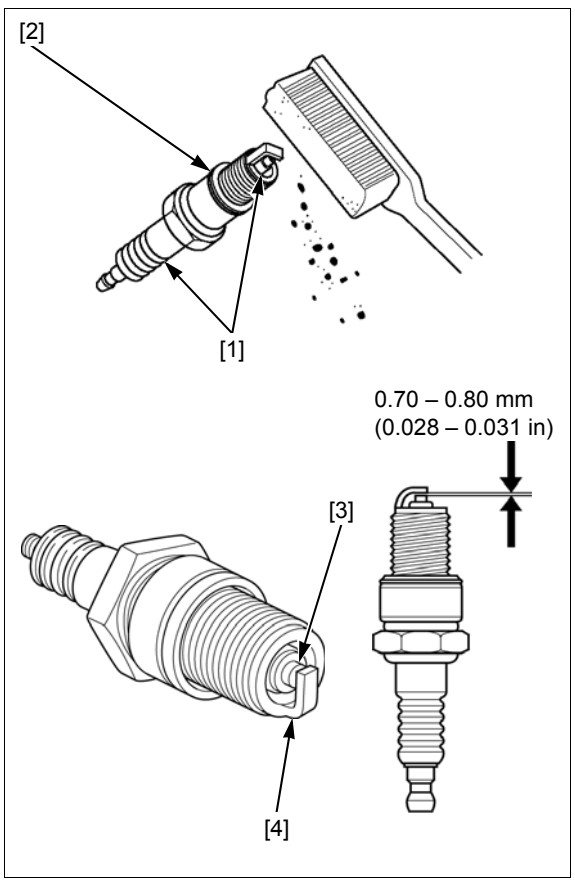
Install the spark plug finger tight to seat the washer, then tighten it to the specified torque.

TORQUE: 18 N·m (1.8 kgf·m, 13 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.*

Connect the spark plug cap.



THROTTLE CABLE CHECK/ADJUSTMENT

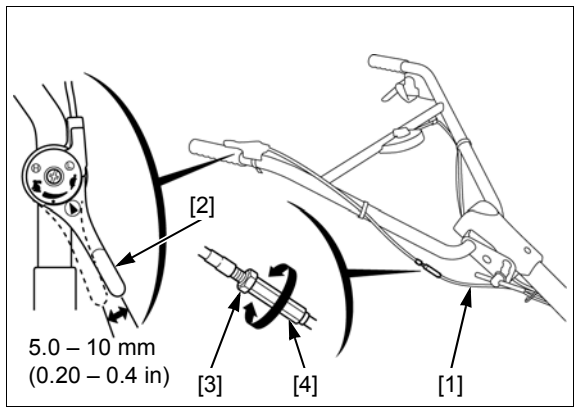
Check for any deterioration or damage to the throttle cable [1].
Check the throttle lever [2] for smooth operation.

Measure the throttle lever freeplay at the lever tip.

FREEPLAY:5.0 – 10 mm (0.20 – 0.4 in)

If the throttle lever freeplay is incorrect, loosen the lock nut [3] and turn the adjusting nut [4] in or out as required.

After adjustment, tighten the lock nut securely.



ENGINE IDLE SPEED CHECK/ADJUSTMENT

NOTE:

- Use a tachometer with graduations of 50 min^{-1} (rpm) or smaller that will accurately indicate a 50 min^{-1} (rpm) change.

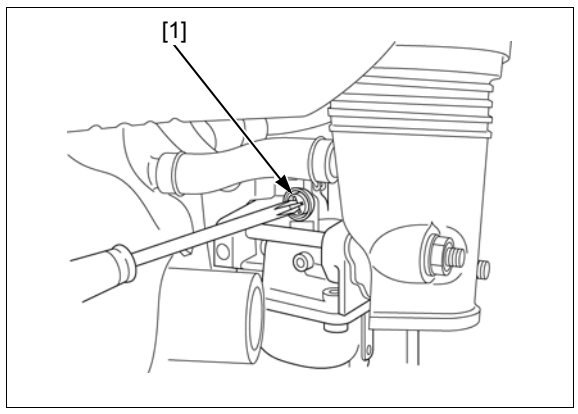
Warm up the engine.

Stop the engine and connect a tachometer according to manufacture's operating instruction.

Start the engine and check the idle speed.

IDLE SPEED: 1,250 – 1,550 min^{-1} (rpm)

If the idle speed is out of the specification, turn the throttle stop screw [1] to obtain the specified standard idle speed.



CLUTCH CABLE CHECK/ADJUSTMENT

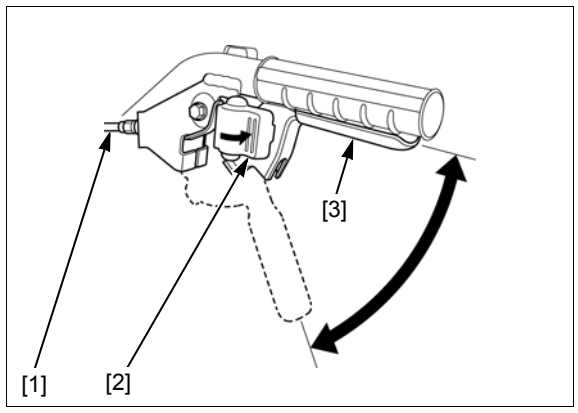
CHECK

Check for any deterioration or damage to the clutch cable [1].

Push the lock lever [2] and squeeze the clutch lever [3] several times.

If there is a problem, adjust the clutch cable (page 3-10).

If there is a problem yet, disassemble the clutch lever and clean the parts (page 14-5).

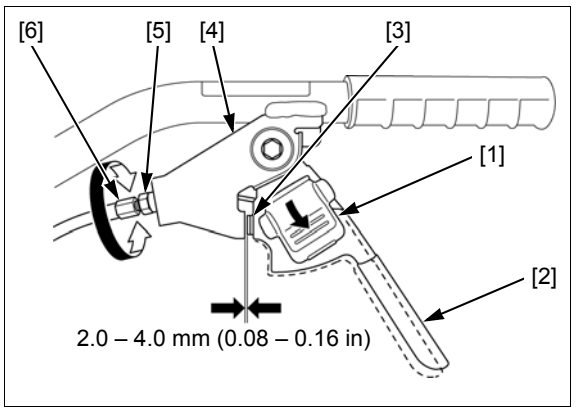


ADJUSTMENT

Push the lock lever [1] and measure the clutch lever [2] freeplay at the lock lever arm [3] and handlebar bracket [4].

FREEPLAY:2.0 – 4.0 mm (0.08 – 0.16 in)

If adjustment is necessary, loosen the lock nut [5] and turn the adjusting bolt [6] in or out as required.
After adjustment, tighten the lock nut.



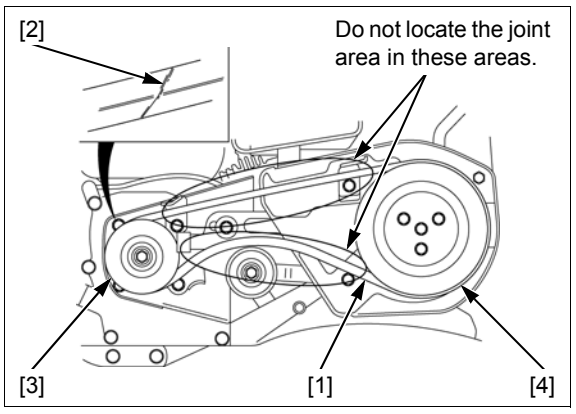
BELT TENSION CHECK/ADJUSTMENT

CHECK

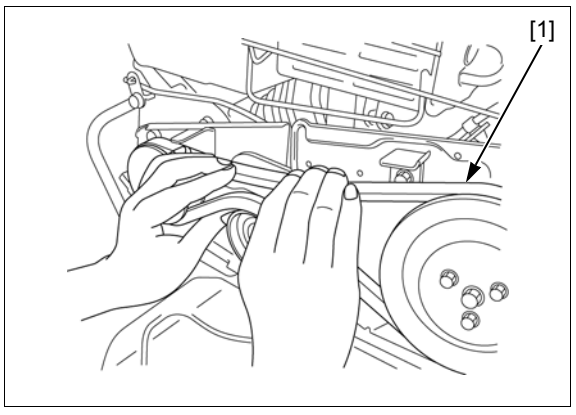
Remove the belt cover (page 11-2).

Check that there is no crack and abnormal wear-out in the belt, and replace if it is abnormal (page 11-2).

Set the V-belt [1] so that the V-belt joint area [2] is not located between the drive pulley [3] and driven pulley [4].



Squeeze the V-belt [1] with force more than six times as shown.

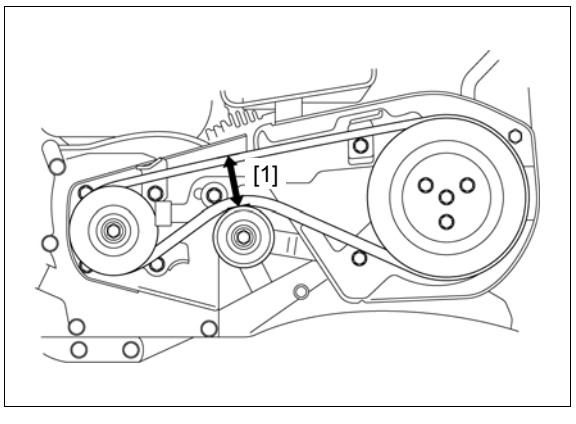


With the clutch engaged, measure the distance L [1] between the upper and lower belt runs at the belt tensioner.

SPECIFIED DISTANCE L: 43 – 49 mm (1.7 – 1.9 in)

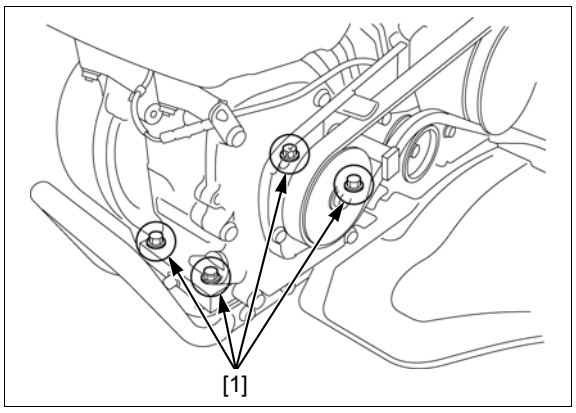
If the measured distance L is within specified distance L, adjust the belt stopper (page 3-12).

If the measured distance L is out of specified distance L, adjust the belt tension (page 3-11).



BELT TENSION ADJUSTMENT

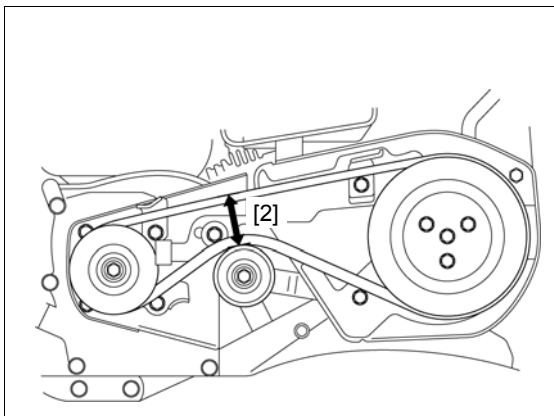
Loosen four engine mounting bolts (8 x 35 mm)/nuts (8 mm) [1].



See below for chart, adjust the distance ℓ [1] until the correct distance L [2] is obtained.

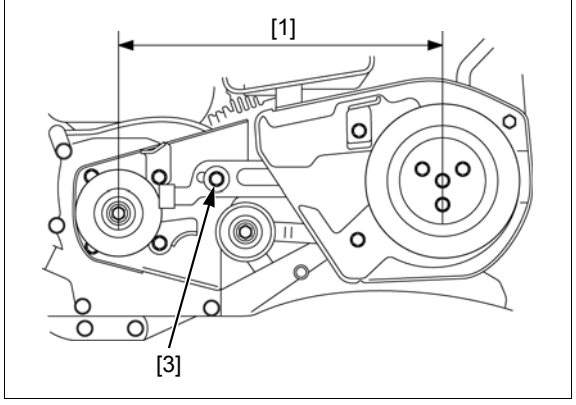
SPECIFIED DISTANCE L: 43 – 49 mm (1.7 – 1.9 in)

Distance L	Distance ℓ
–4.0 mm (0.16 in)	–2.0 mm (0.08 in)
–2.0 mm (0.08 in)	–1.0 mm (0.04 in)
+2.0 mm (0.08 in)	+1.0 mm (0.04 in)
+4.0 mm (0.16 in)	+2.0 mm (0.08 in)



Loosen the engine stay bolt (8 x 20 mm) [3] and adjust the distance ℓ by moving the engine back or forward.

After adjustment, tighten the engine stay bolt (8 x 20 mm) and four engine mounting bolts (8 x 35 mm)/nuts (8 mm) and recheck the distance L.



After adjusting the belt tension, check the drive pulley [1] and driven pulley [2] for proper alignment as shown.

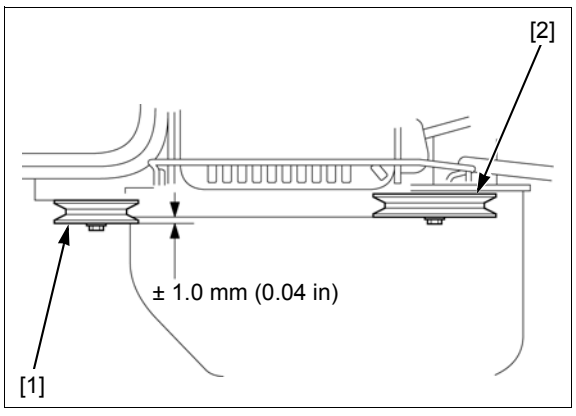
NOTICE

- *Incorrect V-belt adjustment can cause belt damage and/or abnormal noise from the belt or pulleys.*

If the pulleys are not aligned, check the pulley bolts for tightness and the pulleys for possible distortion.

Tighten the engine stay bolt and engine mounting bolts securely.

Adjust the belt stopper (page 3-12).



BELT STOPPER ADJUSTMENT

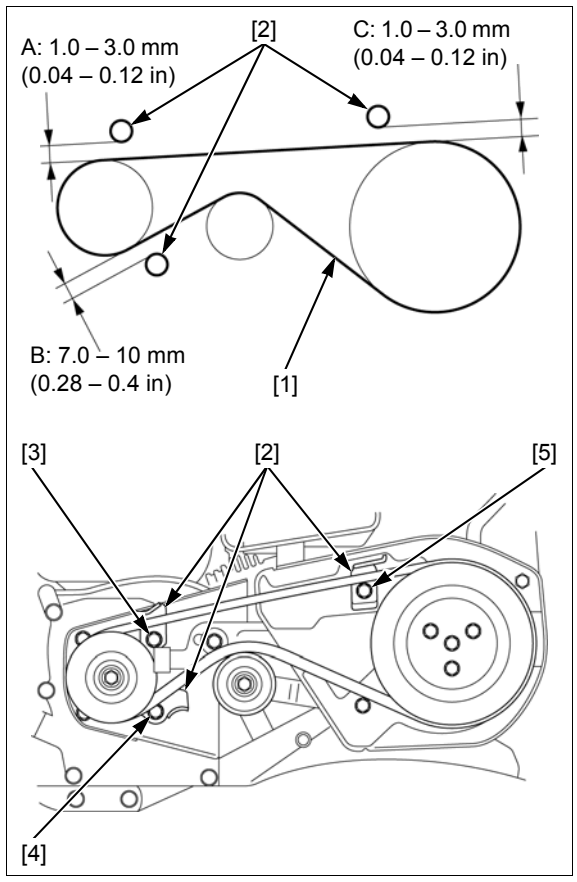
With the clutch engaged, measure the clearance between the V-belt [1] and three belt stoppers [2].

STANDARD CLEARANCE:
A: 1.0 – 3.0 mm (0.04 – 0.12 in)
B: 7.0 – 10 mm (0.28 – 0.4 in)
C: 1.0 – 3.0 mm (0.04 – 0.12 in)

To adjust the clearance, loosen the upper belt stopper bolt (8 x 16 mm) [3], lower belt stopper bolt (8 x 16 mm) [4], belt stopper C bolt (6 x 12 mm) [5] and move the stoppers up or down as necessary and tighten the stopper bolts securely.

After adjusting the clearance, start the engine and then disengage the clutch and make sure that the V-belt is not being pulled by the drive pulley.

After adjustment, adjust the clutch cable (page 3-9).



VALVE CLEARANCE CHECK/ADJUSTMENT

NOTICE

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

Remove the engine (page 10-2).

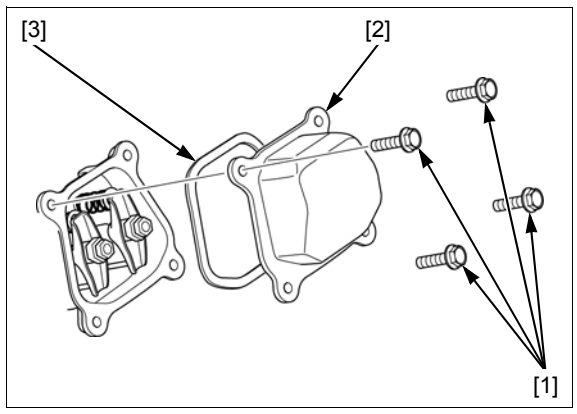
Remove the head cover bolts (6 x 12 mm) [1], cylinder head cover [2] and cylinder head cover gasket [3].

NOTE:

- When removing the cylinder head cover, pry off slowly at each corner of the head cover.

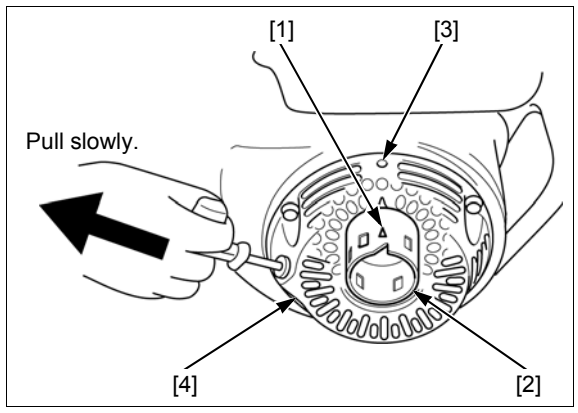
NOTICE

- *Using too much force can deform the cylinder head cover. The cylinder head cover must be replaced if it is deformed.*



Set the piston near top dead center of the cylinder compression stroke (both valves fully closed) by pulling the recoil starter slowly.
When the piston is near top dead center of the compression stroke, the "△" mark [1] on the starter pulley [2] will align with the top hole [3] on the recoil starter case [4].

If the exhaust valve is open, use the recoil starter to turn the crankshaft one additional turn and align the "△" mark on the starter pulley with the top hole on the recoil starter case again.



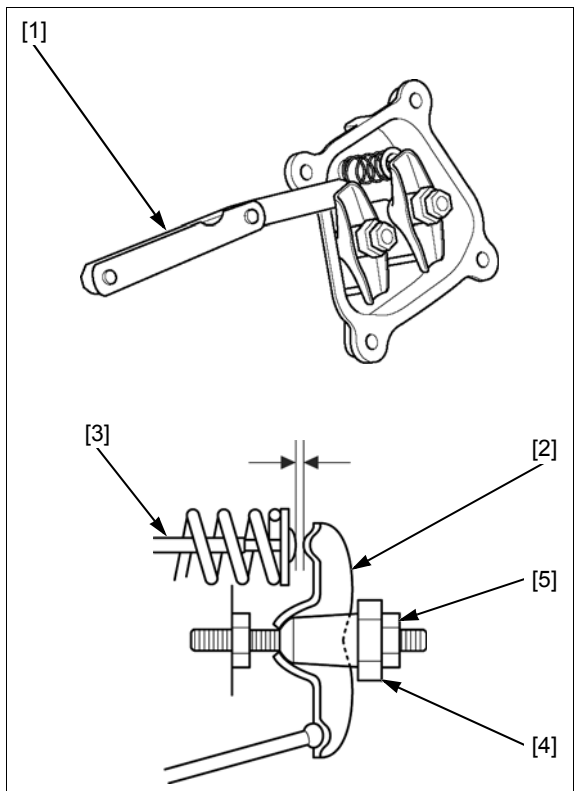
Insert a thickness gauge [1] between the rocker arm [2] and valve stem [3] to check the valve clearance.

VALVE CLEARANCE:
IN: 0.15 ± 0.02 mm (0.006 ± 0.001 in)
EX: 0.20 ± 0.02 mm (0.008 ± 0.001 in)

If adjustment is necessary, proceed as follows.

Hold the rocker arm pivot [4] and loosen the rocker arm pivot lock nut (6 mm) [5].

Adjust by turning the rocker arm pivot until there is a slight drag on the thickness gauge.



To increase valve clearance: screw out.
To decrease valve clearance: screw in.

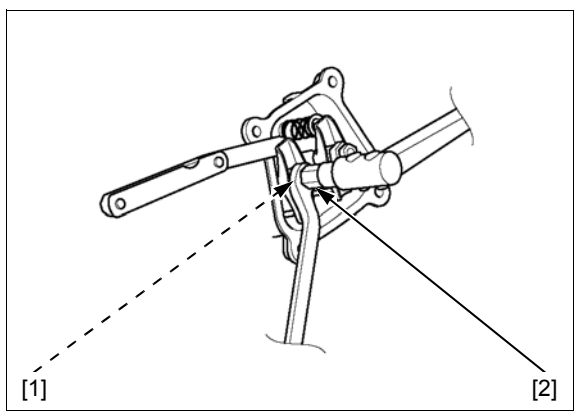
Hold the rocker arm pivot [1] and retighten the rocker arm pivot lock nut (6 mm) [2] to the specified torque.

TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)

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

Do not reuse the cylinder head cover gasket.

Installation is in the reverse order of removal.

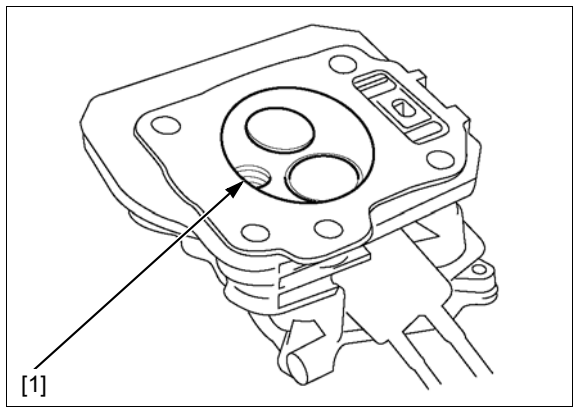


COMBUSTION CHAMBER CLEANING

Remove the cylinder head (page 12-3).

Clean any carbon deposits from the combustion chamber [1].

Install the cylinder head (page 12-3).



FUEL TANK AND FILTER CLEANING

⚠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 fuel tank (page 5-3).

Remove the two tube clips (8 mm) [1] and disconnect the fuel tube [2].

Remove the fuel filter joint [3].

Remove the O-ring [4] from the fuel filter joint.

Wash the fuel filter joint in nonflammable or high flash point solvent.

Inspect the fuel filter screen to be sure it is undamaged.

Clean the fuel tank [5] with nonflammable or high flash point solvent and allow to dry thoroughly.

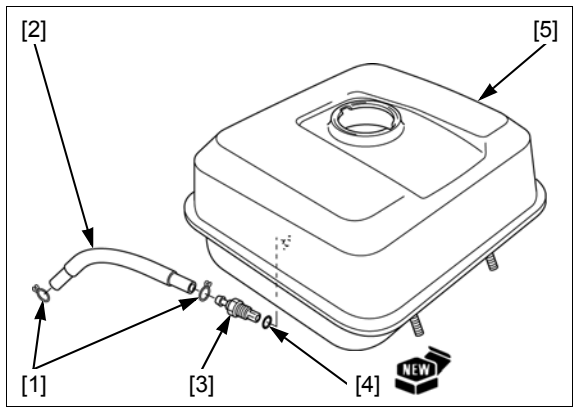
Check to be sure new O-ring is in place, and install the fuel filter joint.

Tighten the fuel filter joint to the specified torque.

TORQUE: 2 N·m (0.2 kgf·m, 1.5 lbf·ft)

Install the fuel tank (page 5-3).

Make sure there are no fuel leaks.



FUEL TUBE 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.

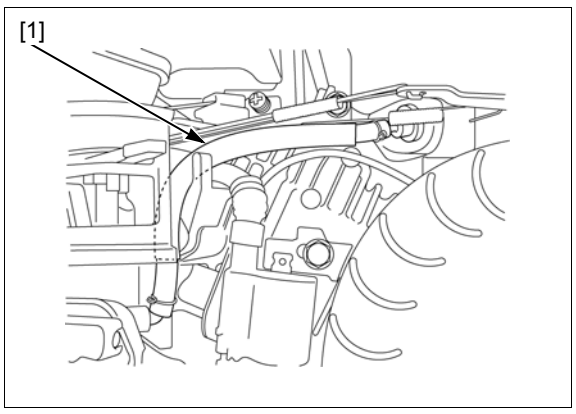
Remove the fan cover (page 7-3).

Check the fuel tube [1] for damage, fuel leakage, corrosion, and other abnormalities.

Check that the fuel tube is not interfering with the neighboring parts.

Replace the fuel tube if there is damage, fuel leakage or, corrosion (page 5-3).

Install the fan cover (page 7-3).



MEMO

4. TROUBLESHOOTING

BEFORE TROUBLESHOOTING

- Check that the engine stop switch wire connector and ignition coil wire connector are connected securely.
- Check for sufficient fresh fuel in the fuel tank.

GENERAL SYMPTOMS AND POSSIBLE CAUSES

HARD STARTING
- Fuel tube or filter restricted
  – Clean (page 3-14)
- Carburetor out of adjustment
  – Adjust (page 3-9)
  – Disassemble and inspect (page 5-6)
- Ignition coil air gap misadjusted
  – Adjust (page 7-6)
- Ignition coil faulty
  – Inspect (page 7-6)
- Spark plug faulty
  – Inspect (page 3-8)
- Governor misadjusted
  – Adjust (page 6-3)
- Valve clearance incorrect
  – Adjust (page 3-12)

ENGINE LACKS POWER
- Spark plug faulty
  – Inspect (page 3-8)
- Governor misadjusted
  – Adjust (page 6-3)
- Valve clearance incorrect
  – Adjust (page 3-12)
- Valve seat worn or damaged
  – Inspect and correct (page 12-10)
- Cylinder, piston or piston rings worn
  – Disassemble and inspect (page 13-3)

ENGINE WILL NOT REV SUFFICIENTLY
- Carburetor out of adjustment
  – Disassemble and inspect (page 5-6)

POOR PERFORMANCE AT LOW SPEED
- Carburetor out of adjustment
  – Disassemble and inspect (page 5-6)
- Governor misadjusted
  – Adjust (page 6-3)
- Valve clearance incorrect
  – Adjust (page 3-12)

POOR PERFORMANCE AT HIGH SPEED
- Spark plug faulty
  – Inspect (page 3-8)
- Governor misadjusted
  – Adjust (page 6-3)

ENGINE TROUBLESHOOTING

HARD STARTING

1. Spark Plug Inspection

Inspect the spark plug (page 3-8).

Is the spark plug in good condition?

YES – GO TO STEP 2.

NO –
- Faulty spark plug
- Incorrect spark plug gap
- Faulty carburetor float valve and/or float (If the spark plug is wet severely)
  – Inspection (page 5-6)
- Clogged fuel filter
  – Inspection (page 3-14)
- Clogged fuel tube
  – Inspection (page 3-14)
- Clogged carburetor port, nozzle
  – Inspection (page 5-6)

2. Ignition System Inspection

Check the ignition system (page 7-2).

Is the ignition system normal?

YES – GO TO STEP 3.

NO – Faulty ignition system

3. Cylinder Compression Inspection

Test the cylinder compression (page 12-5).

Is the compression normal?

NO –
- Carbon deposits in the combustion chamber
  – Cleaning (page 3-14)
- Valve clearance incorrect
  – Adjustment (page 3-12)
- Defective cylinder head gasket, valves, valve seats
  – Disassembly and inspection (page 12-3)
- Loosen cylinder head bolts
  – Retightening (page 12-3)
- Worn cylinder, piston, piston rings
  – Disassembly and inspection (page 13-3)
- Worn valves
  – Inspection (page 12-5)

FRAME TROUBLESHOOTING

CLUTCH CAN NOT BE DISENGAGED
- Clutch cable misadjusted
  – Adjust (page 3-10)
- Tension arm return spring defective
  – Replace (page 15-7)
- V-belt misadjusted
  – Adjust (page 3-10)
- Tension arm binding on tension arm shaft
  – Clean and lubricate (page 15-7)

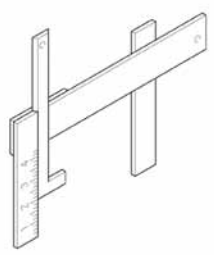
CLUTCH CAN NOT BE ENGAGED
- Clutch cable misadjusted
  – Adjust (page 3-10)
- V-belt misadjusted
  – Adjust (page 3-10)
- Tension arm binding on tension arm shaft
  – Clean and lubricate (page 15-7)

MEMO

5. FUEL SYSTEM

TOOL

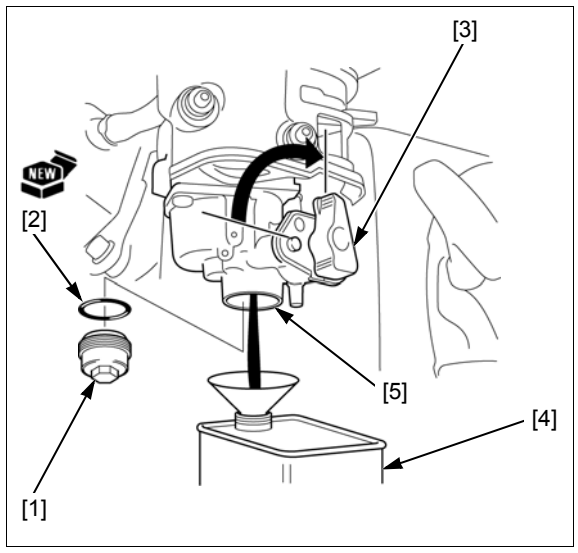
Float level gauge
07401-0010000



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 sediment cup [1] and O-ring [2].

Turn the fuel valve lever [3] to the "ON" position and drain the fuel into the suitable container [4].

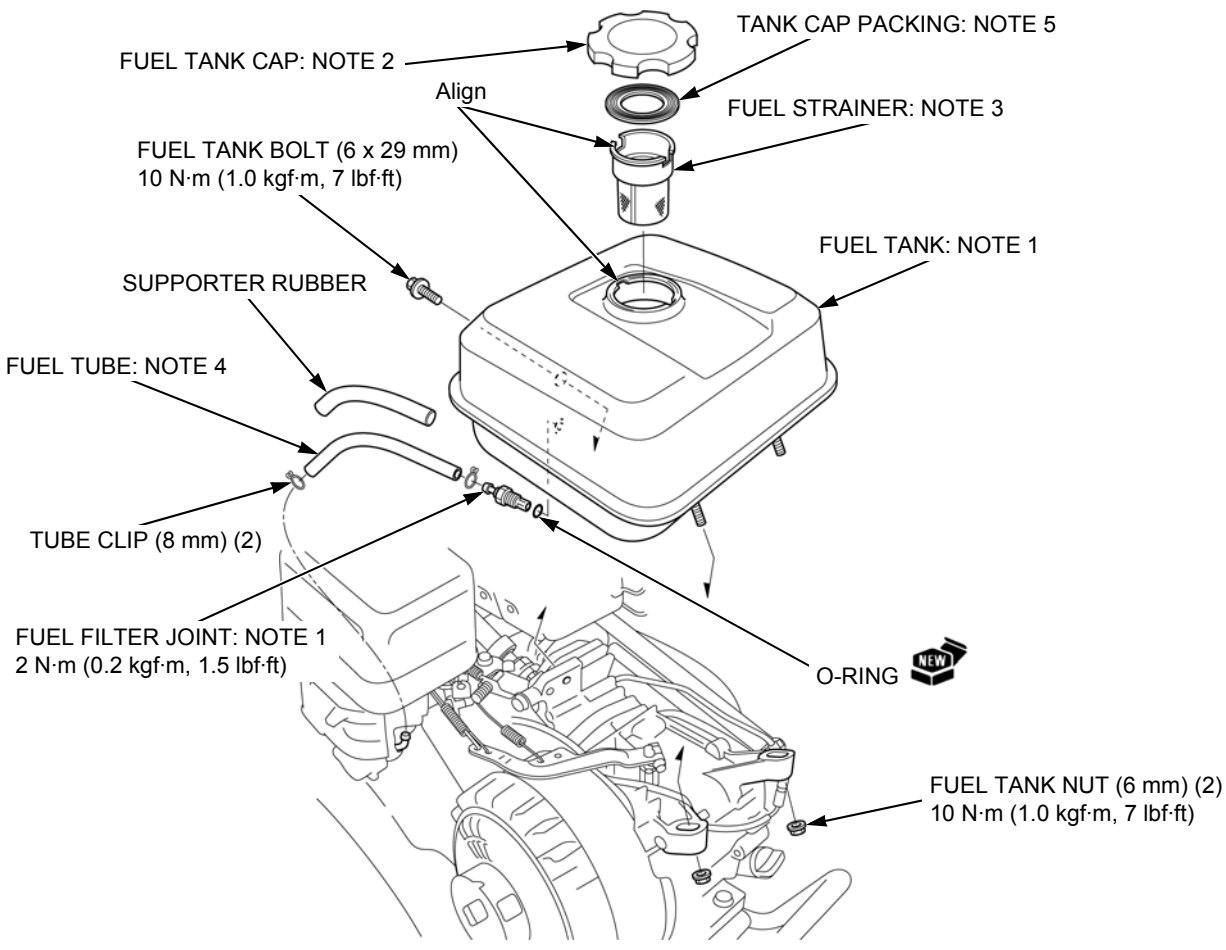
Turn the fuel valve lever to the "OFF" position.

Place a new O-ring in the float chamber [5] and install the sediment cup.
Tighten the sediment cup to the specified torque.

TORQUE: 4.5 N·m (0.5 kgf·m, 3.3 lbf·ft)

Remove the fan cover (page 7-3).

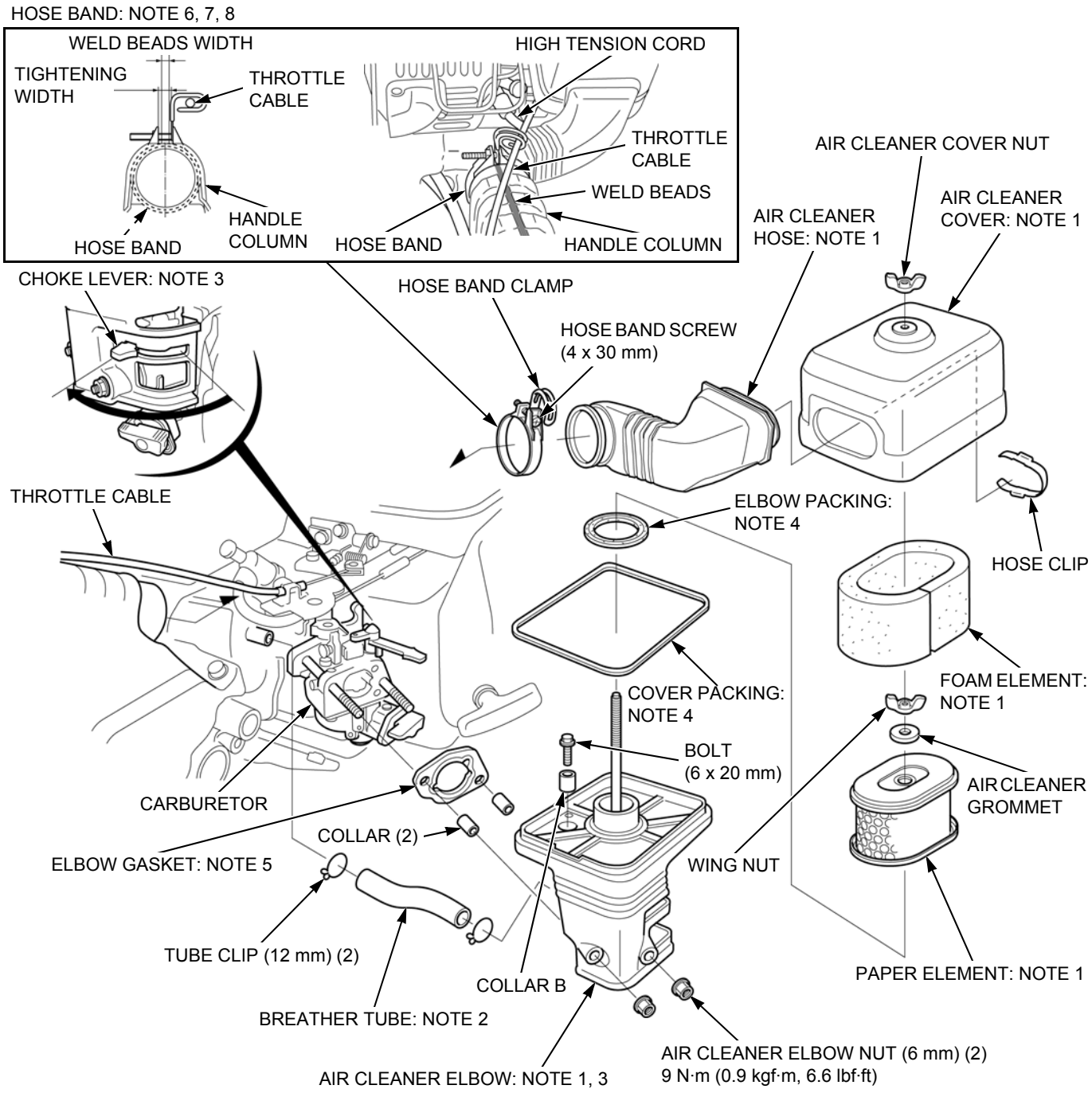
NOTE:
- After installation, route the fuel tube to the carburetor insulator properly (page 2-8).



NOTE 1	FUEL TANK AND FILTER CLEANING	page 3-14
NOTE 2	When reassembly, make sure that air vent hole is clean and unclogged. Blow with compressed air if necessary.	–
NOTE 3	When reassembly, make sure that the strainer is clean and undamaged.	–
NOTE 4	Check for crack or deterioration before installation and replace if necessary.	–
NOTE 5	Check the tank cap packing for wear or damage. Replace it if necessary.	–

AIR CLEANER REMOVAL/INSTALLATION

NOTE:
- When installation, route the breather tube properly (page 2-8).



NOTE 1	AIR CLEANER CHECK/CLEANING	page 3-5
NOTE 2	Before installation, check for cracks or deterioration.	–
NOTE 3	Remove and install with the choke lever in the ON position as shown.	–
NOTE 4	Before installation, check for deterioration or damage.	–
NOTE 5	Note the installation direction.	–
NOTE 6	Install the hose band with extended line of handle column weld beads.	–
NOTE 7	After installation, clamp the throttle cable with hose band clamp securely.	–
NOTE 8	Make sure the throttle cable do not interfere with the high tension cord.	–

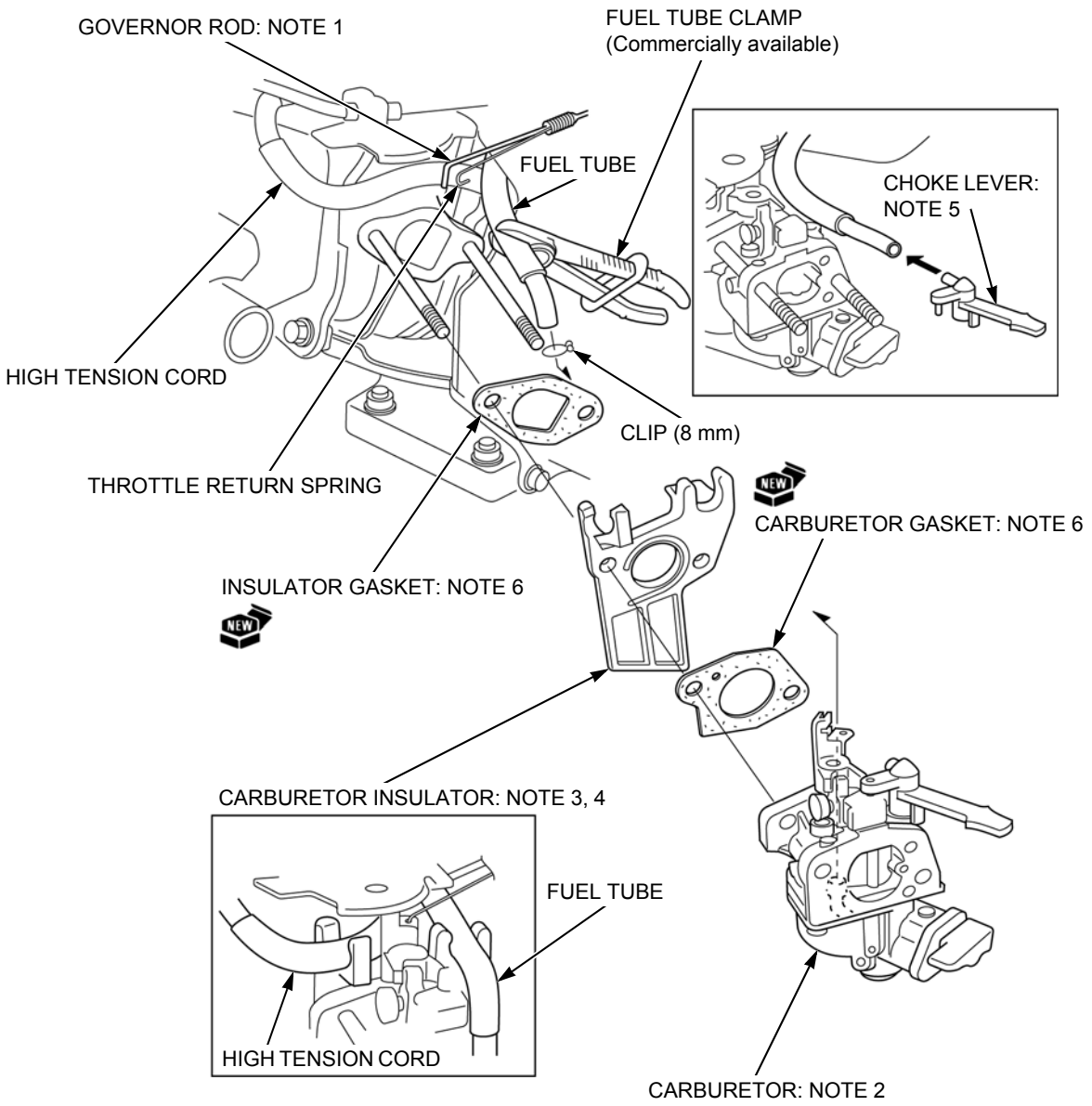
CARBURETOR REMOVAL/INSTALLATION

⚠ 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.

Turn the fuel valve to the "OFF" position, and then disconnect the fuel tube from the carburetor.

Remove the air cleaner (page 5-4).

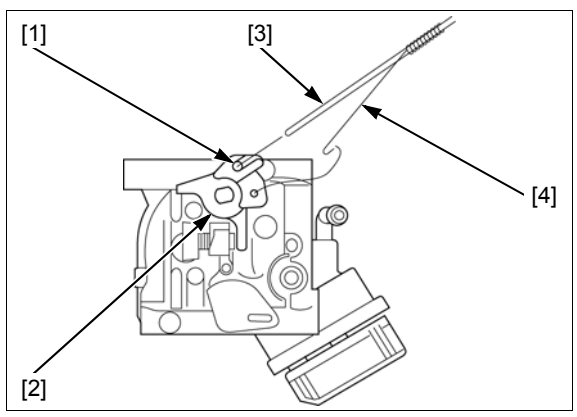


NOTE 1	GOVERNOR ROD REMOVAL/INSTALLATION	page 5-6
NOTE 2	CARBURETOR DISASSEMBLY/ASSEMBLY	page 5-6
NOTE 3	Before installation, blow out of the passages with compressed air.	–
NOTE 4	After installation, connect the high tension cord and fuel tube securely.	–
NOTE 5	The short peg on the choke lever can be used to plug the end of the fuel tube.	–
NOTE 6	Note the installation direction.	–

GOVERNOR ROD REMOVAL/INSTALLATION

Pull the carburetor toward a point where the groove [1] in the throttle arm [2] lines up with the governor rod [3], and lift the rod out of its hole and unhook the throttle return spring [4].

Installation is in the reverse order of removal.



CARBURETOR DISASSEMBLY/ASSEMBLY

⚠WARNING

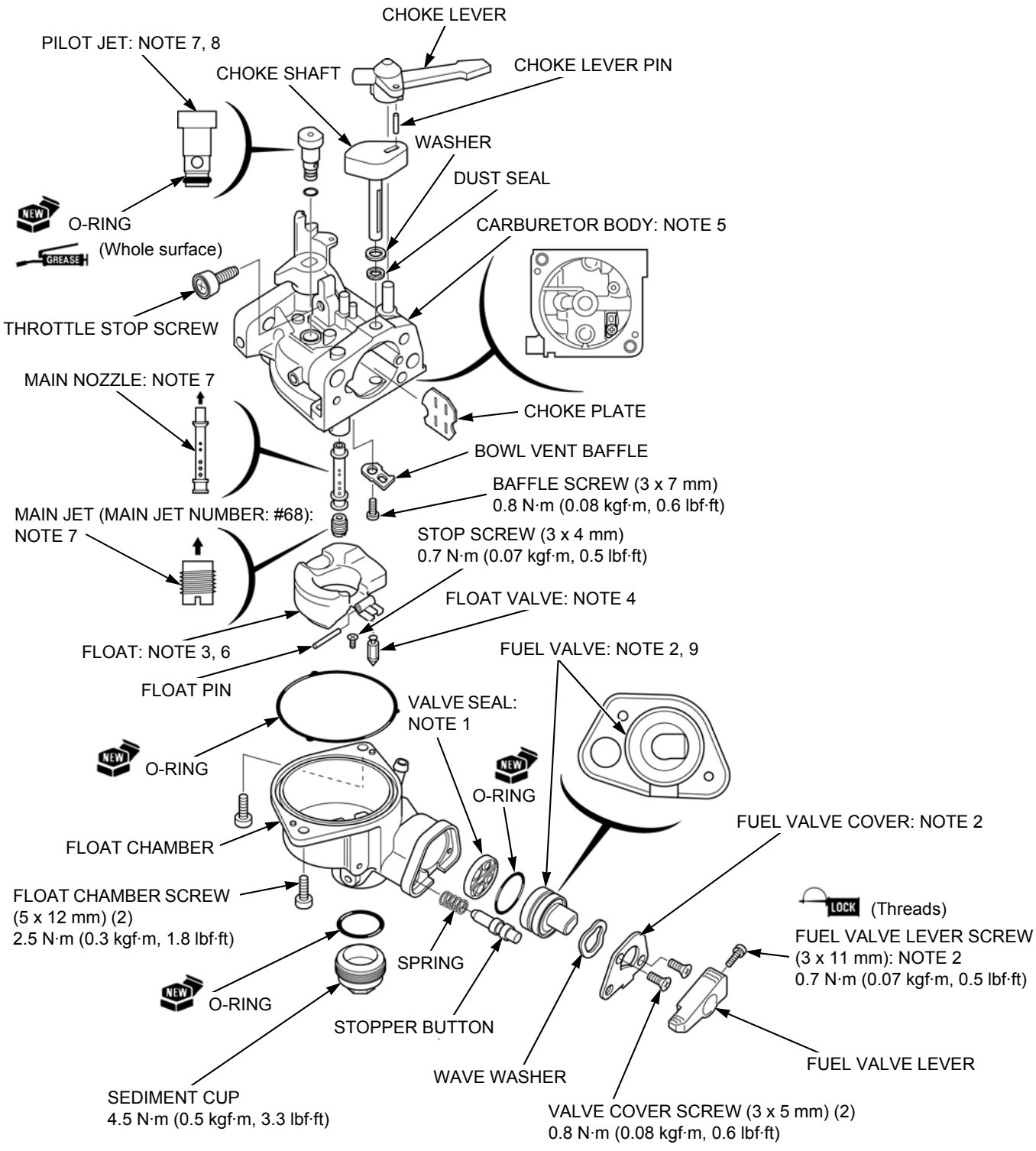
Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.
- Keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

⚠CAUTION

- To prevent serious eye injury, always wear safety goggles or other eye protection when using compressed air.
- Turn the fuel valve lever to the "DRAIN" position and drain the fuel before disassembling. Fuel vapor or spilled fuel may ignite.

NOTE:
- The pilot screw adjustment and removal can not be done.
- If clean the valve seal, replace it with a new one for molybdenum coating coming off.
- If remove the throttle stop screw, adjust the engine idle speed (page 3-9).

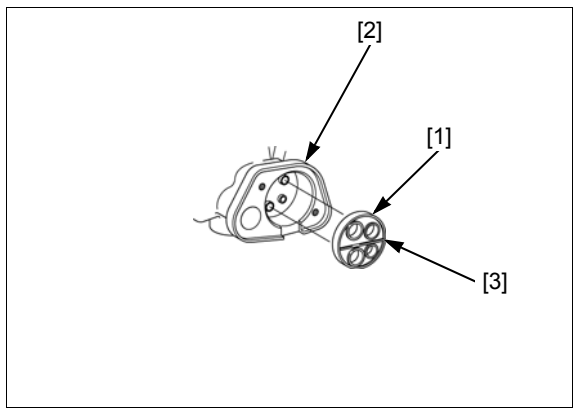
Remove the carburetor (page 5-5).



NOTE 1	VALVE SEAL INSTALLATION	page 5-8
NOTE 2	LUBRICATION	page 5-8
NOTE 3	FLOAT LEVEL HEIGHT INSPECTION	page 5-9
NOTE 4	FLOAT VALVE INSPECTION	page 5-9
NOTE 5	CARBURETOR BODY CLEANING	page 5-10
NOTE 6	After installation, check for smooth movement.	–
NOTE 7	Before installing, clean thoroughly with low pressure compressed air.	–
NOTE 8	When installation, lightly lubricate a new O-ring to ensure easy installation into the carburetor body.	–
NOTE 9	Install it in the direction as shown.	–

VALVE SEAL INSTALLATION

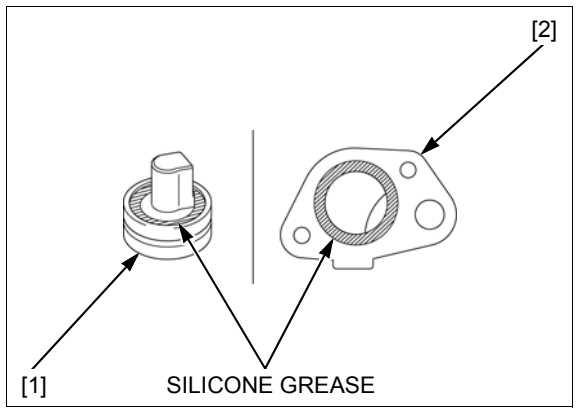
Install the valve seal [1] into the float chamber [2] with its rib [3] side facing out, while aligning the hole of the valve seal with boss of the float chamber.



LUBRICATION

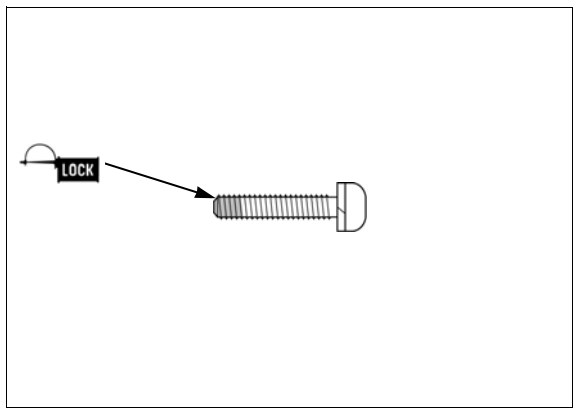
FUEL VALVE COVER/FUEL VALVE

When reassembly, apply silicone grease to the fuel valve [1] groove and fuel valve cover [2] sliding surface as shown.



FUEL VALVE LEVER SCREW (3 x 11 mm)

When reassembly, apply LOCTITE® 271 or equivalent to the threads as shown.



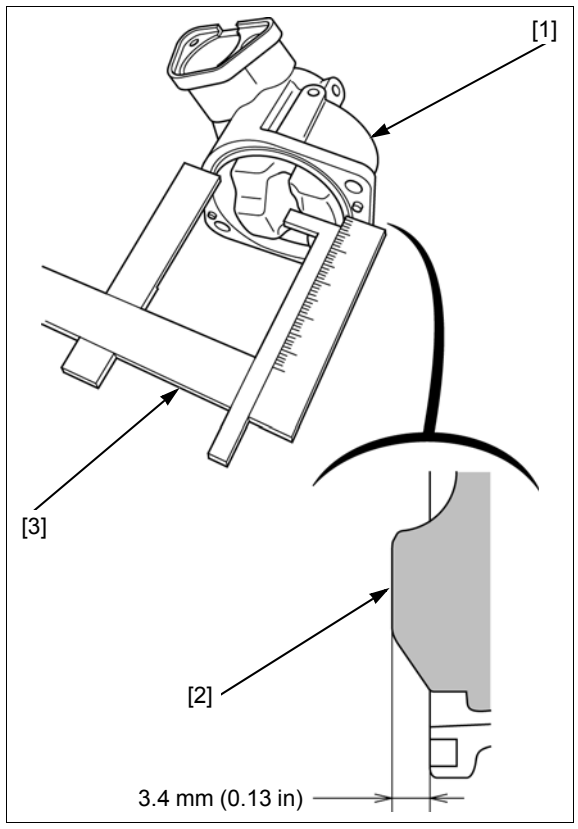
FLOAT LEVEL HEIGHT INSPECTION

Place the float chamber [1] in the position as shown, and measure the distance between the float top [2] and float chamber when the float just contacts the float valve without compressing the valve.

TOOL:
Float level gauge [3] 07401-0010000

STANDARD FLOAT LEVEL HEIGHT:
3.4 mm (0.13 in)

If the height is outside the specification, replace the float and the float valve and recheck the float level height.



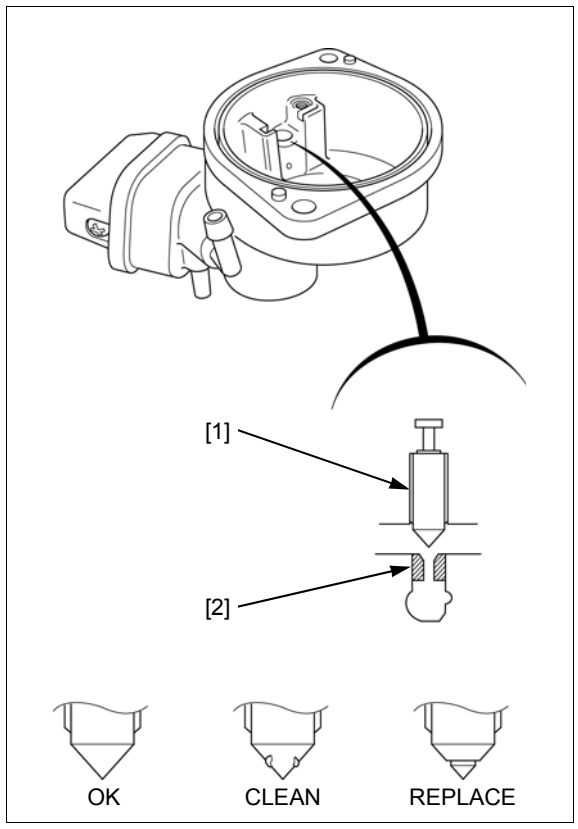
FLOAT VALVE INSPECTION

Check the tip of the float valve [1] where it contacts the valve seat [2] for stepped wear or contamination. Replace the valve if the tip is worn or contaminated.

Check the operation of the float valve.

Inspect the float valve seat for scores, scratches, clogging and damage.

If the seat is damaged, replace the float chamber.



CARBURETOR BODY CLEANING

⚠CAUTION

- To prevent serious eye injury, always wear safety goggles or other eye protection when using compressed air.
- Some commercially-available chemical cleaners are very caustic. These cleaners may damage plastic parts such as O-rings, float and float valve seats. Check the container for instructions.
  If you are in doubt, do not use these products to clean Honda carburetors.
- High air pressure may damage the carburetor. Use low pressure settings when cleaning passages and ports.

Clean the carburetor body [1] and float chamber [2] with solvent.

Use low air pressure and clean the following parts and passages:

ENGINE SIDE:

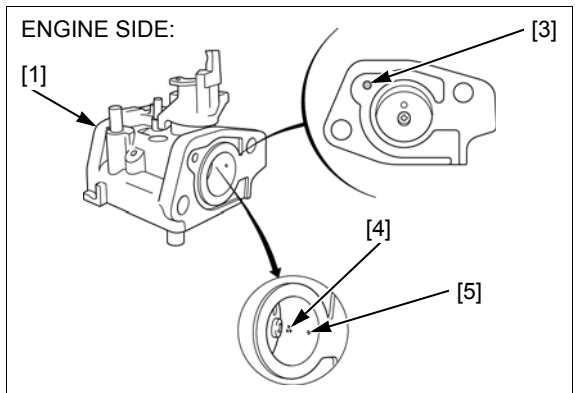
– External vent port [3]
– Transition ports [4]
– Pilot outlet [5]

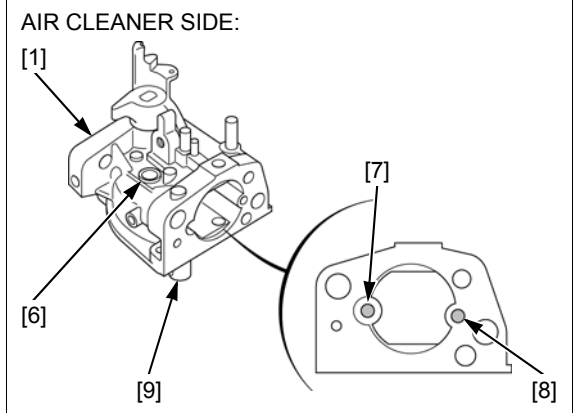
AIR CLEANER SIDE:

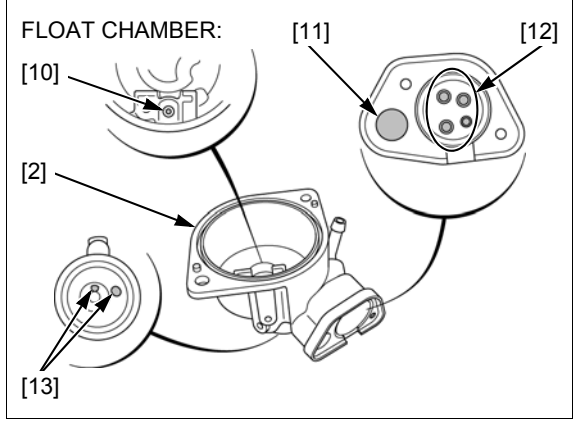
– Pilot jet hole [6]
– Pilot air jet [7]
– Main air jet [8]
– Main nozzle holder [9]

FLOAT CHAMBER:

– Float valve seat [10]
– Stopper button installation hole [11]
– Each valve hole [12]
– Float chamber holes [13]







6. GOVERNOR SYSTEM

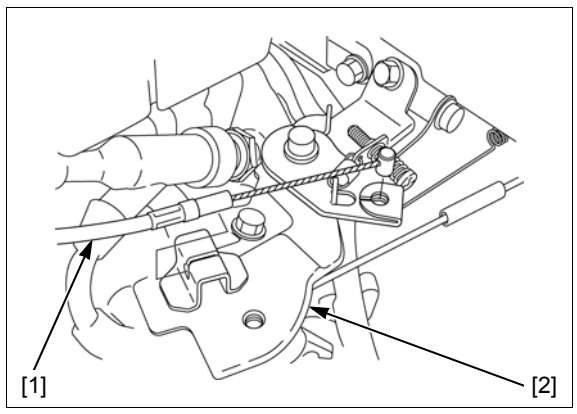
CONTROL BASE/GOVERNOR ARM REMOVAL/INSTALLATION

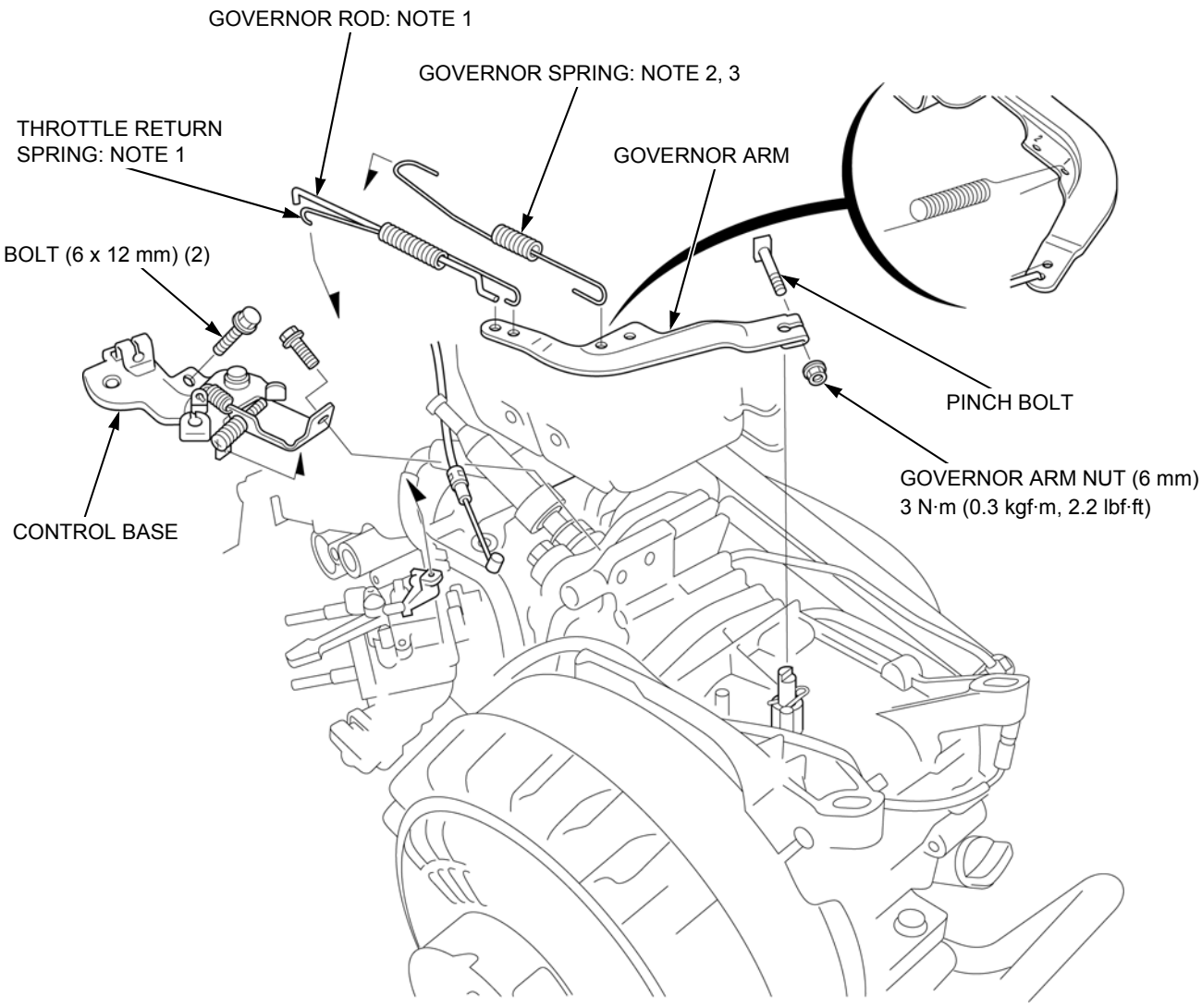
Remove the following:

– Fuel tank (page 5-3)
– Air cleaner (page 5-4)

Move the throttle lever to the "LOW" position and disconnect the throttle cable [1] from the control base [2].

After installation, perform the "GOVERNOR ADJUSTMENT" (page 6-3).





NOTE 1	GOVERNOR ROD REMOVAL/INSTALLATION	page 5-6
NOTE 2	When reassembly, install the spring with the long end side toward the control base.	–
NOTE 3	When installation, hook the governor spring on the hole marked "1".	–

GOVERNOR ADJUSTMENT

Remove the fuel tank (page 5-3).

Loosen the governor arm nut (6 mm) [1] and then move the governor arm [2] so that the throttle is completely open.

Rotate the governor arm shaft [3] as far as it will go in the direction that it was just turned by the governor arm.

Tighten the governor arm nut to the specified torque and then make sure that the clearance is normal as shown.

TORQUE: 3 N·m (0.3 kgf·m, 2.2 lbf·ft)

Install the fuel tank (page 5-3).

NOTE:

- Use a tachometer with graduations of 50 min^{-1} (rpm) or smaller that will accurately indicate a 50 min^{-1} (rpm) change.

Warm up the engine.

Stop the engine and connect a tachometer according to manufacture's operating instruction.

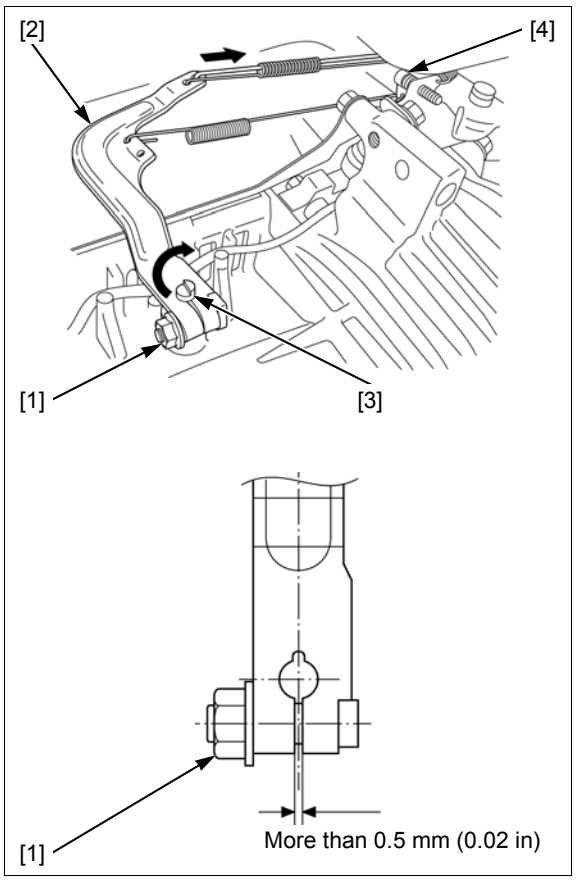
Start the engine and bring the engine to its standard speed with the throttle lever.

Adjust the throttle control screw [4] so that the throttle cannot be moved past this point.

MAXIMUM ENGINE SPEED (AT NO LOAD):

3,800 $^{0}_{-200}$ min^{-1} (rpm)

After adjustment, adjust the engine idle speed (page 3-9) and throttle cable (page 3-9).

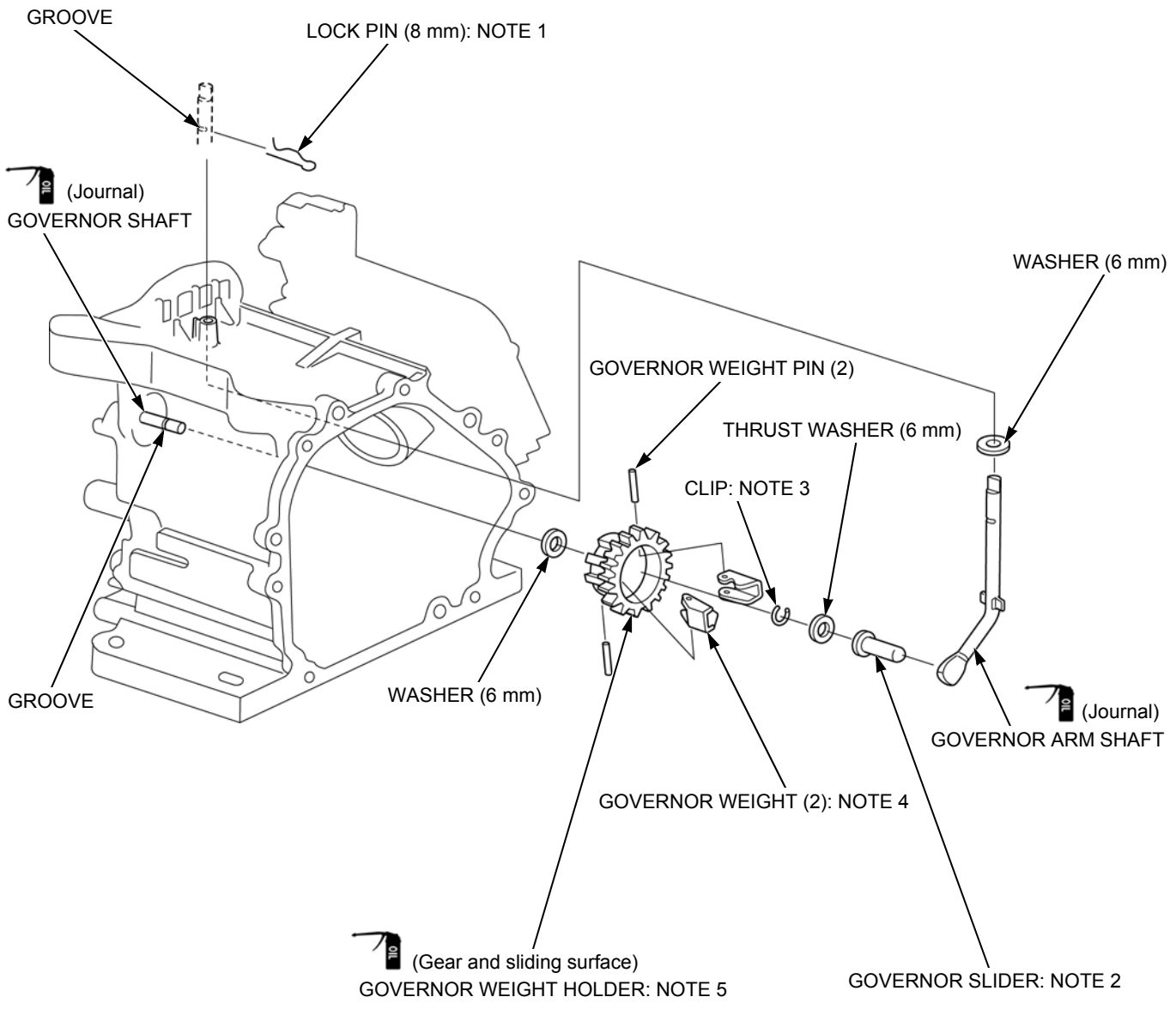


GOVERNOR REMOVAL/INSTALLATION

Remove the crankshaft (page 13-3).

NOTE:

- Be sure to install the governor before installing the crankshaft.



NOTE 1	• When reassembly, install the lock pin immediately after installing the governor arm shaft, and move the shaft over against the governor slider. • The lock pin (8 mm) must be installed with the straight side of the lock pin against the groove of the governor arm shaft.	–
NOTE 2	When reassembly, spread the governor weight to install the governor slider; then check to be sure slider moves smoothly.	–
NOTE 3	When reassembly, install firmly into the governor shaft groove.	–
NOTE 4	When reassembly, check that the weights move freely.	–
NOTE 5	Before installation, check for wear and damage of the gear.	–

7. IGNITION SYSTEM

BEFORE TROUBLESHOOTING

- Check that the engine stop switch wire connector and ignition coil wire connector are connected securely.
- Check that the engine stop switch is "ON" position.

IGNITION SYSTEM TROUBLESHOOTING

HARD STARTING

1. Spark Plug Inspection

Inspect the spark plug (page 3-8).

Is the spark plug normal?

YES – GO TO STEP 2.

NO – • Faulty spark plug
• Incorrect spark plug gap

2. Spark Test

Clean the spark plug and adjust the spark plug gap (page 3-8)
Perform the spark test (page 7-7).

Is there weak or no spark?

YES – GO TO STEP 3.

NO – • Faulty spark plug
• Incorrect spark plug gap

3. Spark Test

Perform the spark test again with a new spark plug (page 7-7).

Is there weak or no spark?

YES – GO TO STEP 4.

NO – Faulty spark plug

4. Spark Plug Cap Inspection

Inspect the spark plug cap (page 7-7).

Is the spark plug cap normal?

YES – GO TO STEP 5.

NO – Faulty spark plug cap

5. Engine stop switch Inspection

Inspect the engine stop switch (page 7-8).

Is the engine stop switch normal?

YES – GO TO STEP 6.

NO – Faulty engine stop switch

6. Ignition Coil Air Gap Inspection

Inspect the ignition coil air gap (page 7-6).

Is the ignition coil air gap normal?

YES – GO TO STEP 7.

NO – Ignition coil air gap misadjusted

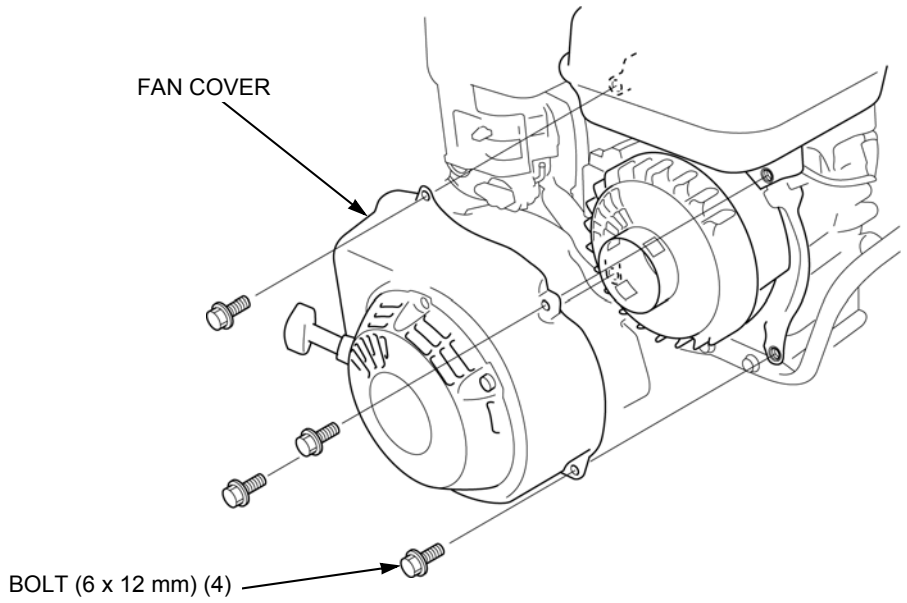
7. Ignition Coil Inspection

Inspect the ignition coil (page 7-6).

Is the ignition coil normal?

NO – Ignition coil defective

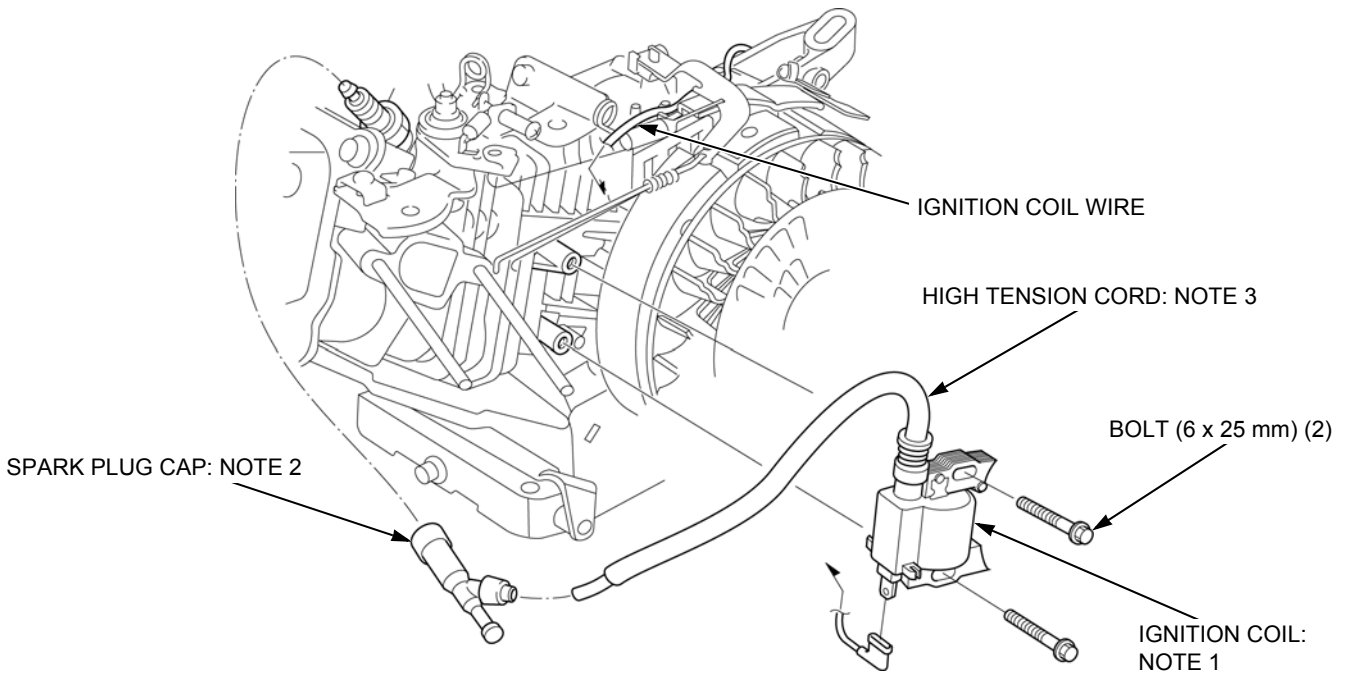
FAN COVER REMOVAL/INSTALLATION



IGNITION COIL REMOVAL/INSTALLATION

Remove the following:
– Fuel tank (page 5-3)
– Carburetor (page 5-5)

NOTE:
- After installation, route the high tension cord properly (page 2-8).
- After installation, perform the "IGNITION COIL AIR GAP CHECK/ADJUSTMENT" (page 7-6)



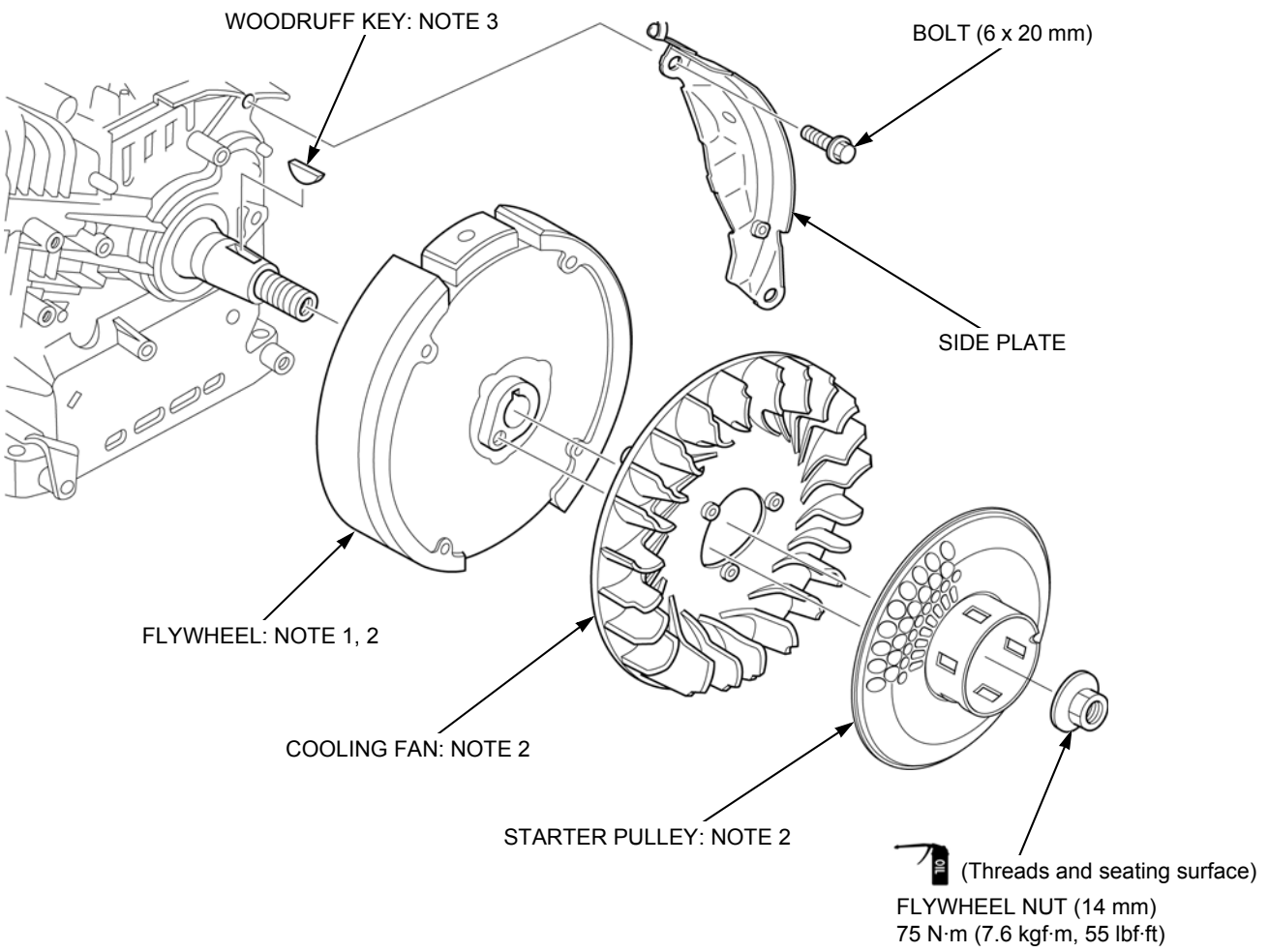
NOTE 1	IGNITION COIL INSPECTION	page 7-6
NOTE 2	SPARK PLUG CAP INSPECTION	page 7-7
NOTE 3	Check for cracked or damage insulation and replace the ignition coil if necessary.	–

FLYWHEEL REMOVAL/INSTALLATION

NOTICE

- *When disassembling and reassembling, take care not to damage the fan blade.*

Remove the ignition coil (page 7-3).



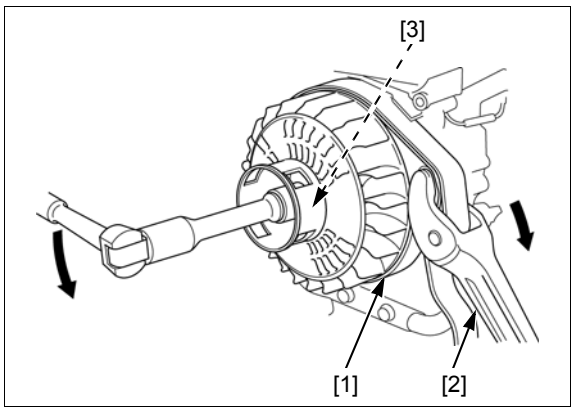
NOTE 1	FLYWHEEL REMOVAL	page 7-4
NOTE 2	FLYWHEEL INSTALLATION	page 7-5
NOTE 3	After installing the flywheel, check to be sure that the woodruff key is still in its slot on the crankshaft.	–

FLYWHEEL REMOVAL

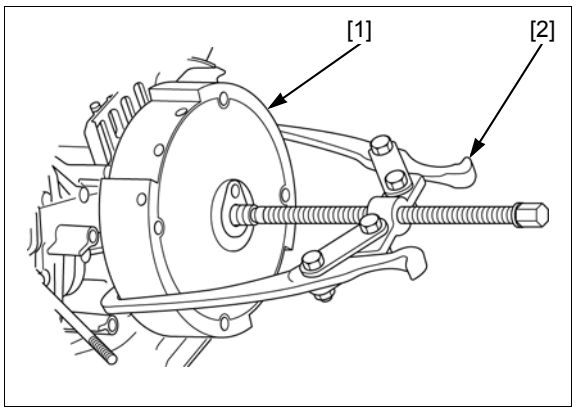
Hold the flywheel [1] with a commercially available strap wrench [2] and remove the flywheel nut (14 mm) [3].

NOTICE

- *Take care not to damage the cooling fan with the strap wrench.*



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



NOTICE

- *Do not hit the flywheel with a hammer.*
- *Avoid the magnet section when attaching the flywheel puller.*

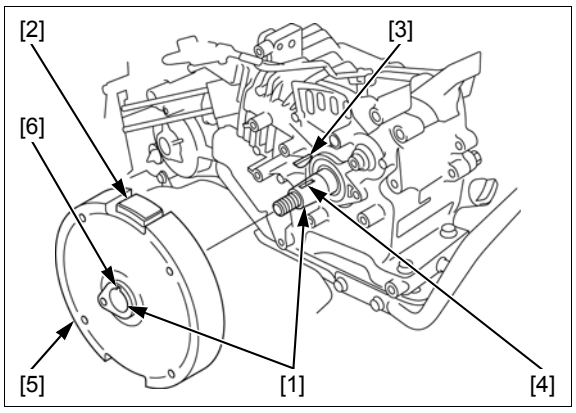
FLYWHEEL INSTALLATION

Clean the tapered parts [1] of dirt, oil, grease, and other foreign material before installation.

Be sure there are no metal parts or other foreign material on the magnet part [2] of the flywheel.

Set the woodruff key (25 x 18 mm) [3] in the key groove [4] of the crankshaft securely.

Install the flywheel [5] by aligning the key slot [6] with woodruff key on the crankshaft.

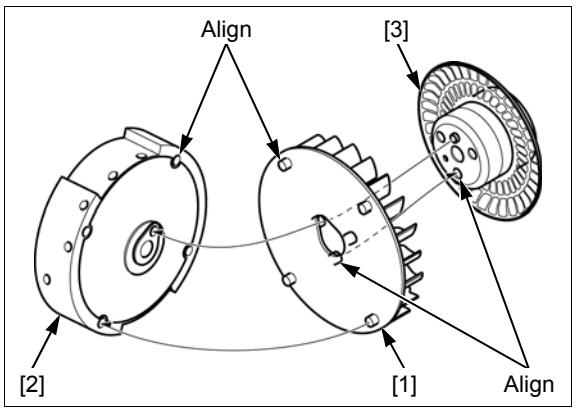


NOTICE

- *The flywheel may push the woodruff key (25 x 18 mm) out of its slot; check after installation.*

Attach the cooling fan [1] to the flywheel [2] by aligning the four projections of the cooling fan with the holes of the flywheel.

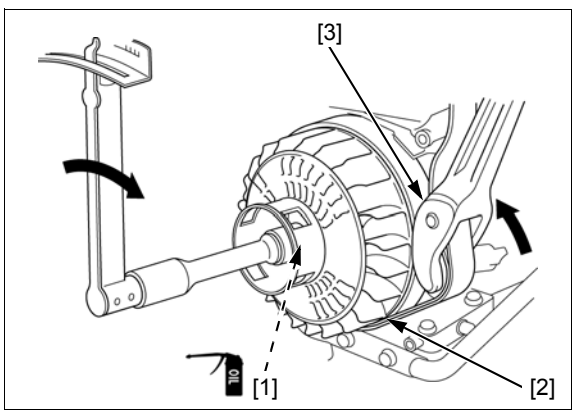
Attach the starter pulley [3] by aligning the hole of the pulley with the projection at the center of the cooling fan.



Apply engine oil to the threads and seating surface of the flywheel nut (14 mm) [1], and loosely tighten the nut.

Hold the flywheel [2] with a commercially available strap wrench [3], and tighten the nut (14 mm) to the specified torque.

TORQUE: 75 N·m (7.6 kgf·m, 55 lbf·ft)



IGNITION COIL AIR GAP CHECK/ADJUSTMENT

NOTICE

- *Avoid the magnet part of the flywheel when adjusting.*
- *Adjust the ignition coil air gap equally on both side.*

Remove the fan cover (page 7-3)

Measure the ignition coil air gap clearance.

IGNITION COIL AIR GAP:
0.20 – 0.60 mm (0.008 – 0.024 in)

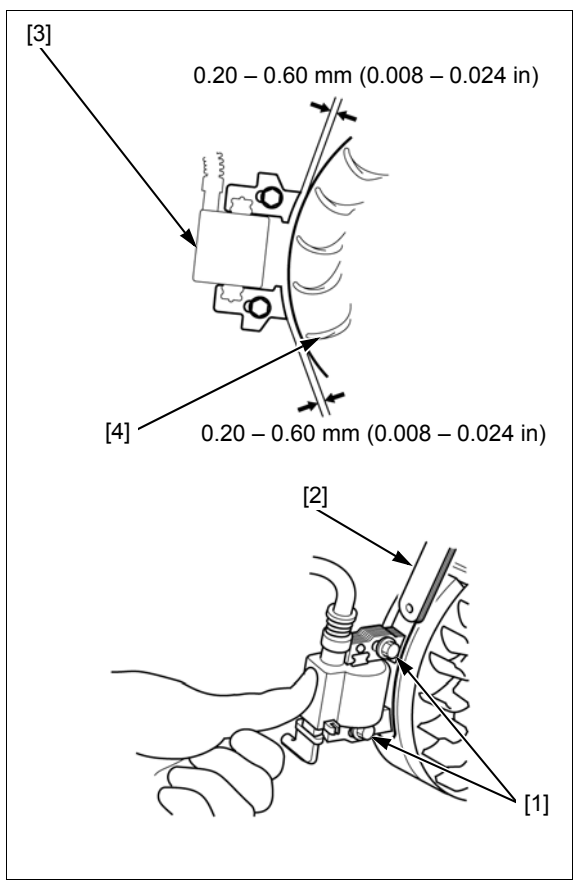
If measured clearance is out of specification, adjust the clearance.

Loosen the two ignition coil bolts (6 x 25 mm) [1].

Insert the thickness gauge [2] of proper thickness between the ignition coil [3] and flywheel [4].

Push the ignition coil firmly against the flywheel and tighten the ignition coil bolts securely.

Remove the thickness gauge.



IGNITION COIL INSPECTION

Remove the fan cover (page 7-3).

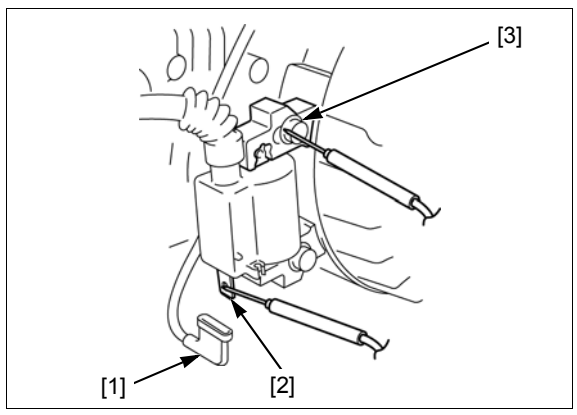
PRIMARY SIDE

Disconnect the ignition coil connector [1].

Measure the resistance of primary coil by attaching one ohmmeter probe to the ignition coil wire terminal [2] and the other at the iron core [3].

RESISTANCE: 0.69 – 0.83 Ω

If measured resistance is out of specification, replace the ignition coil.



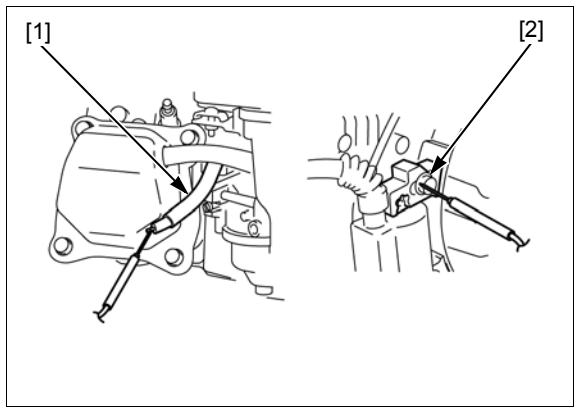
SECONDARY SIDE

Disconnect the spark plug cap from the high tension cord [1].

Measure the resistance of secondary coil by attaching one ohmmeter probe to the high tension cord and the other at the iron core [2].

RESISTANCE: 5.63 – 6.87 kΩ

If measured resistance is out of specification, replace the ignition coil.

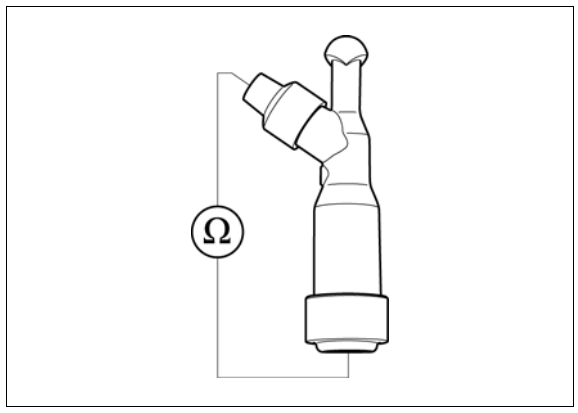


SPARK PLUG CAP INSPECTION

Measure the resistance of spark plug cap by attaching one ohmmeter probe to the terminal in the spark plug cap and the other at the terminal connected high tension cord terminal.

RESISTANCE: 7.5 – 12.5 kΩ

If measured resistance is out of specification, replace the spark plug cap.



SPARK TEST

⚠CAUTION

Never hold the high tension cord with wet hands while performing this test or you could be shocked.

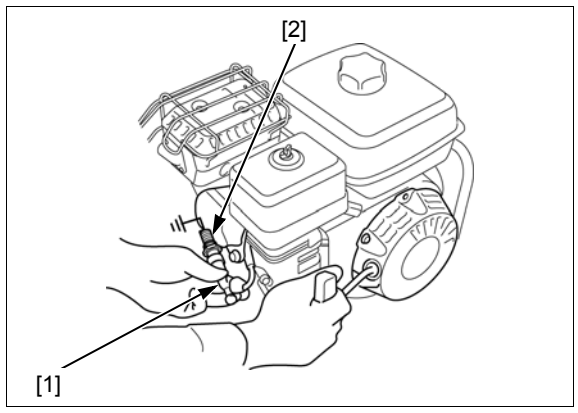
Inspect the following before performing spark test.

– Faulty spark plug
– Loose spark plug cap
– Water in the spark plug cap (Leaking the ignition coil secondary voltage)
– Loose ignition coil connector

Disconnect the spark plug cap [1] from the spark plug [2].

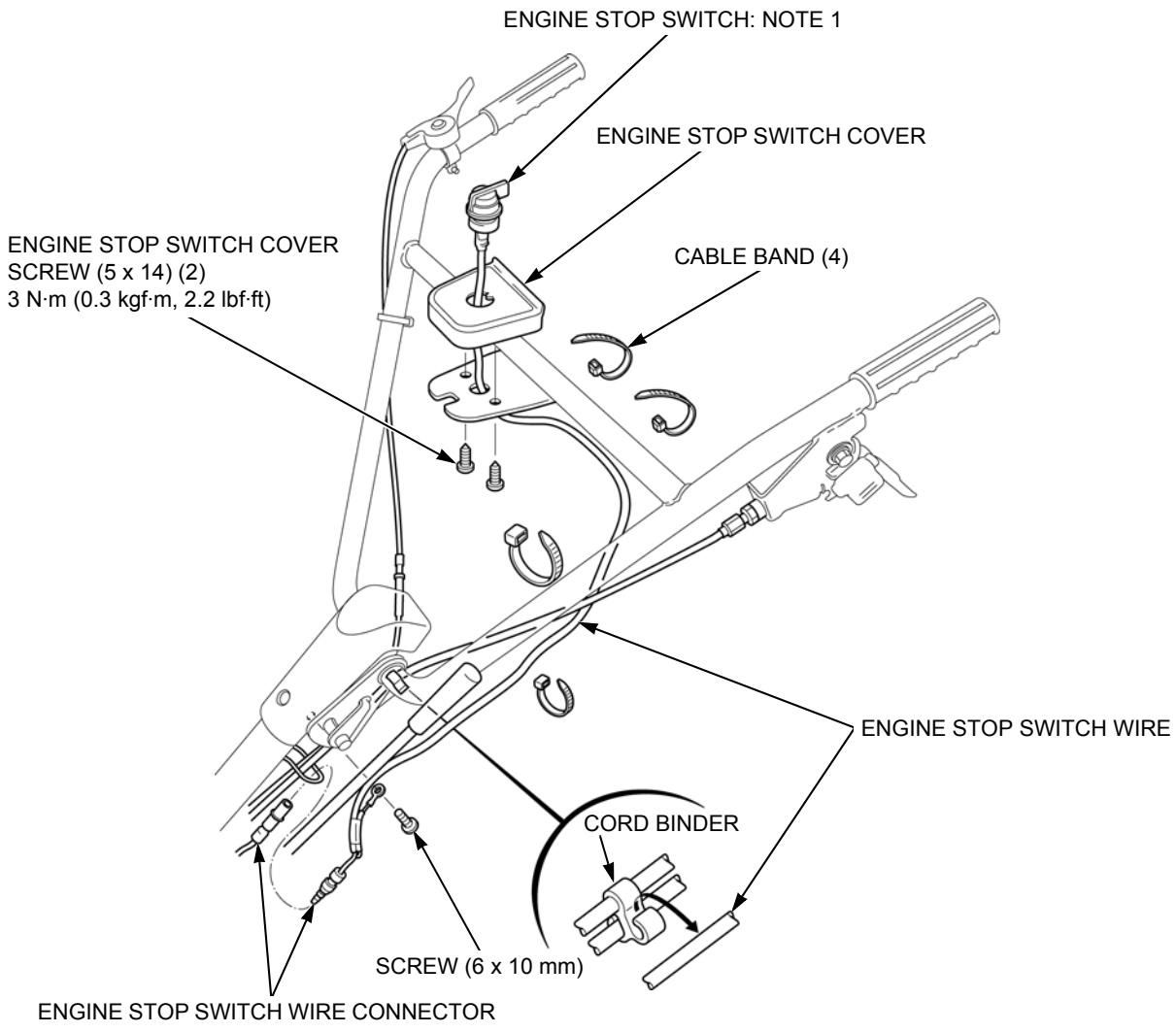
Connect a known-good spark plug to the spark plug cap and ground the spark plug to the cylinder head cover bolt.

Turn the engine stop switch to the "ON" position, pull the recoil starter and check whether sparks jump across the electrode.



ENGINE STOP SWITCH REMOVAL/INSTALLATION

NOTE:
- When installation, route the wire harness properly (page 2-7).

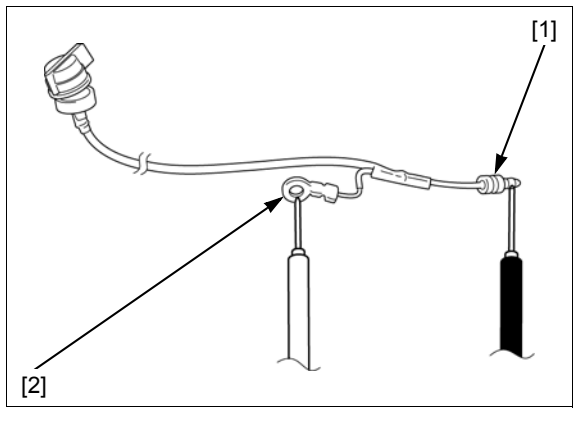


NOTE 1	ENGINE STOP SWITCH INSPECTION	page 7-8

ENGINE STOP SWITCH INSPECTION

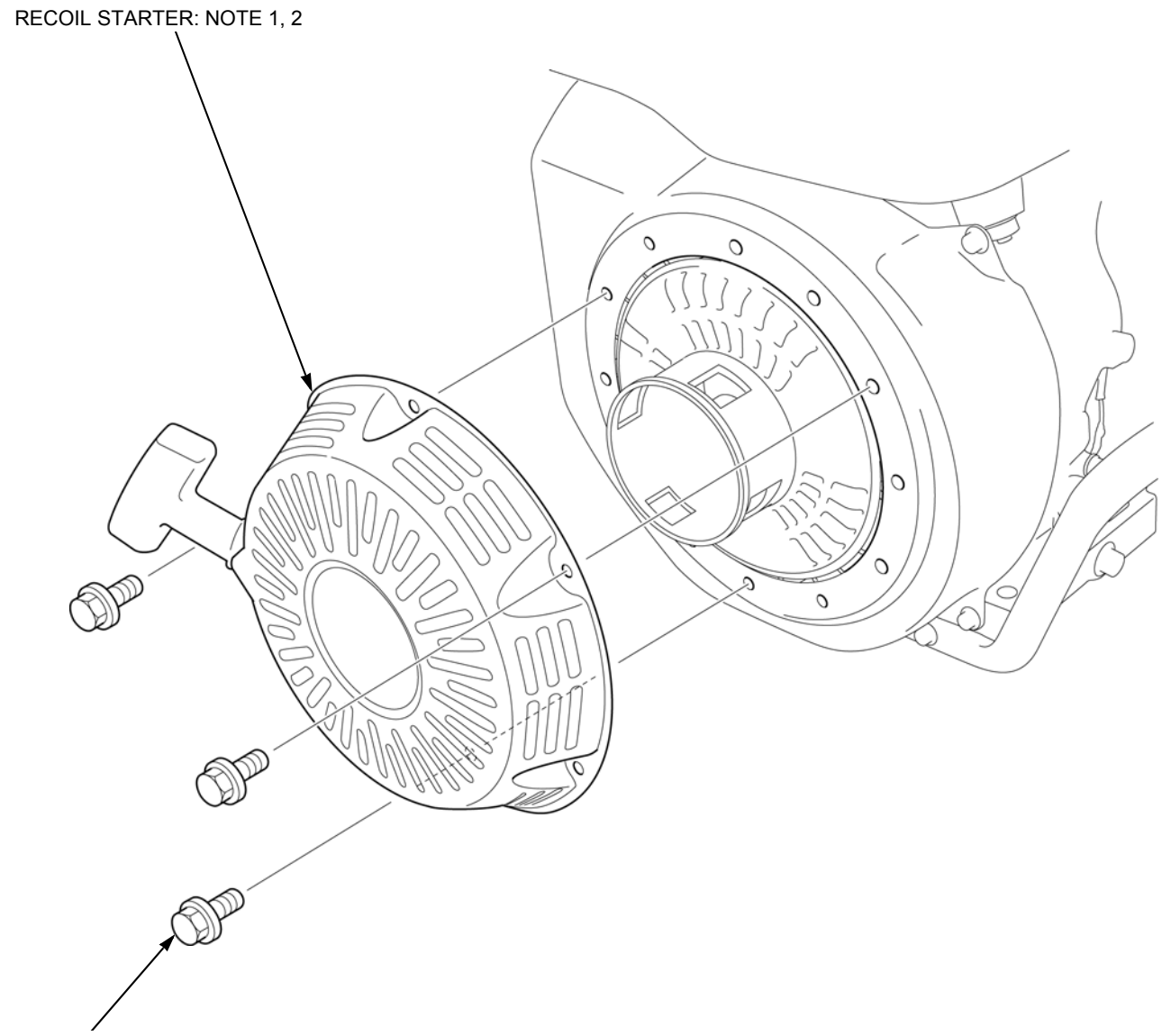
Check for continuity between the engine stop switch wire connector [1] and ground terminal [2] in each switch position.

Switch position	Continuity
ON	No Continuity
OFF	Continuity



8. STARTING SYSTEM

RECOIL STARTER REMOVAL/INSTALLATION



NOTE 1	RECOIL STARTER INSPECTION	page 8-6
NOTE 2	RECOIL STARTER DISASSEMBLY/ASSEMBLY	page 8-3

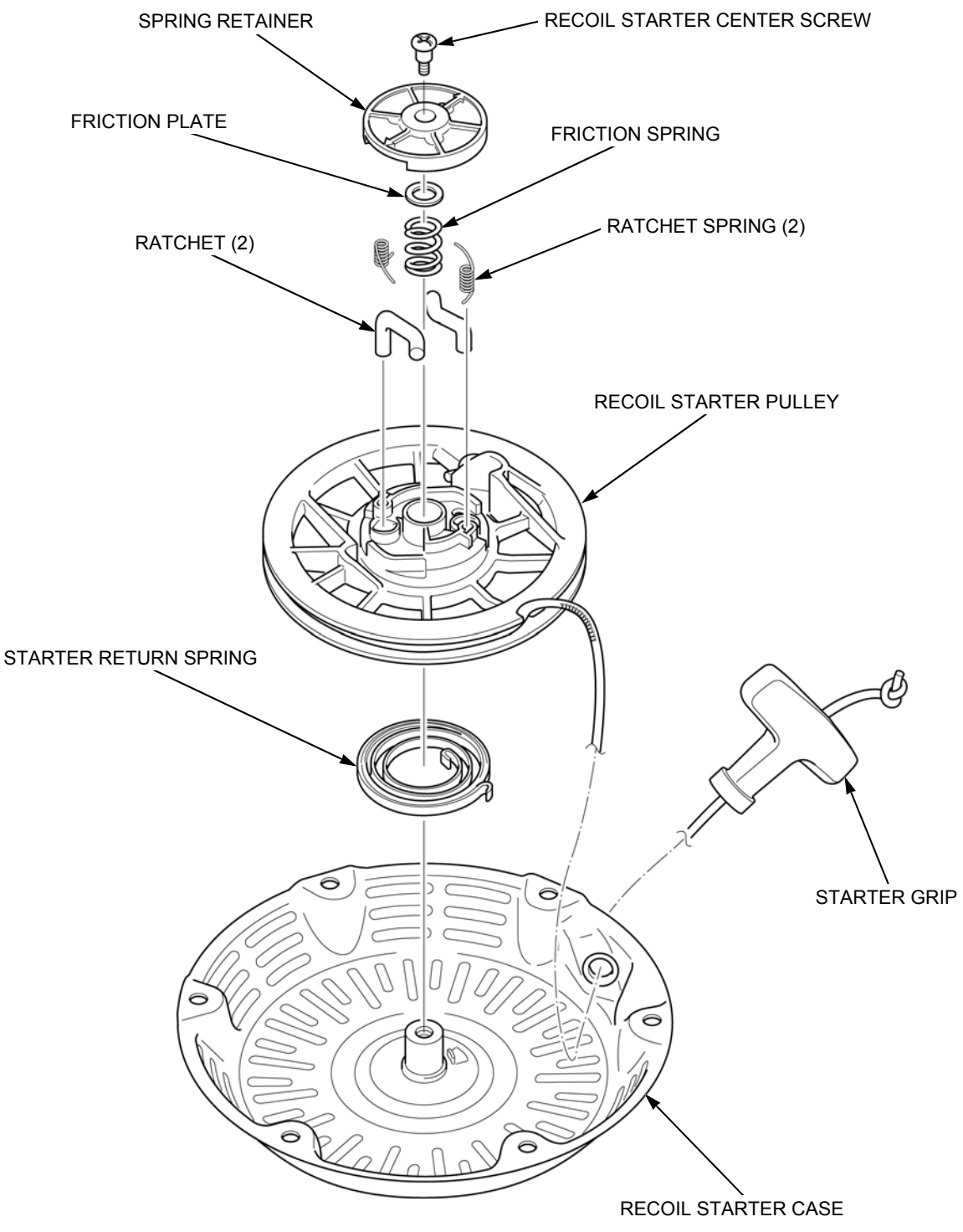
RECOIL STARTER DISASSEMBLY/ASSEMBLY

DISASSEMBLY

⚠ CAUTION

- Wear gloves and eye protection.
- During disassembly, take care not to allow the return spring to come out.

Remove the recoil starter (page 8-2).



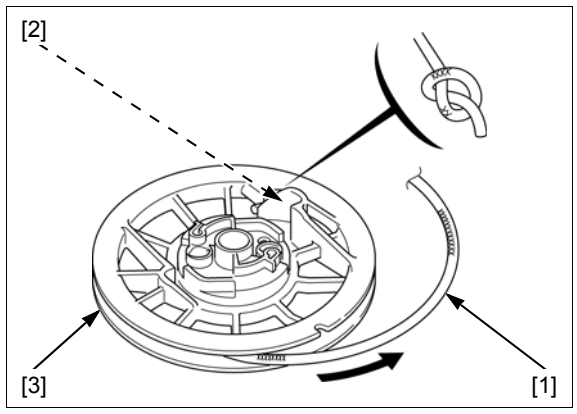
ASSEMBLY

⚠ CAUTION

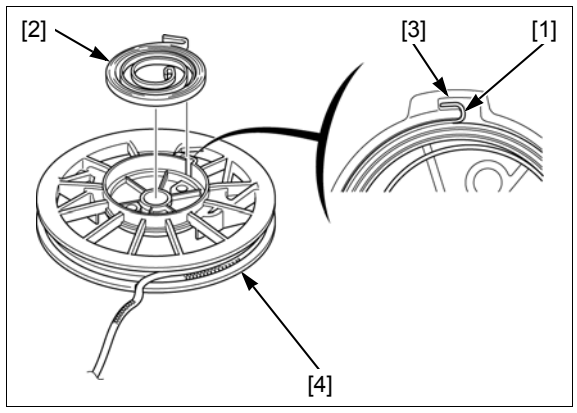
- Wear gloves and eye protection.
- During disassembly, take care not to allow the return spring to come out.

Pass the recoil starter rope [1] through the hole [2] in the recoil starter pulley [3] and then tie the rope as shown.

Wind the recoil starter rope onto the recoil starter pulley counterclockwise as shown.

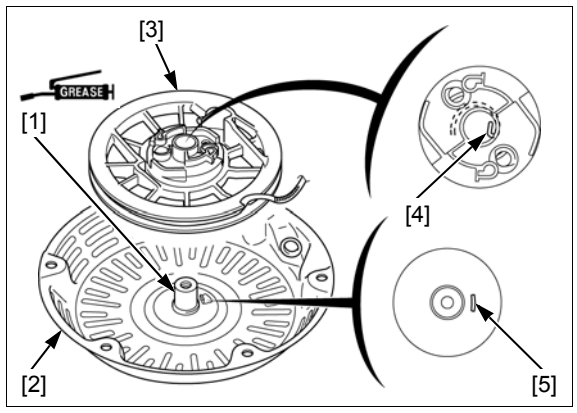


Hook the outer hook [1] of the starter return spring [2] to the groove [3] of the recoil starter pulley [4] and then install the starter return spring by winding it.



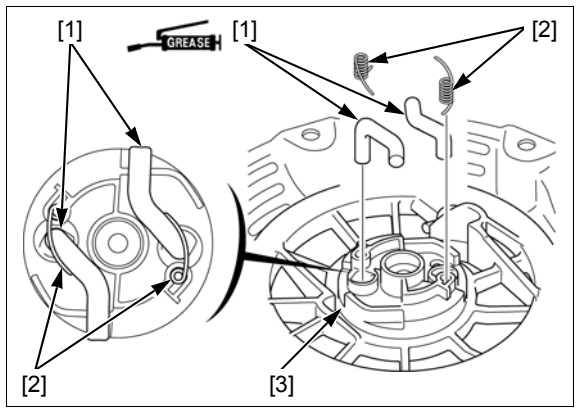
Apply grease to the starter pulley sliding surface [1] on the recoil starter case [2].

Set the recoil starter pulley [3] onto the recoil starter case by aligning the inner hook [4] of the starter return spring with the boss [5] of the recoil starter case as shown.



Apply grease to the ratchet [1] sliding surface.

Install the ratchet springs [2] and ratchets to the recoil starter pulley [3] as shown.

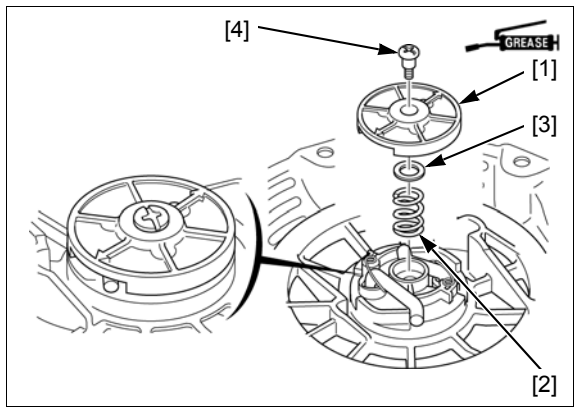


Apply grease to the inside of the spring retainer [1].

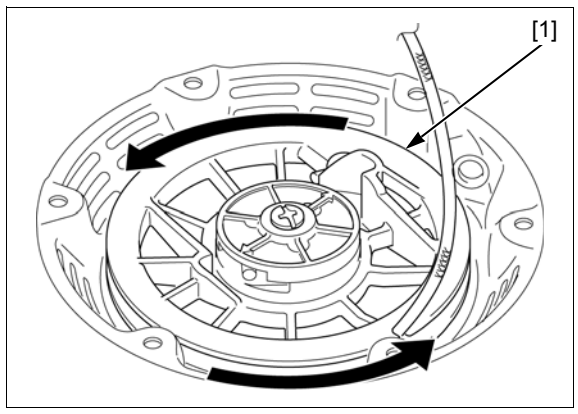
Set the friction spring [2], friction plate [3] and spring retainer to the recoil starter pulley in the direction as shown.

Hold the spring retainer and tighten the center screw [4] to the specified torque.

TORQUE: 5.4 N·m (0.6 kgf·m, 4.0 lbf·ft)



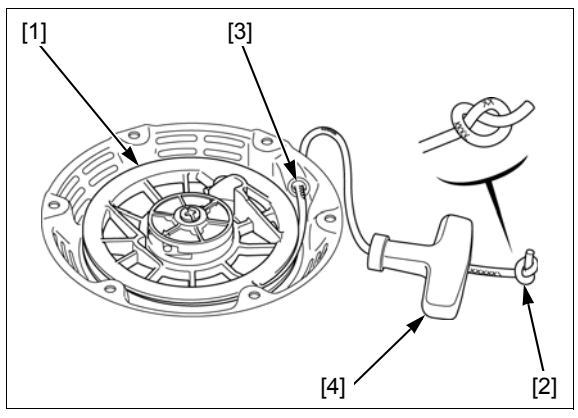
Turn the recoil starter pulley [1] 2 turns counterclockwise to preload the starter return spring. Be sure to hold the recoil starter pulley.



While holding the recoil starter pulley [1], pass the recoil starter rope [2] through hole [3] in the recoil starter case and starter grip [4].

Tie the recoil starter rope as shown.

Check the recoil starter operation (page 8-6).

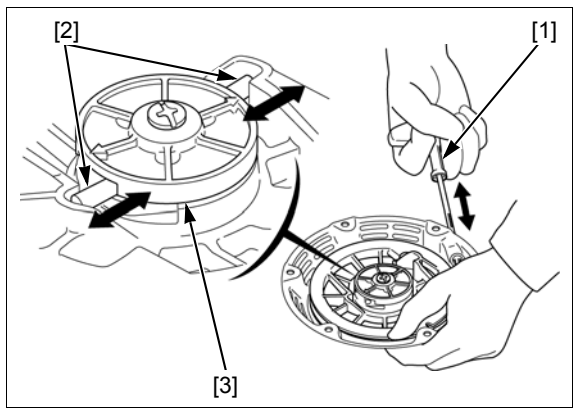


RECOIL STARTER INSPECTION

RECOIL STARTER OPERATION

Remove the recoil starter (page 8-3).

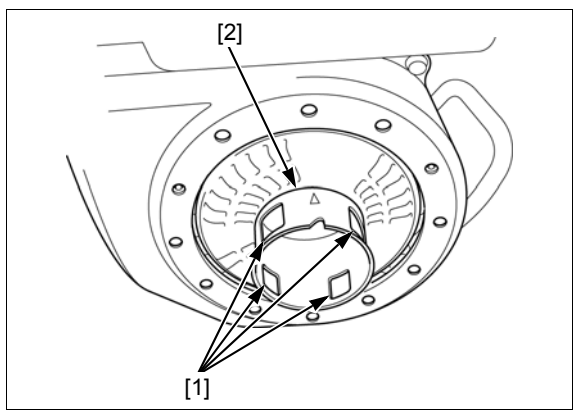
Pull the starter grip [1] several times to inspect that the ratchets [2] are operated properly (the ratchet ends come out from the spring retainer [3]).



STARTER PULLEY

Remove the recoil starter (page 8-3).

Inspect the square holes [1] in the starter pulley [2] for deformation.



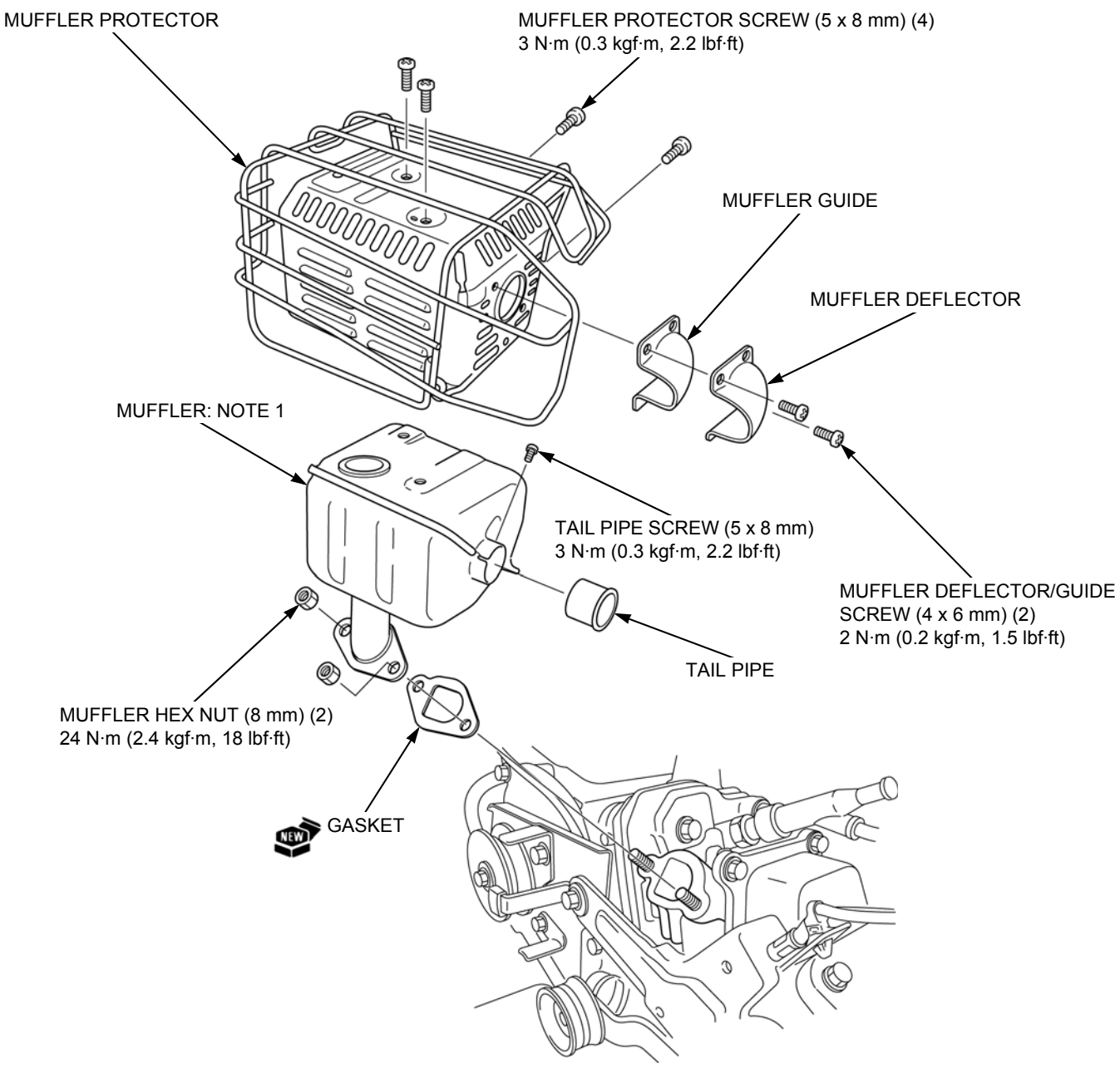
9. MUFFLER

MUFFLER REMOVAL/INSTALLATION

⚠CAUTION

The engine and muffler become very hot during operation and they remain hot for a while after operation.
The muffler removal must be made while the engine is cold.

Remove the belt cover stay (page 11-2).



NOTE 1	Before installation, remove the carbon deposits with a plastic hammer.	–

10. ENGINE REMOVAL/INSTALLATION

ENGINE REMOVAL/INSTALLATION

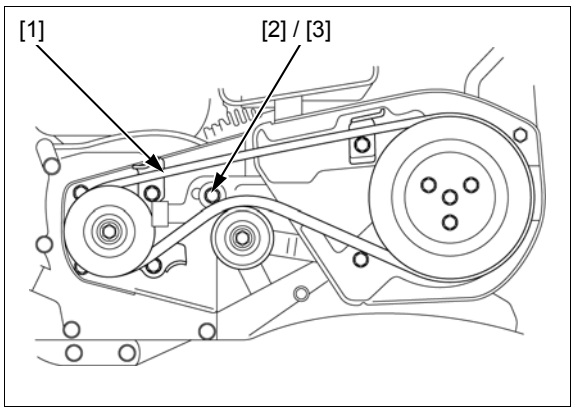
NOTE:
- When installation, route the wire harness properly (page 2-7)

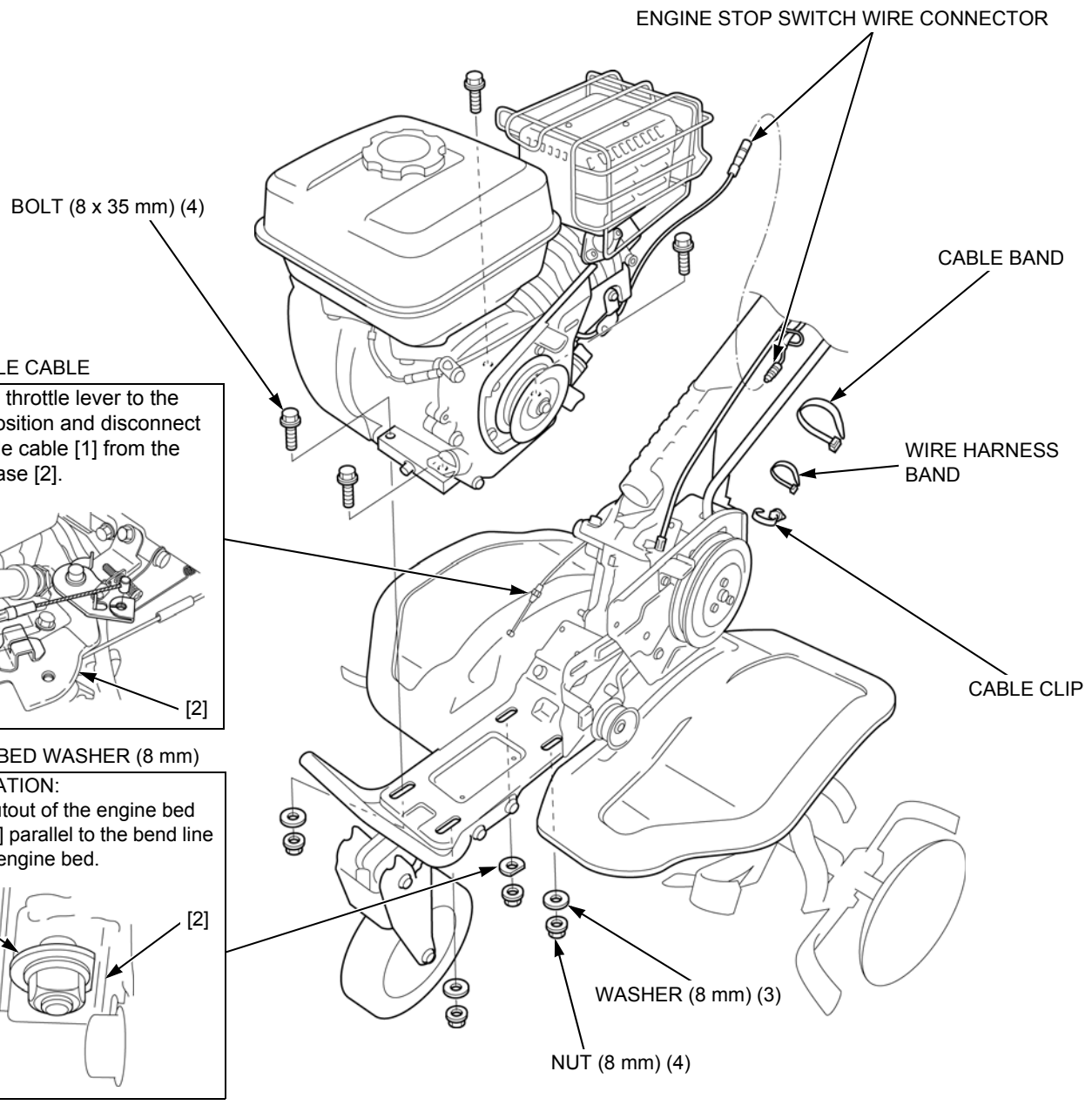
Remove the following:

– Air cleaner (page 5-4)
– Belt cover (page 11-2)

Remove the V-belt [1], engine stay bolt (8 x 20 mm) [2] and washer (8 mm) [3].

After installation, adjust the V-belt tension (page 3-10).

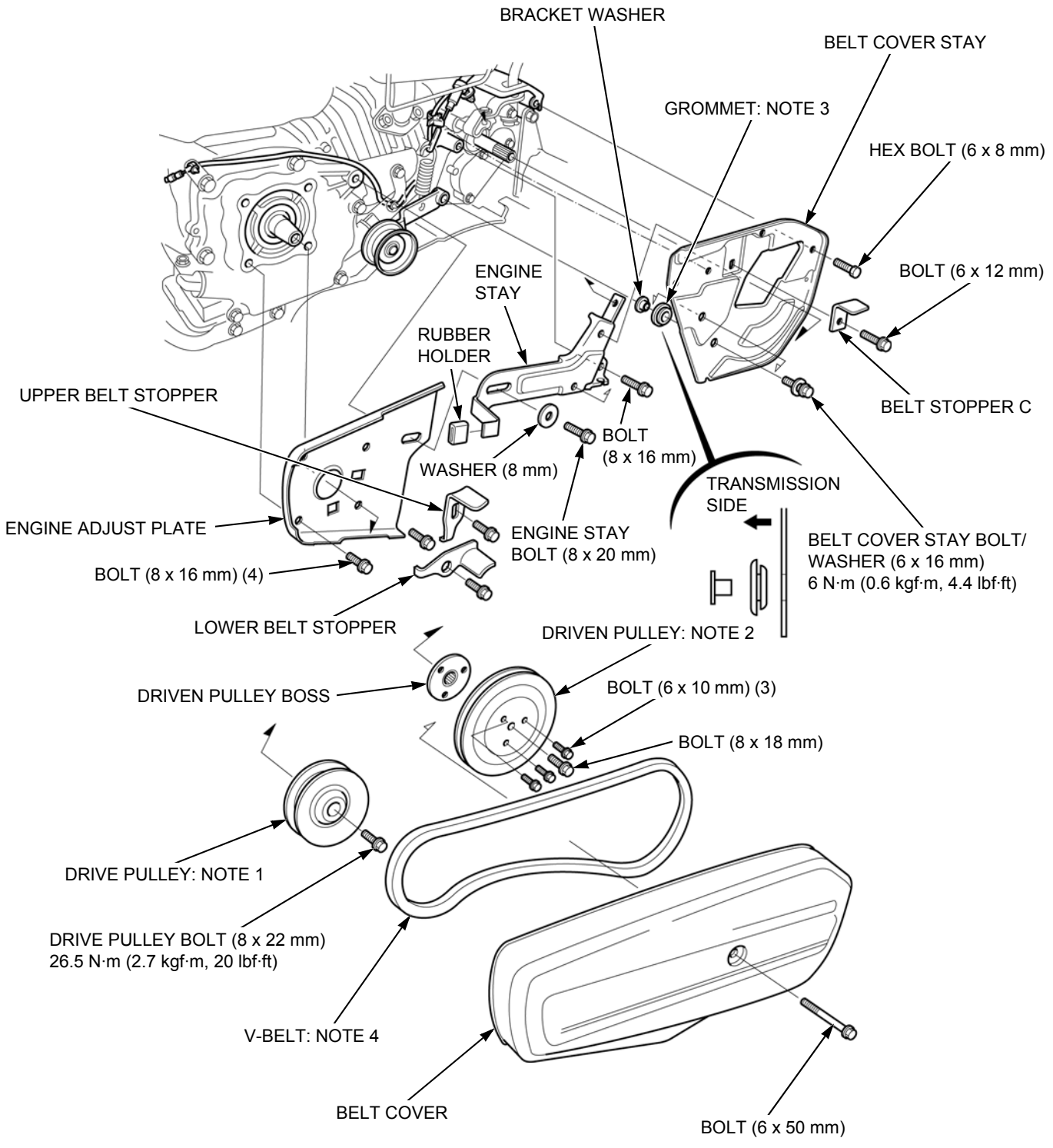




11. CLUTCH

PULLEY/V-BELT REMOVAL/INSTALLATION

After installation, adjust the V-belt tension (page 3-10).



NOTE 1	DRIVE PULLEY REMOVAL/INSTALLATION	page 11-3
NOTE 2	DRIVEN PULLEY REMOVAL/INSTALLATION	page 11-3
NOTE 3	Note the installation direction.	–
NOTE 4	Before installation, check that there is no crack and abnormal wear-out in the belt and replace if necessary.	–

DRIVE PULLEY REMOVAL/INSTALLATION

NOTICE

- *Take care not to damage the drive pulley with the strap wrench.*

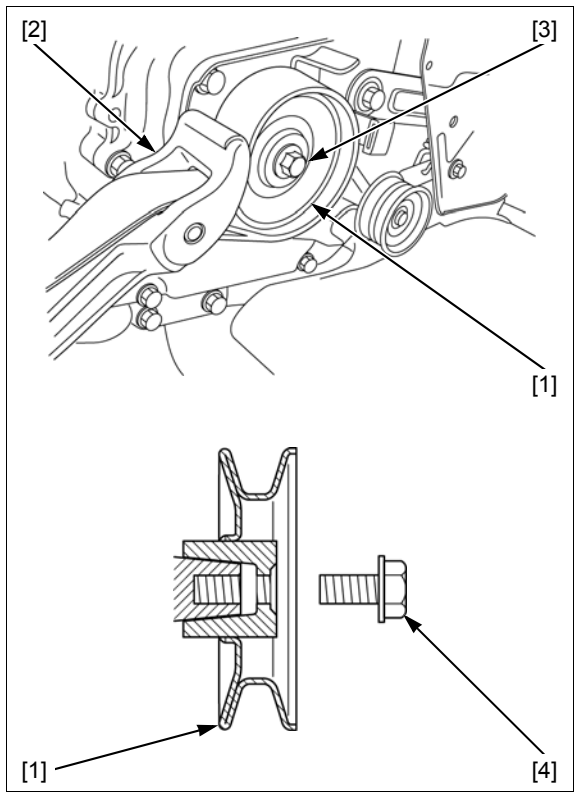
Hold the drive pulley [1] with a commercially available strap wrench [2] and remove the drive pulley bolt (8 x 22 mm) [3].

Screw in a bolt (14 x 1.5 mm) [4] to remove the drive pulley.

Install the drive pulley and bolt.

Hold the drive pulley with a commercially available strap wrench and tighten the bolt to the specified torque.

TORQUE: 26.5 N·m (2.7 kgf·m, 20 lbf·ft)



DRIVEN PULLEY REMOVAL/INSTALLATION

NOTICE

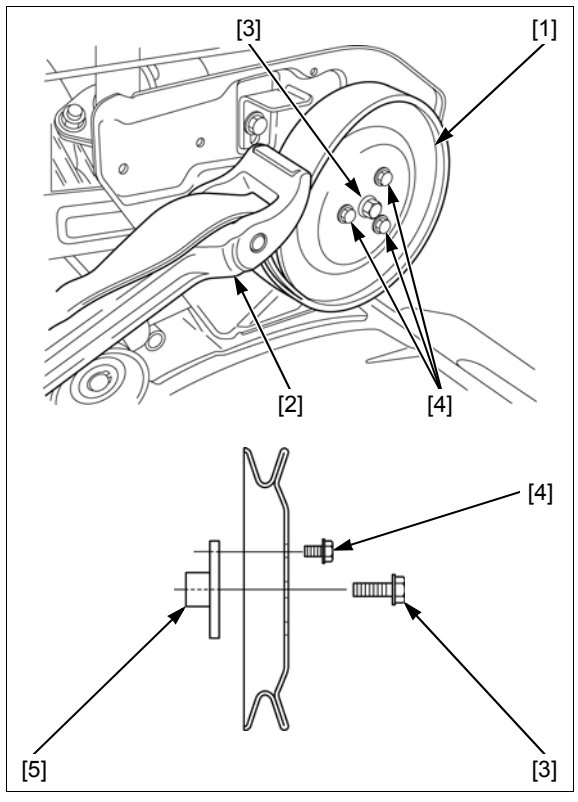
- *Take care not to damage the driven pulley with the strap wrench.*

Hold the driven pulley [1] with a commercially available strap wrench [2] and remove the bolt (8 x 18 mm) [3] and three bolts (6 x 10 mm) [4].

Install the driven pulley and bolts (6 x 10 mm, 8 x 18 mm) through the driven pulley boss [5] as shown.

Hold the driven pulley with a commercially available strap wrench.

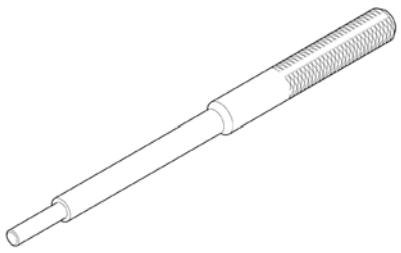
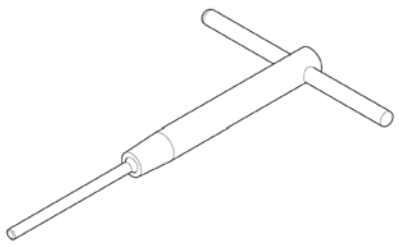
Loosely tighten the bolt (8 x 18 mm) and tighten the three bolts (6 x 10 mm) securely.
Tighten the bolt (8 x 18 mm) securely.



MEMO

12. CYLINDER HEAD

TOOLS

Valve guide driver, 5.5 mm 07742-0010100 	Seat cutter, 27.5 mm (45° IN) 07780-0010200 	Seat cutter, 24.5 mm (45° EX) 07780-0010100 
Flat cutter, 28 mm (32° IN) 07780-0012100 	Flat cutter, 25 mm (32° EX) 07780-0012000 	Interior cutter, 30 mm (60° IN/EX) 07780-0014000 
Cutter holder, 5.5 mm 07781-0010101 	Valve guide reamer, 5.510 mm 07984-2000001 	

CYLINDER HEAD REMOVAL/INSTALLATION

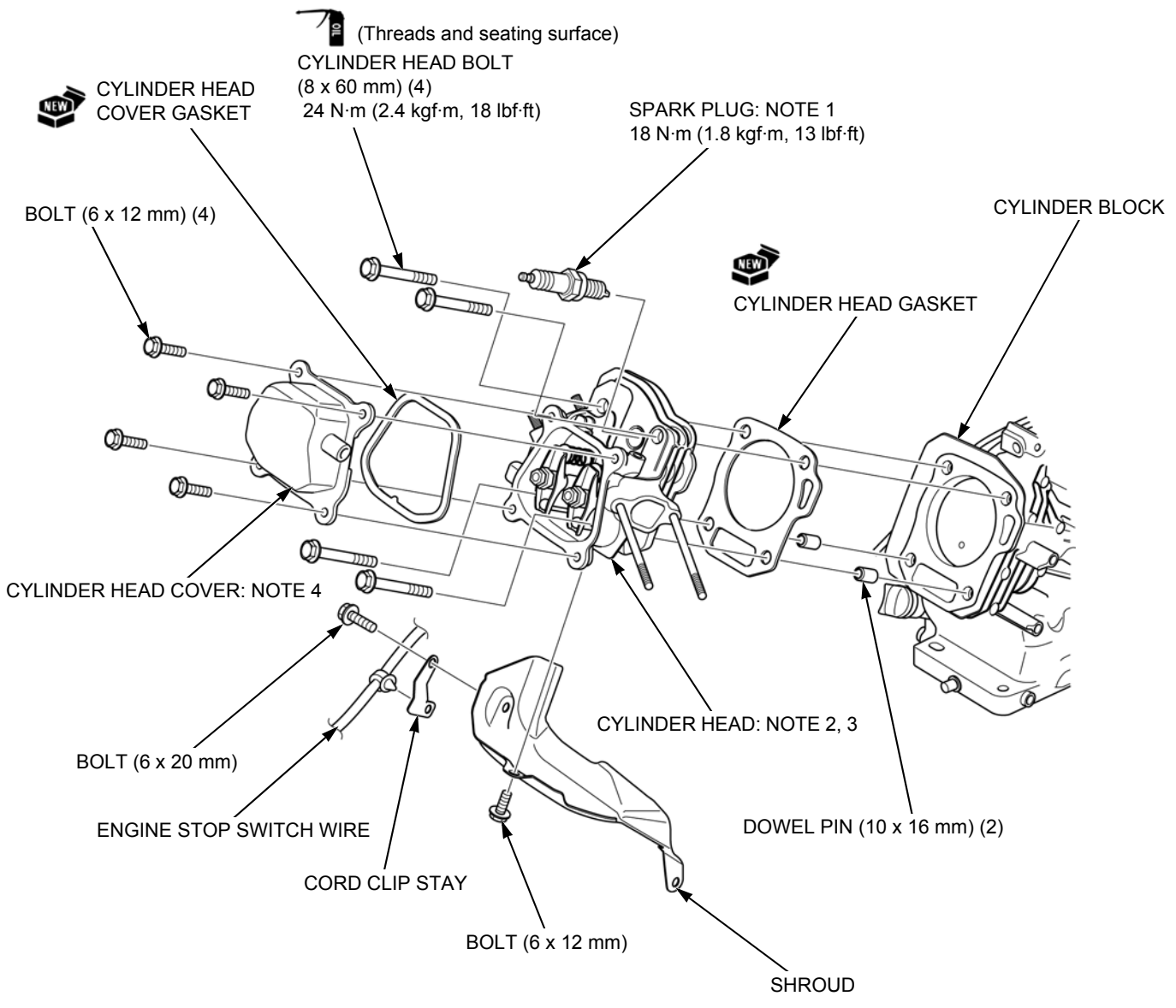
Set the piston at top dead center of the cylinder compression stroke (page 3-12).

Remove the following:

– Engine (page 10-2)
– Control base/governor arm (page 6-2)
– Carburetor (page 5-5)
– Muffler (page 9-2)

After installation, perform the following:

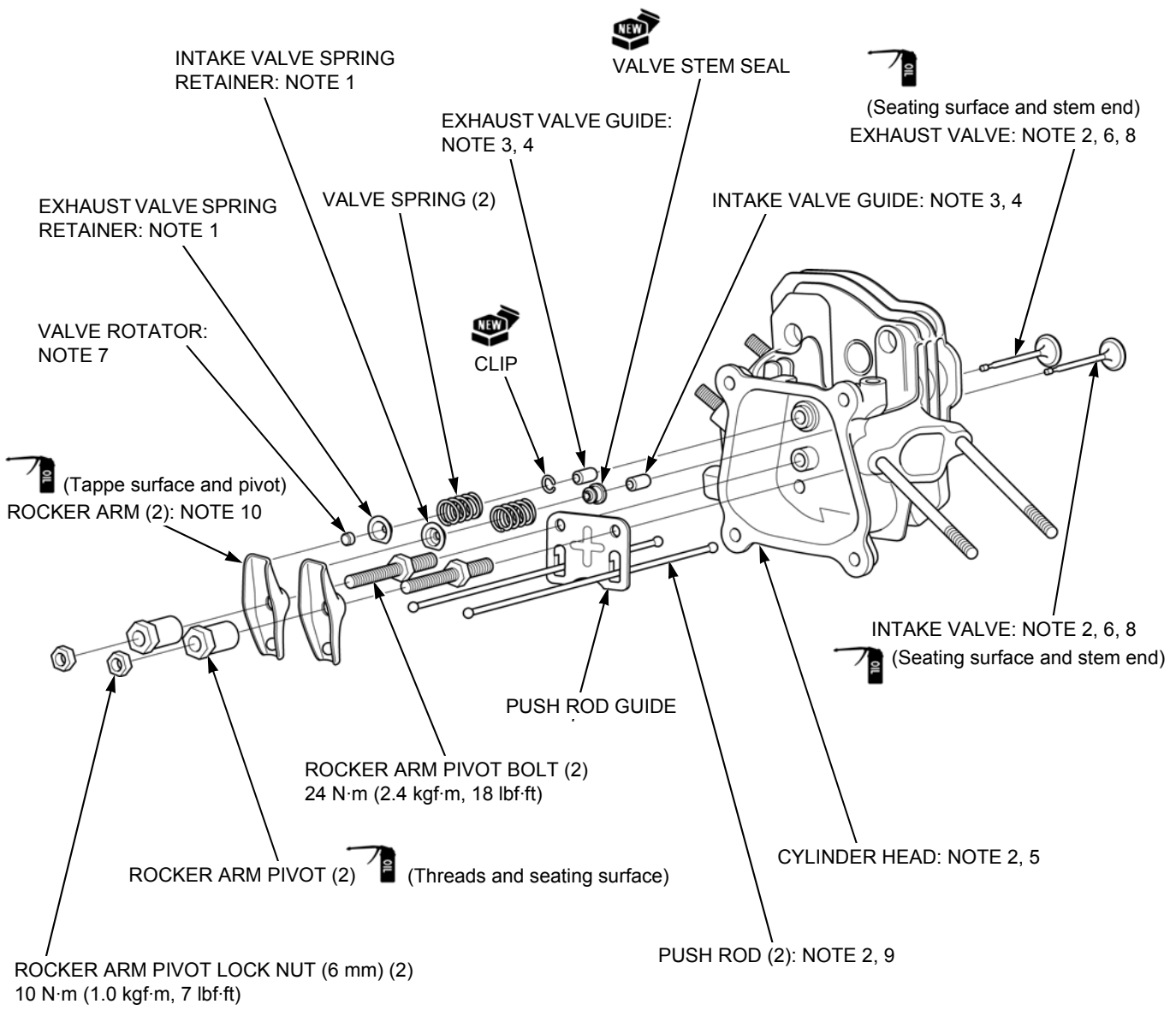
– Check the valve clearance, and if necessary, adjust the clearance (page 3-12).
– Measure the cylinder compression (page 12-5).



NOTE 1	SPARK PLUG CHECK/ADJUSTMENT/REPLACEMENT	page 3-8
NOTE 2	CYLINDER HEAD DISASSEMBLY/ASSEMBLY	page 12-4
NOTE 3	Before installation, remove any carbon deposits from the combustion chamber and inspect the valve seats.	–
NOTE 4	• When removing, pry off slowly at each corner of the head cover. • Using too much force can deform the cylinder head cover. The cylinder head cover must be replaced if it is deformed.	–

CYLINDER HEAD DISASSEMBLY/ASSEMBLY

Remove the cylinder head (page 12-3).

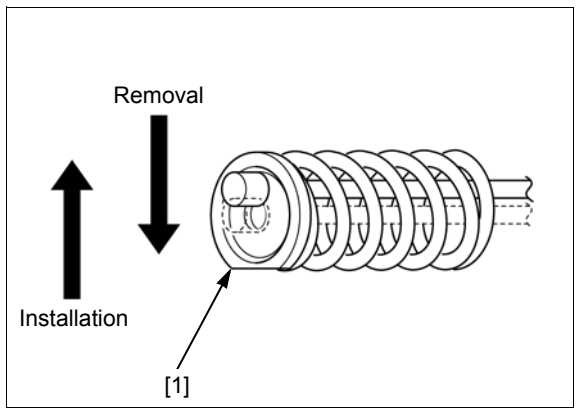


NOTE 1	VALVE SPRING RETAINER REMOVAL/INSTALLATION	page 12-5
NOTE 2	CYLINDER HEAD/VALVES INSPECTION	page 12-5
NOTE 3	VALVE GUIDE REPLACEMENT	page 12-8
NOTE 4	VALVE GUIDE REAMING	page 12-9
NOTE 5	VALVE SEAT RECONDITIONING	page 12-10
NOTE 6	Do not interchange the valves. VALVE HEAD DIAMETER: IN: 25 mm (0.98 in) EX: 24 mm (0.94 in)	–
NOTE 7	If the valve rotator is not installed, the exhaust valve may drop into the cylinder when starting the engine.	–
NOTE 8	Before installation, remove carbon deposits.	–
NOTE 9	Be sure the rod ends are firmly seated in the lifters.	–
NOTE 10	Before installation, check for wear on the pivot bolt, push rod and rocker arm pivot.	–

VALVE SPRING RETAINER REMOVAL/INSTALLATION

NOTE:

- Do not remove the valve spring retainers while the cylinder head is installed to cylinder block, or the valve will drop into the cylinder.



REMOVAL

Push down and slide the valve spring retainer [1] to the side so that the valve stem slips through the hole at the side of the valve spring retainer.

INSTALLATION

Hold the valve so that the valve will not drop.

Push down and slide the valve spring retainer [1] to the side so that the valve spring retainer is hooked the valve spring groove at the side of the valve spring retainer.

CYLINDER HEAD/VALVES INSPECTION

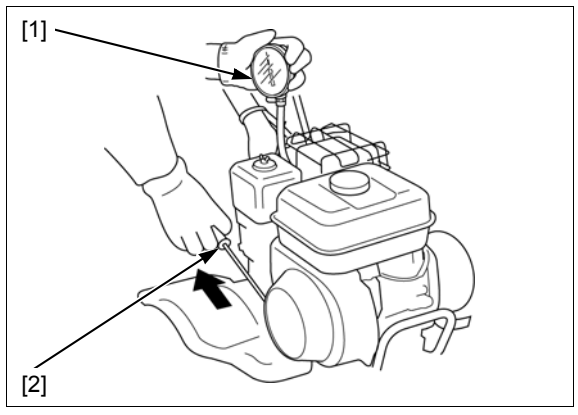
CYLINDER COMPRESSION CHECK

Remove the spark plug (page 3-8).

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

Pull the starter grip [2] forcefully to measure stable cylinder compression.

CYLINDER COMPRESSION:
0.59 MPa (6.0 kgf/cm^2, 86 psi)/600 min^{-1} (rpm)



CYLINDER HEAD WARPAGE

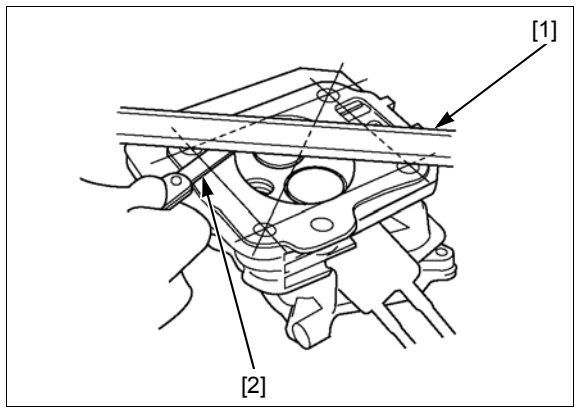
Clear off any gasket material from the cylinder head surface.

Check the spark plug hole and valve areas for cracks.

Check the cylinder head warpage using a straightedge [1] and thickness gauge [2].

SERVICE LIMIT: 0.10 mm (0.004 in)

If the measurement is more than the service limit, replace the cylinder head.



VALVE SEAT WIDTH

Inspect each valve for face irregularities.

If necessary, replace the valve (page 12-4).

Apply a light coat of Prussian Blue or erasable felt-tipped marker ink to each valve seat.

Insert the valve, and snap it using a lapping tool [1] closed against its seat several times.

Be sure the valve does not rotate on the seat.

The transferred marking compound will show any area of the valve face that is not concentric.

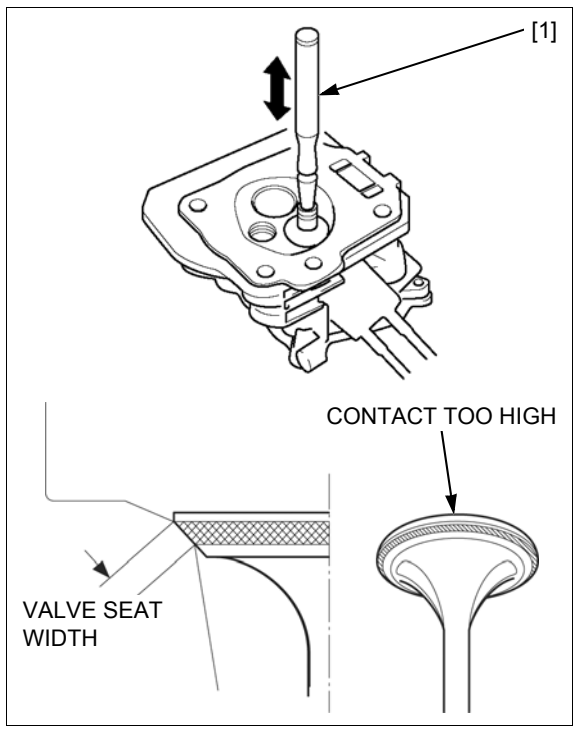
Measure the valve seat width of the cylinder head.

STANDARD: 0.7 – 0.9 mm (0.03 – 0.04 in)
SERVICE LIMIT: 2.0 mm (0.08 in)

If the measurement is more than the service limit, recondition the valve seat (page 12-10).

Check whether the valve seat contact area of the valve is too high.

If the valve seat is too high or too low, recondition the valve seat (page 12-10).



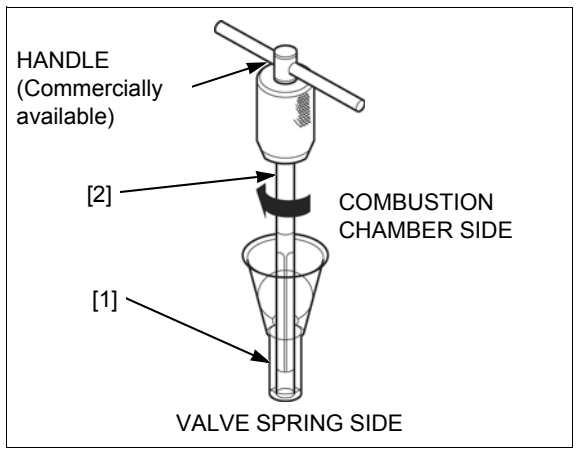
VALVE GUIDE I.D.

Ream the valve guide [1] to remove any carbon deposits before measuring.

TOOL:
Valve guide reamer, 5.510 mm [2]07984-2000001

NOTICE

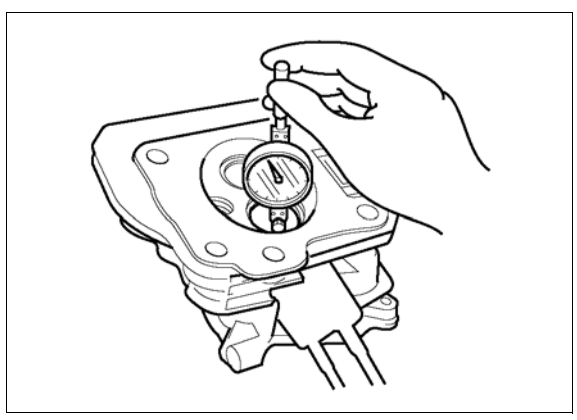
- *Turn the special tool (Valve guide reamer) clockwise, never counterclockwise.*
- *Continue to rotate the special tool while removing it from the valve guide.*



Measure and record each valve guide I.D.

STANDARD: IN/EX: 5.500 – 5.512 mm (0.2165 – 0.2170 in)
SERVICE LIMIT: IN/EX: 5.572 mm (0.2194 in)

If the measured valve guide I.D. is more than the service limit, replace the valve guide (page 12-8).



VALVE FACE/VALVE STEM O.D.

Inspect each valve face [1] for irregularities.

If necessary, replace the valve.

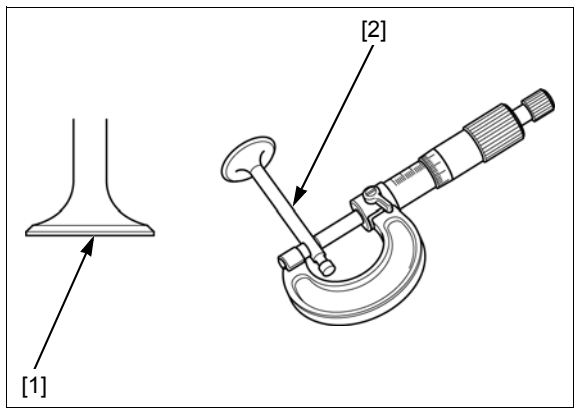
Inspect each valve [2] for bending or abnormal stem wear.

If necessary, replace the valve.

Measure and record each valve stem O.D.

STANDARD:
IN: 5.468 – 5.480 mm (0.2153 – 0.2157 in)
EX: 5.425 – 5.440 mm (0.2136 – 0.2142 in)

SERVICE LIMIT:
IN: 5.318 mm (0.2094 in)
EX: 5.275 mm (0.2077 in)



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

GUIDE-TO-STEM CLEARANCE

Subtract each valve stem O.D. from the corresponding guide I.D. to obtain the stem-to-guide clearance.

STANDARD:
IN: 0.020 – 0.044 mm (0.0008 – 0.0017 in)
EX: 0.060 – 0.087 mm (0.0024 – 0.0034 in)
SERVICE LIMIT:
IN: 0.10 mm (0.004 in)
EX: 0.12 mm (0.005 in)

If the calculated clearance is more than the service limit, replace the following:

– Valve (page 12-4)
– Valve guide (page 12-8)

VALVE SPRING FREE LENGTH/ PERPENDICULARITY

Measure the valve spring free length.

STANDARD: 30.5 mm (1.20 in)

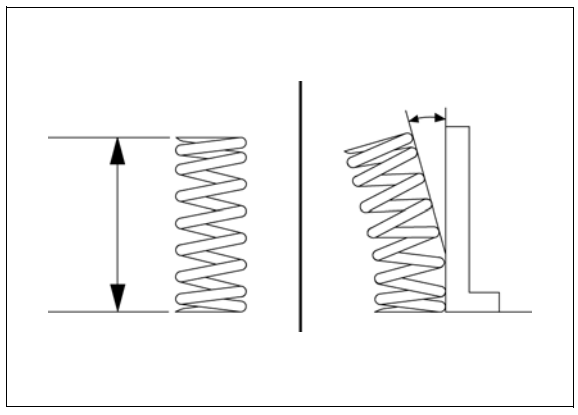
SERVICE LIMIT: 29.0 mm (1.14 in)

If the measured length is less than the service limit, replace the valve spring.

Measure the valve spring perpendicularity.

SERVICE LIMIT: 1.5° max.

If the measured perpendicularity is more than the service limit, replace the valve spring.

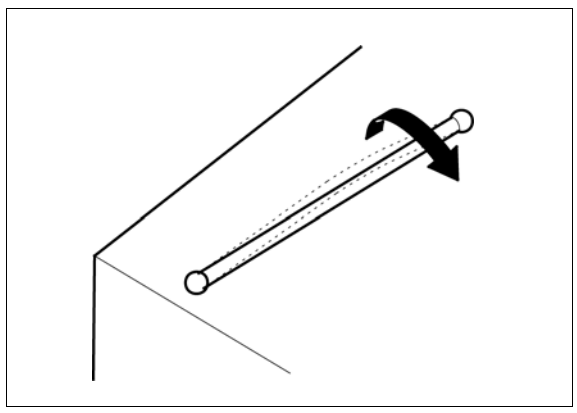


PUSH ROD RUNOUT

Check both ends of the push rod for wear.

Check the push rod for straightness.

If necessary, replace the push rod.



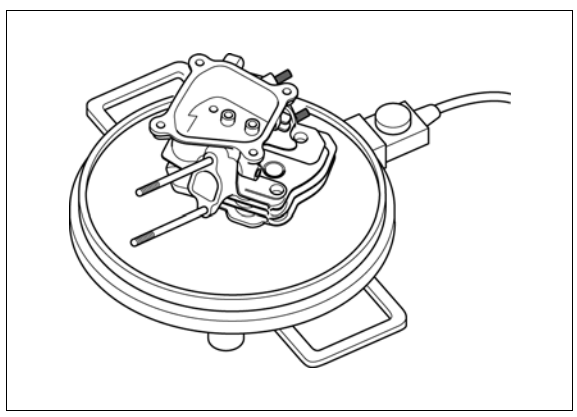
VALVE GUIDE REPLACEMENT

Chill the replacement valve guides in the freezer section of a refrigerator for about an hour.

Use a hot plate or oven to heat the cylinder head evenly to 150°C (302°F).

⚠CAUTION

To avoid burns, use heavy gloves when handling the heated cylinder head.



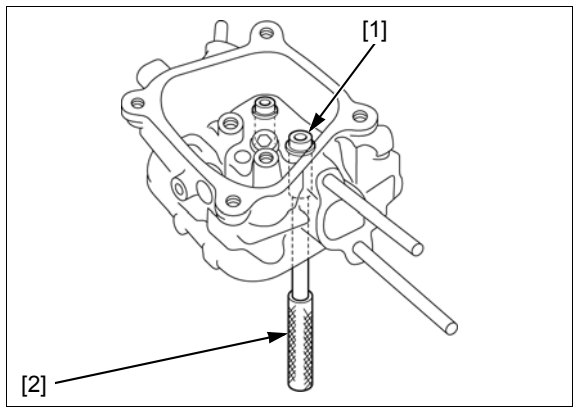
NOTICE

- *Do not use a torch to heat the cylinder head; warpage of the cylinder head may result.*
- *Do not get the cylinder head hotter than 150°C (302°F); excessive heat may loosen the valve seat.*

Remove the heated cylinder head from the hot plate and support it with wooden blocks.

Drive the valve guides [1] out of the cylinder head from the combustion chamber side.

TOOL:
Valve guide driver, 5.5 mm [2] 07742-0010100



NOTICE

- *When driving the valve guides out, be careful not to damage the cylinder head.*

Remove new valve guides [1] from the refrigerator one at a time as needed.

Install new valve guide clip [2] to the exhaust valve guide and drive it until the valve guide clip is fully seated as shown from the valve spring side of the cylinder head.

TOOL:
Valve guide driver, 5.5 mm [3] 07742-0010100

Drive the intake valve guide to the specified height (measured from the end of the valve guide to the cylinder head as shown) from the valve spring side of the cylinder head.

TOOL:
Valve guide driver, 5.5 mm 07742-0010100

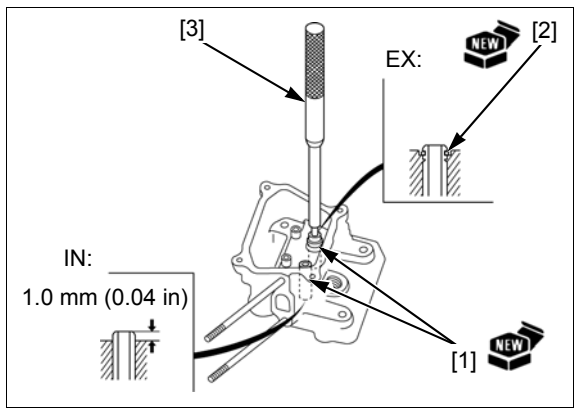
INTAKE VALVE GUIDE INSTALLATION HEIGHT:
1.0 mm (0.04 in)

After installing the valve guide, check the guide for damage.

Replace the valve guide if damaged.

Let the cylinder head cool to room temperature.

Ream the valve guide (page 12-9).



VALVE GUIDE REAMING

For best results, be sure the cylinder head is at room temperature before reaming valve guides.

Coat the reamer and valve guide with cutting oil.

TOOL:
Valve guide reamer, 5.510 mm [1]07984-2000001

Rotate the reamer clockwise through the valve guide the full length of the reamer.

NOTICE

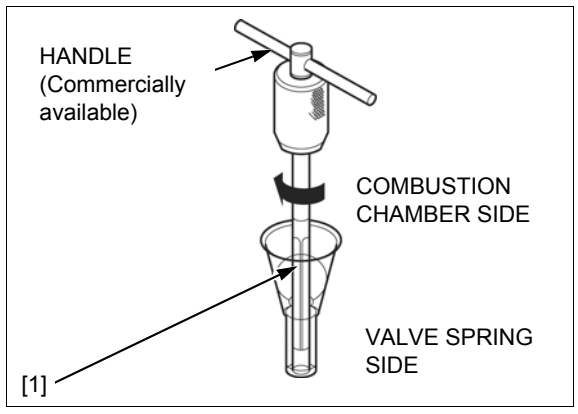
- *Turn the special tool (valve guide reamer) clockwise, never counterclockwise.*
- *Continue to rotate the special tool while removing it from the valve guide.*
- *Thoroughly clean the cylinder head to remove any cutting residue.*

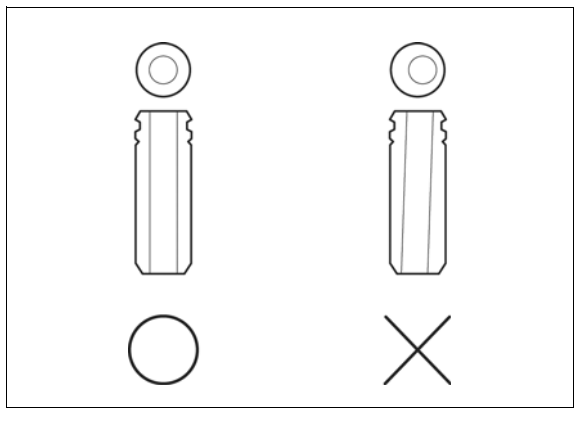
Check the valve guide bore; it should be straight, round and centered in the valve guide. Insert the valve and check operation.

If the valve does not operate smoothly, the guide may have been bent during installation.

Replace the valve guide if it is bent or damaged.

Check the valve guide-to-stem clearance.

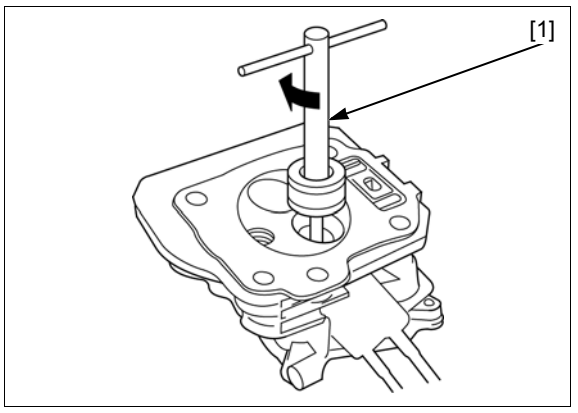




VALVE SEAT RECONDITIONING

Check the valve seat width (page 12-6).

Valve seat cutters [1]/grinder or equivalent valve seat refacing equipment is recommended to correct a worn valve seat.



NOTICE

- *Turn the cutter clockwise, never counterclockwise.*
- *Continue to rotate the cutter while removing it from the valve seat.*

The 32° cutter removes material from the top edge (contact too high).

TOOLS:

Cutter holder, 5.5 mm	**07781-0010101**
Flat cutter, 28 mm (32° IN)	**07780-0012100**
Flat cutter, 25 mm (32° EX)	**07780-0012000**

The 60° cutter removes material from the bottom edge (contact too low).

TOOLS:

Cutter holder, 5.5 mm	**07781-0010101**
Interior cutter, 30 mm (60° IN/EX)	**07780-0014000**

Be sure that the width of the finished valve seat is within specification.

STANDARD: 0.7 – 0.9 mm (0.03 – 0.04 in)
SERVICE LIMIT: 2.0 mm (0.08 in)

Make a light pass with the 45° cutter to remove any possible burrs at the edge of the seat.

TOOLS:

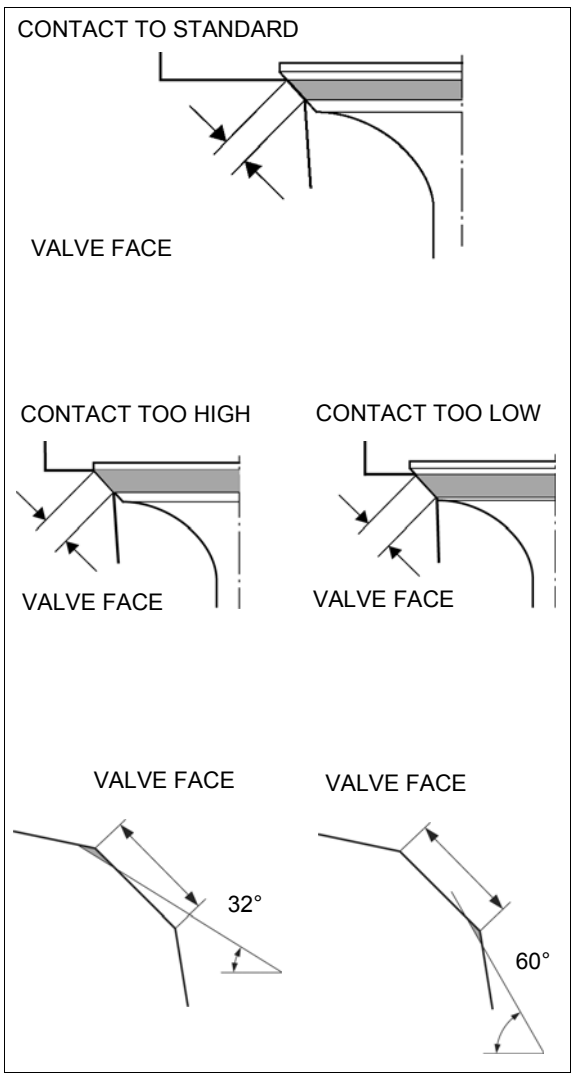
Cutter holder, 5.5 mm	**07781-0010101**
Seat cutter, 27.5 mm (45° IN)	**07780-0010200**
Seat cutter, 24.5 mm (45° EX)	**07780-0010100**

After resurfacing the seats, inspect for even valve seating.

Apply Prussian Blue compound or erasable felt-tipped marker ink to the valve seat. Insert the valve, and snap it closed against its seat several times. Be sure the valve does not rotate on the seat.

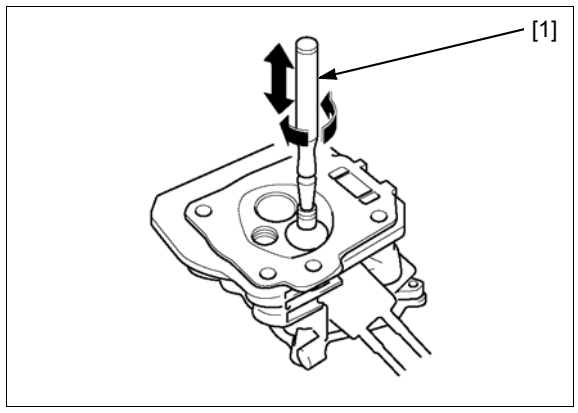
The seating surface, as shown by the transferred marking compound, should have good contact all the way around.

Thoroughly clean the cylinder head to remove any cutting residual.



Lap the valves into their seats, using a commercially available lapping tool [1] and lapping compound.

After lapping, wash all residual compound off the cylinder head and valve.



NOTICE

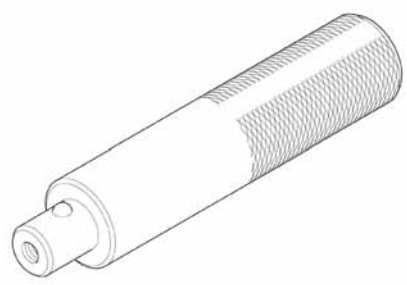
- *Do not push the valve against the seat with force during lapping. Apply a light pass with the lapping tool.*
- *Avoid lapping the valve in the same position as it causes uneven wear. Lap the valve by turning the lapping tool slowly.*
- *Take care not to allow the lapping compound to enter the gap between the stem and guide.*

Adjust the valve clearance after assembly (page 3-12).

MEMO

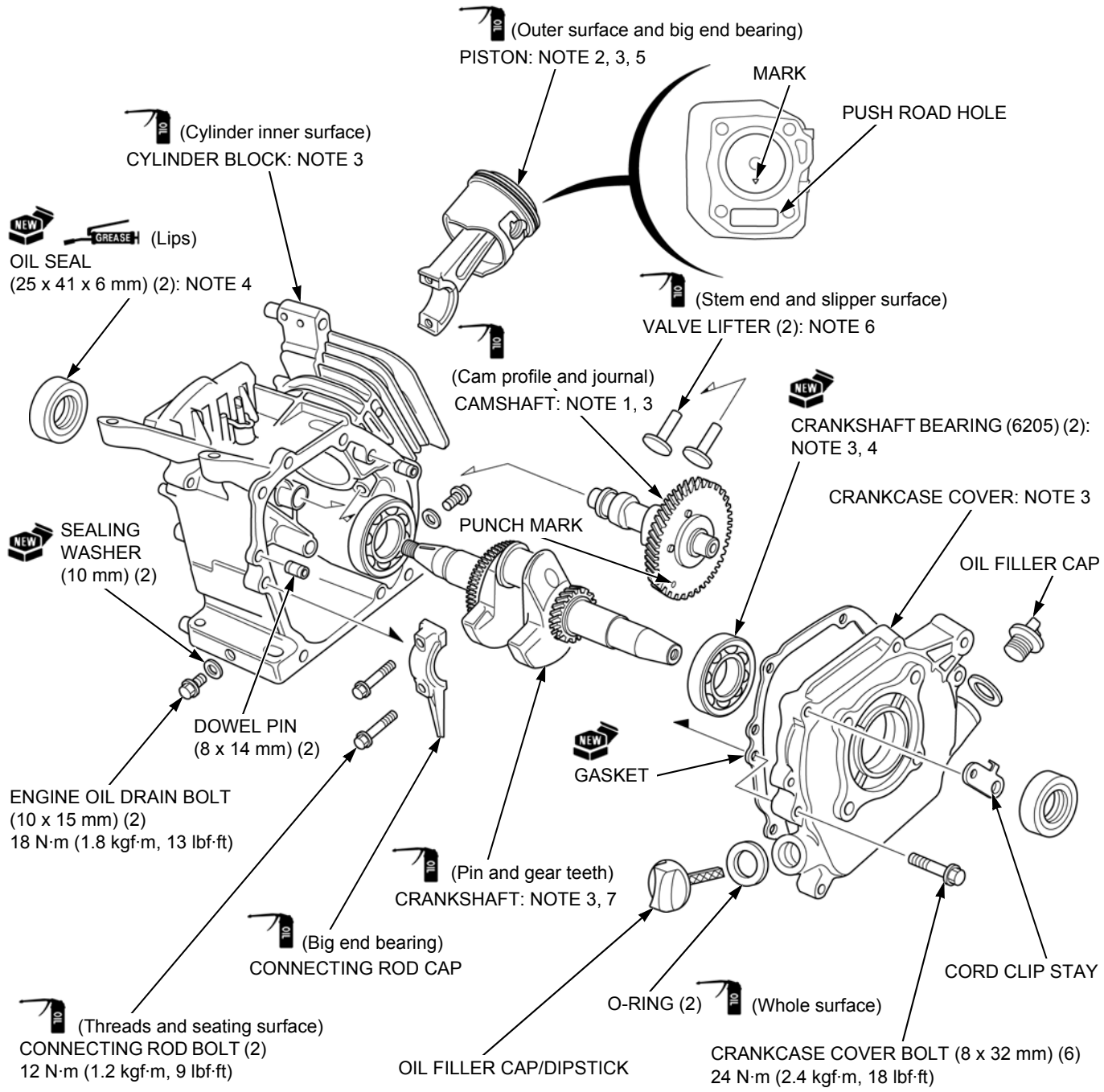
13. CYLINDER BLOCK

TOOLS

Attachment, 37 x 40 mm 07746-0010200 	Attachment, 52 x 55 mm 07746-0010400 	Pilot, 25 mm 07746-0040600 
Driver 07749-0010000 		

CRANKCASE COVER/CRANKSHAFT/CAMSHAFT/PISTON REMOVAL/INSTALLATION

Drain the engine oil (page 3-4).
Remove the cylinder head (page 12-3).



NOTE 1	CAMSHAFT INSTALLATION	page 13-4
NOTE 2	PISTON DISASSEMBLY/ASSEMBLY	page 13-5
NOTE 3	CRANKCASE COVER/CYLINDER BLOCK/PISTON/CONNECTING ROD/ CRANKSHAFT/CAMSHAFT INSPECTION	page 13-6
NOTE 4	CRANKSHAFT BEARING/OIL SEAL REPLACEMENT	page 13-12
NOTE 5	When reassembly, install with the mark toward the push rod hole.	–
NOTE 6	When disassembly, mark so that the IN and EX sides can be distinguished.	–
NOTE 7	When reassembly, push in until the bearing touches the crankcase. Be careful not to damage the oil seal.	–

CAMSHAFT INSTALLATION

NOTE:

- Install the valve lifters [1] immediately before installing the camshaft [2].

Apply engine oil to the two valve lifters slipper surface, stem and stem end.

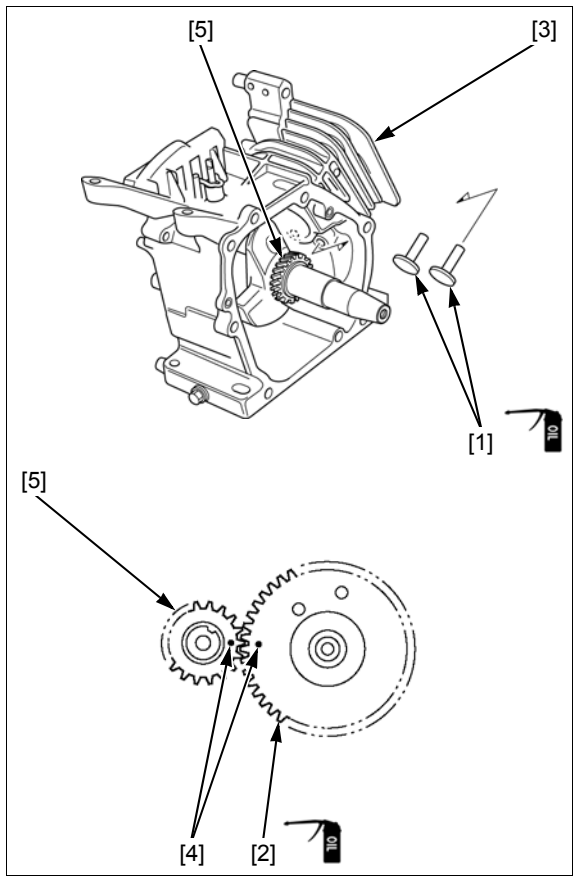
Install the valve lifters to the cylinder block [3].

Apply engine oil to the camshaft cam profile and journal.

NOTICE

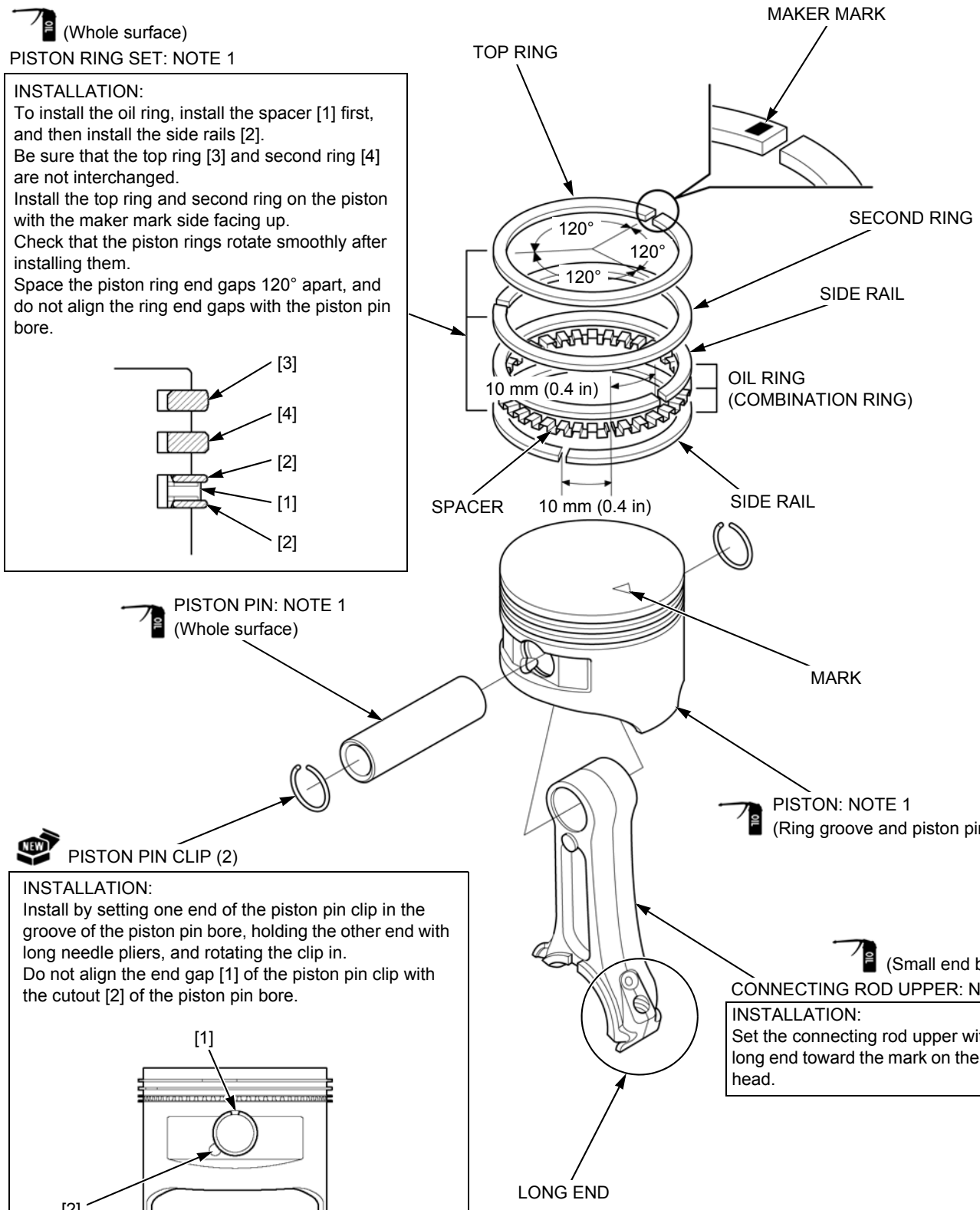
- *When a new camshaft, apply molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1:1) to the cam profile.*

Install the camshaft to the cylinder block by aligning the punch marks [4] of the camshaft and timing gear [5] of the crankshaft as shown.



PISTON DISASSEMBLY/ASSEMBLY

Remove the piston (page 13-3).



NOTE 1	CRANKCASE COVER/CYLINDER BLOCK/PISTON/CONNECTING ROD/ CRANKSHAFT/CAMSHAFT INSPECTION	page 13-6

CRANKCASE COVER/CYLINDER BLOCK/PISTON/CONNECTING ROD/CRANKSHAFT/CAMSHAFT INSPECTION

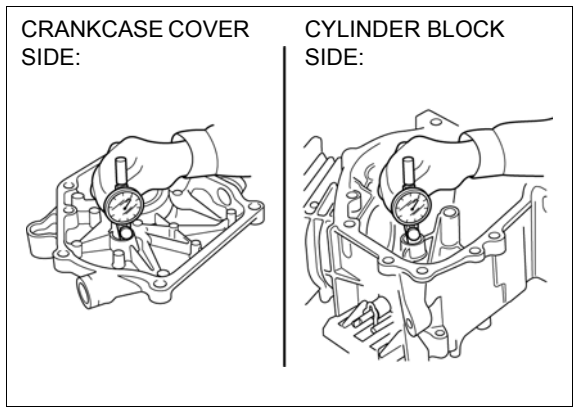
CAMSHAFT HOLDER I.D.

Measure the camshaft holder I.D.

STANDARD:
14.000 – 14.018 mm (0.5512 – 0.5519 in)
SERVICE LIMIT:
14.048 mm (0.5531 in)

If the measurement is more than the service limit, replace the crankcase cover and cylinder block.

Inspect the camshaft O.D. (page 13-10) with this inspection.



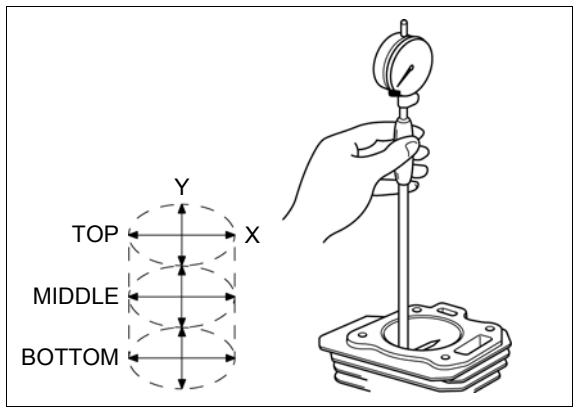
CYLINDER SLEEVE I.D.

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:
68.000 – 68.015 mm (2.6772 – 2.6778 in)
SERVICE LIMIT:
68.165 mm (2.6837 in)

If the measurement is more than the service limit, replace the cylinder block.

Inspect the piston skirt O.D. (page 13-6) with this inspection.



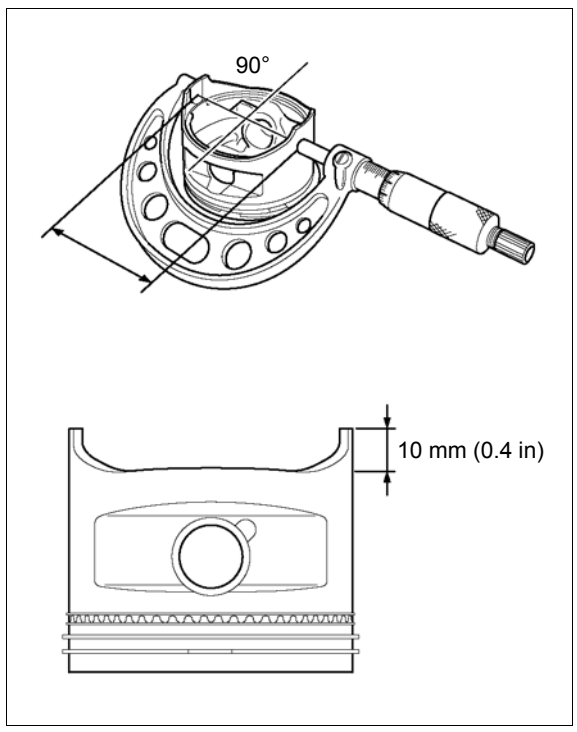
PISTON SKIRT O.D.

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

STANDARD:
67.965 – 67.985 mm (2.6758 – 2.6766 in)
SERVICE LIMIT:
67.845 mm (2.6711 in)

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

Inspect the cylinder sleeve I.D. (page 13-6) with this inspection.



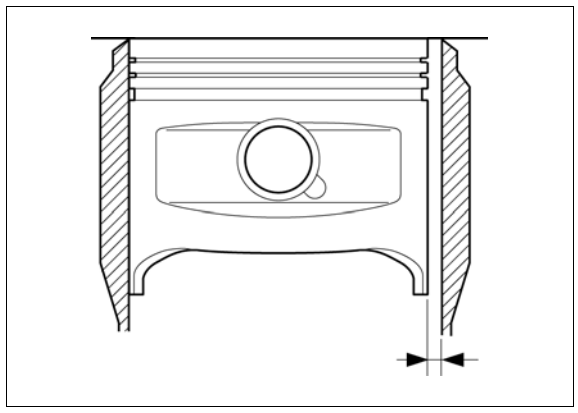
PISTON-TO-CYLINDER CLEARANCE

Subtract the piston skirt O.D. from the cylinder sleeve I.D. to obtain the piston-to-cylinder clearance.

STANDARD:
0.015 – 0.050 mm (0.0006 – 0.0020 in)
SERVICE LIMIT:
0.12 mm (0.005 in)

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

If the clearance is still more than the service limit with a new piston, replace the cylinder block.



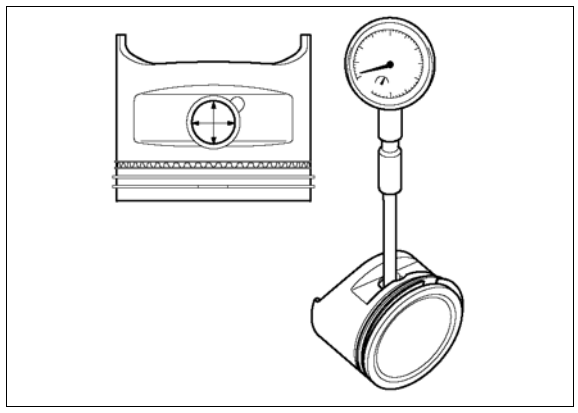
PISTON PIN BORE I.D.

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

STANDARD:
18.002 – 18.008 mm (0.7087 – 0.7090 in)
SERVICE LIMIT:
18.048 mm (0.7106 in)

If the measurement is less than the service limit, replace the piston (page 13-5).

Inspect the piston pin O.D. (page 13-7) with this inspection.



PISTON PIN O.D.

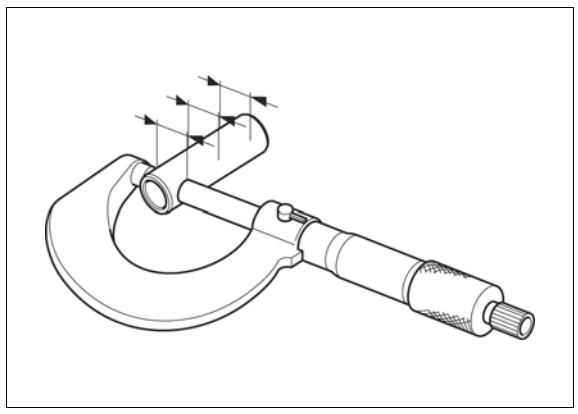
Measure and record the piston pin O.D. at three points (both ends and middle). Take the minimum reading to determine piston pin O.D.

STANDARD:
17.994 – 18.000 mm (0.7084 – 0.7087 in)
SERVICE LIMIT:
17.954 mm (0.7068 in)

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

Inspect the piston pin bore I.D. (page 13-7).

Inspect the connecting rod small end I.D. (page 13-9) with this inspection.



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.

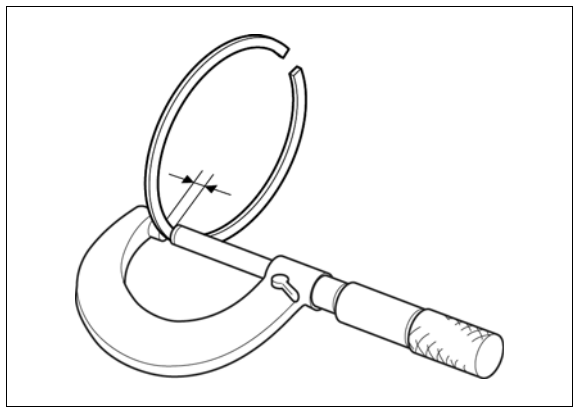
STANDARD:
0.002 – 0.014 mm (0.0001 – 0.0006 in)
SERVICE LIMIT:
0.06 mm (0.002 in)

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 a new piston pin, replace the piston.

PISTON RING WIDTH

Measure each piston ring width.

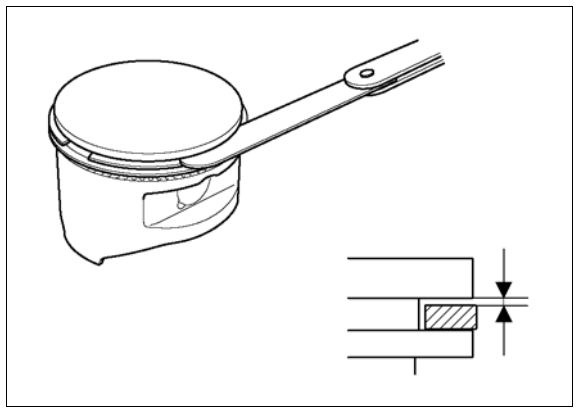


STANDARD:
Top: 0.95 – 0.97 mm (0.037 – 0.038 in)
Second: 0.94 – 0.96 mm (0.037 – 0.038 in)
SERVICE LIMIT:
Top: 0.93 mm (0.037 in)
Second: 0.92 mm (0.036 in)

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

PISTON RING SIDE CLEARANCE

Measure the clearance between each piston ring and ring groove of the piston using a thickness gauge.



STANDARD:
Top: 0.035 – 0.070 mm (0.0014 – 0.0028 in)
Second: 0.045 – 0.080 mm (0.0018 – 0.0032 in)
SERVICE LIMIT:
Top/second: 0.15 mm (0.006 in)

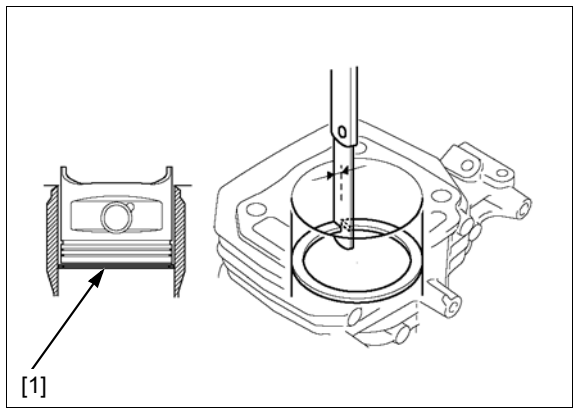
If any of the measurements is more than the service limit, inspect the piston ring width.

If the piston ring width is normal, replace the piston and reinspect the clearance.
If necessary, replace the piston rings (top, second, oil) as a set and reinspect the clearance.
If any of the measurements is still more than the service limit with a new piston rings, replace the piston.

PISTON RING END GAP

Before inspection, check whether the cylinder sleeve I.D. (page 13-6) is within the specification.

Measure each piston ring [1] end gap using a thickness gauge.



STANDARD:
Top: 0.200 – 0.350 mm (0.0079 – 0.0138 in)
Second: 0.350 – 0.550 mm (0.0138 – 0.0217 in)
Oil (side rail) 0.10 – 0.60 mm (0.004 – 0.024 in)
SERVICE LIMIT:
Top/second: 1.0 mm (0.04 in)
Oil (side rail) 1.0 mm (0.04 in)

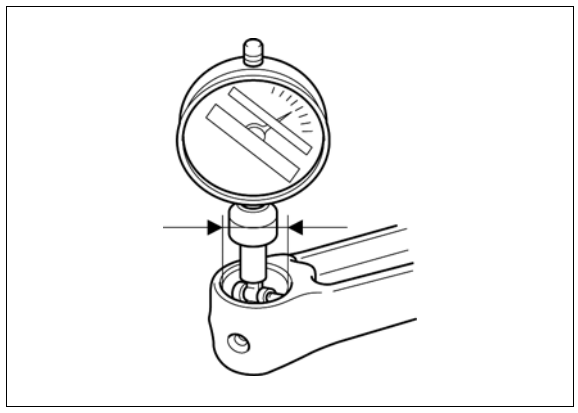
If any of the measurements is more than the service limit, replace the piston rings (top, second, oil) as a set.

CONNECTING ROD SMALL END I.D.

Measure the connecting rod small end I.D.

STANDARD:
18.005 – 18.020 mm (0.7089 – 0.7094 in)
SERVICE LIMIT:
18.07 mm (0.711 in)

If the measurement is more than the service limit, replace the connecting rod upper.



CONNECTING ROD BIG END I.D.

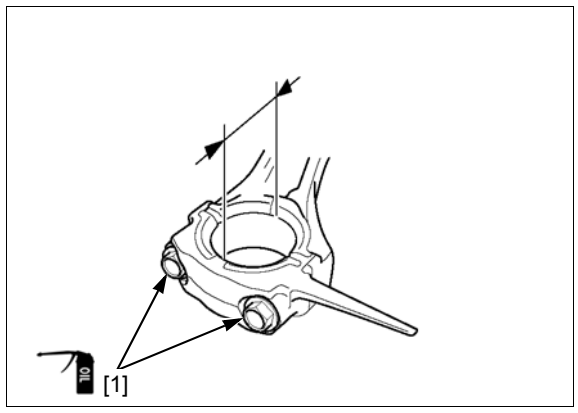
Set the connecting rod cap to the connecting rod upper.
Apply engine oil to the two connecting rod bolts [1] threads and seating surface.
Tighten the connecting rod bolts to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Measure the connecting rod big end I.D.

STANDARD:
30.020 – 30.033 mm (1.1819 – 1.1824 in)
SERVICE LIMIT:
30.066 mm (1.1837 in)

If the measurement is more than the service limit, replace the connecting rod upper and connecting rod cap.



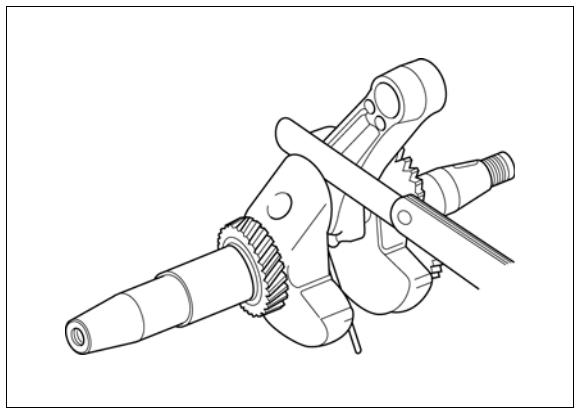
CONNECTING ROD BIG END SIDE CLEARANCE

Measure the clearance between the connecting rod big end and crankshaft using a thickness gauge.

STANDARD: 0.10 – 0.40 mm (0.004 – 0.016 in)
SERVICE LIMIT: 1.10 mm (0.043 in)

If the measurement is more than the service limit, replace the connecting rod upper, connecting rod cap and recheck the clearance.

If the clearance is still more than the service limit with a new connecting rod, replace the crankshaft.



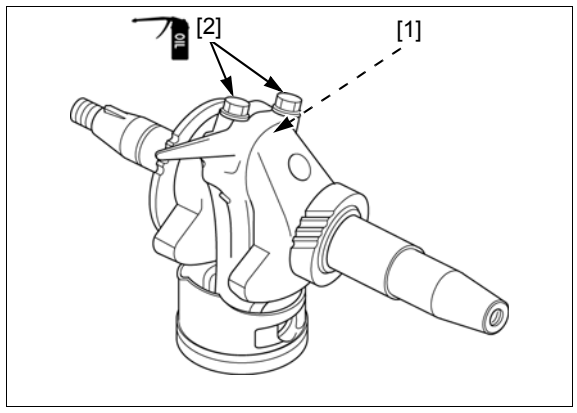
CONNECTING ROD BIG END OIL CLEARANCE

Clean all oil from the crankpin and connecting rod big end surface.

Place a piece of plastigauge [1] on the crankpin, install the connecting rod upper and the connecting rod lower. Apply engine oil to the connecting rod bolt [2] threads and seating surface.
Tighten the two connecting rod bolts to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

NOTE:
Do not rotate the crankshaft while the plastigauge is in place.



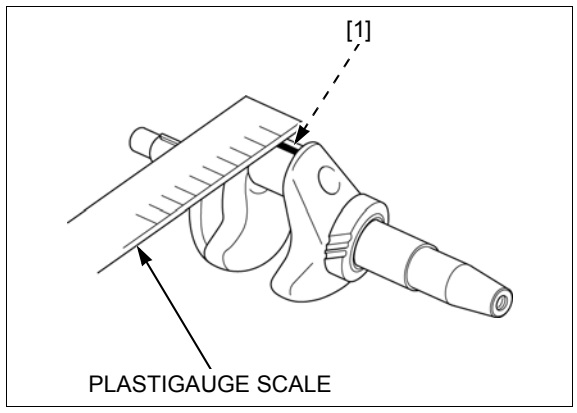
Remove the connecting rod and measure the plastigauge [1].

STANDARD:
0.040 – 0.063 mm (0.0016 – 0.0025 in)
SERVICE LIMIT:
0.12 mm (0.005 in)

If the clearance is more than the service limit, inspect the following:

– Connecting rod big end I.D. (page 13-9)
– Crankpin O.D. (page 13-10)

If the part that is not within the service limit replaces a new one, reinspect the clearance.

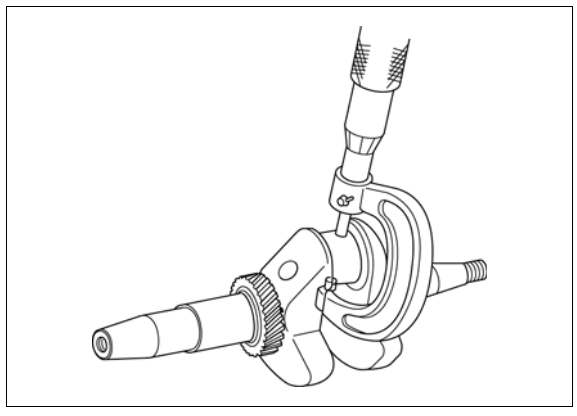


CRANKPIN O.D.

Measure the crankpin O.D. of the crankshaft.

STANDARD:
29.970 – 29.980 mm (1.1799 – 1.1803 in)
SERVICE LIMIT:
29.920 mm (1.1780 in)

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

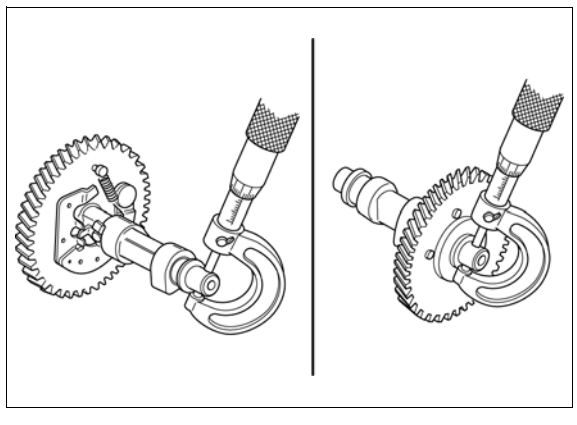


CAMSHAFT O.D.

Measure the camshaft O.D.

STANDARD:
13.966 – 13.984 mm (0.5498 – 0.5506 in)
SERVICE LIMIT:
13.916 mm (0.5479 in)

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

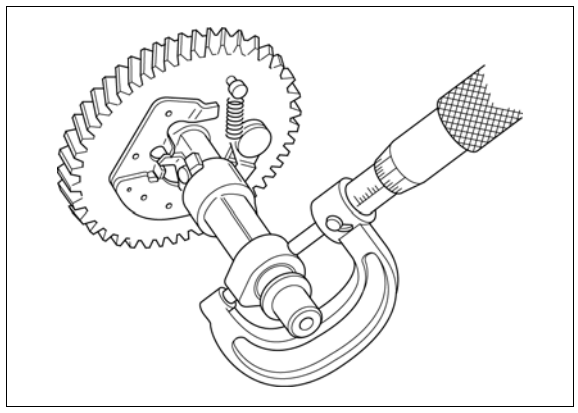


CAMSHAFT CAM HEIGHT

Measure the cam height of the camshaft.

STANDARD:
IN: 27.500 – 27.900 mm (1.0827 – 1.0984 in)
EX: 27.547 – 27.947 mm (1.0845 – 1.1003 in)
SERVICE LIMIT:
IN: 27.45 mm (1.081 in)
EX: 27.50 mm (1.083 in)

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



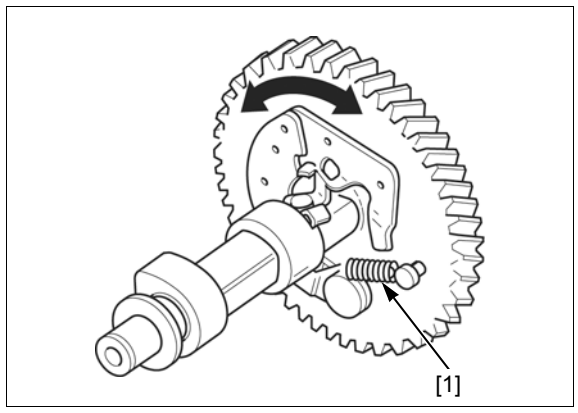
DECOMPRESSOR WEIGHT

Check for worn and weakened spring.

If the return spring [1] is worn or weakened, replace the weight return spring.

Check that the decompressor weight moves smoothly.

If the decompressor weight does not move correctly, replace the camshaft.

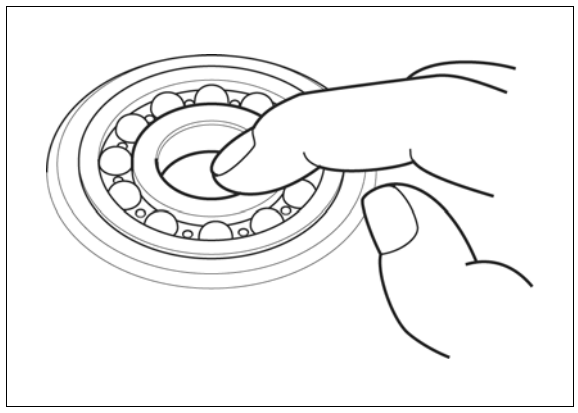


CRANKSHAFT BEARING

Clean the bearing with solvent and dry it thoroughly.

Turn the inner race of the crankshaft bearing with your finger and check for play.

If it is noisy or has excessive play, replace the crankshaft bearing (page 13-12).



CRANKSHAFT BEARING/OIL SEAL REPLACEMENT

CRANKSHAFT BEARING

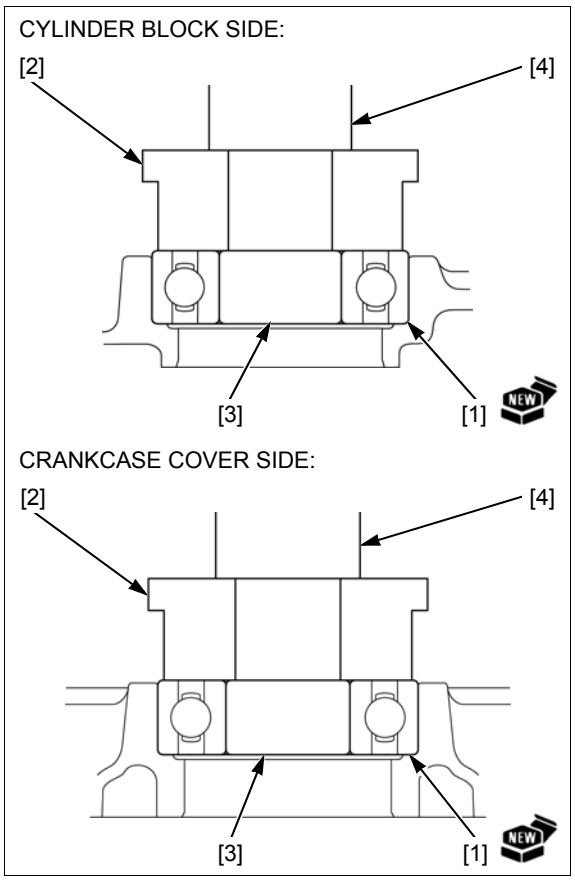
Cylinder block side: Drive out the bearing (6205) from the cylinder block (page 13-3).

Crankcase cover side: Drive out the bearing (6205) from the crankcase cover (page 13-3).

Drive a new bearing [1] with its marked side facing up until it is fully seated on the end using the special tools.

TOOLS:

Attachment, 52 x 55 mm [2]	**07746-0010400**
Pilot, 25 mm [3]	**07746-0040600**
Driver [4]	**07749-0010000**



CRANKSHAFT OIL SEAL

Cylinder block side: Remove the oil seal (25 x 41 x 6 mm) from the cylinder block (page 13-3).

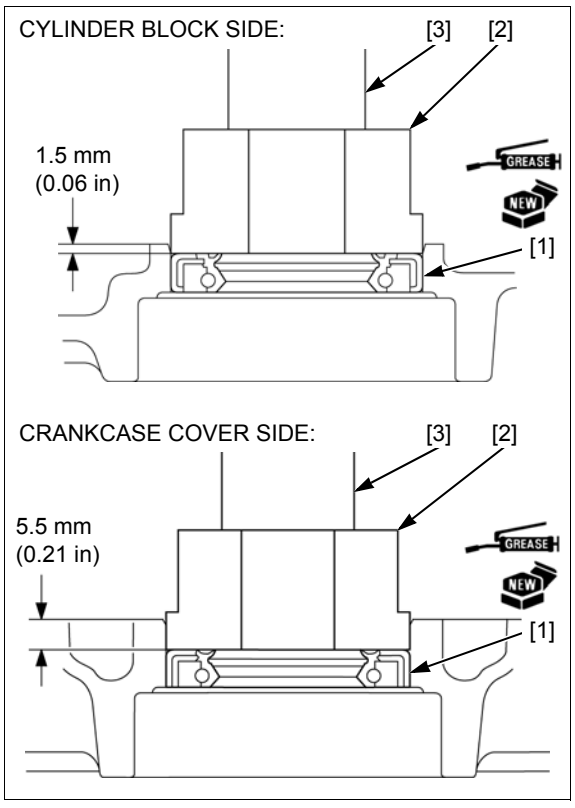
Crankcase cover side: Remove the oil seal (25 x 41 x 6 mm) from the crankcase cover (page 13-3).

Apply grease to the lips of a new oil seal (25 x 41 x 6 mm) [1].

Drive the oil seal in the position as shown with its flat surface side facing up, using the special tools.

TOOLS:

Attachment, 37 x 40 mm [2]	**07746-0010200**
Driver [3]	**07749-0010000**



14. HANDLE

HANDLE COLUMN ASSEMBLY REMOVAL/INSTALLATION

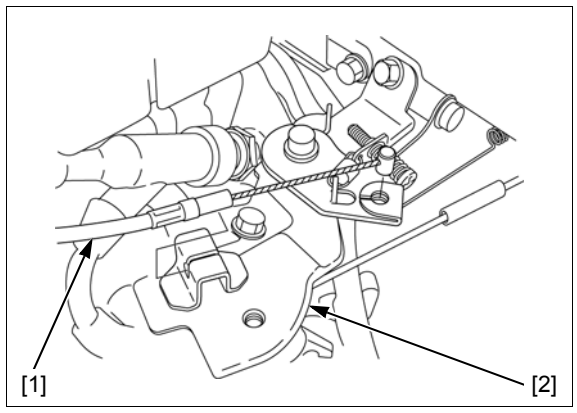
Remove the following:

– Air cleaner (page 5-4)
– Belt cover stay (page 11-2)

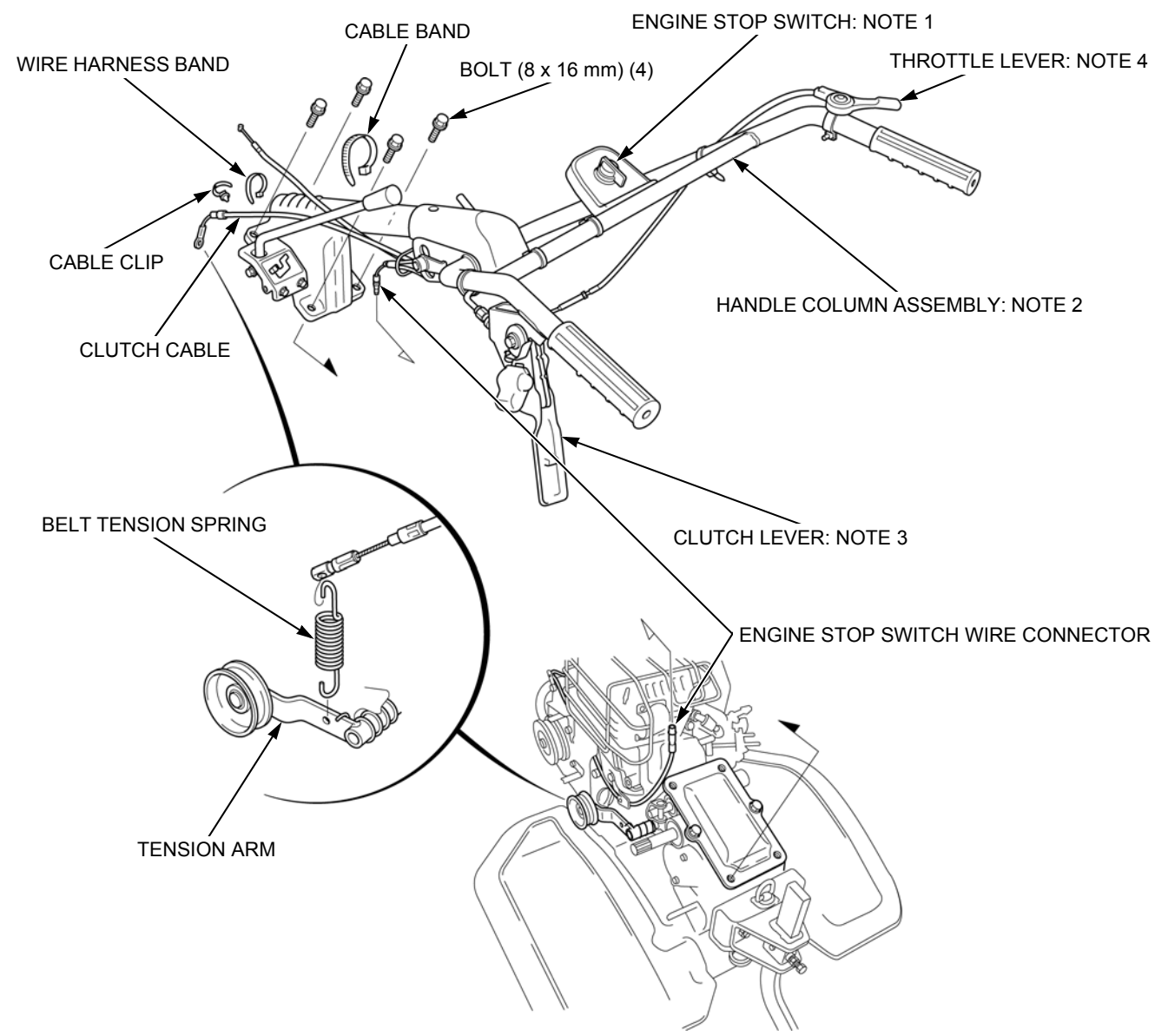
Move the throttle lever to the "LOW" position and disconnect the throttle cable [1] from the control base [2].

NOTE:

• When installation, route the wire harness properly (page 2-7).



SER, SE TYPE shown:



NOTE 1	ENGINE STOP SWITCH REMOVAL/INSTALLATION	page 7-8
NOTE 2	HANDLE COLUMN DISASSEMBLY/ASSEMBLY	page 14-3
NOTE 3	CLUTCH LEVER DISASSEMBLY/ASSEMBLY	page 14-5
NOTE 4	THROTTLE LEVER DISASSEMBLY/ASSEMBLY	page 14-7

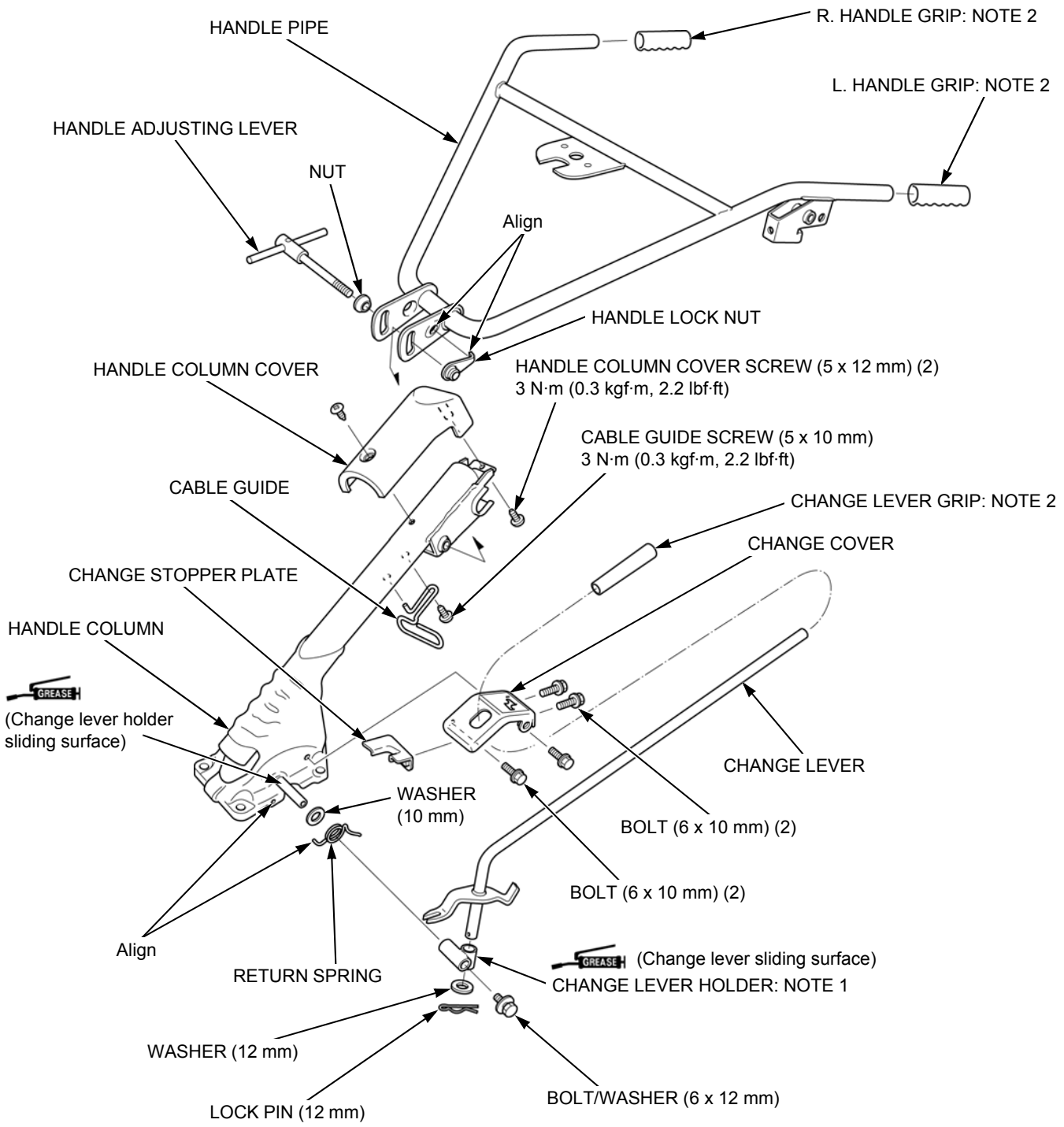
HANDLE COLUMN DISASSEMBLY/ASSEMBLY

SER, SE TYPE

Remove the handle column assembly (page 14-2).

Disassemble the following:

– Engine stop switch (page 7-8)
– Clutch lever (page 14-5)
– Throttle lever (page 14-7)



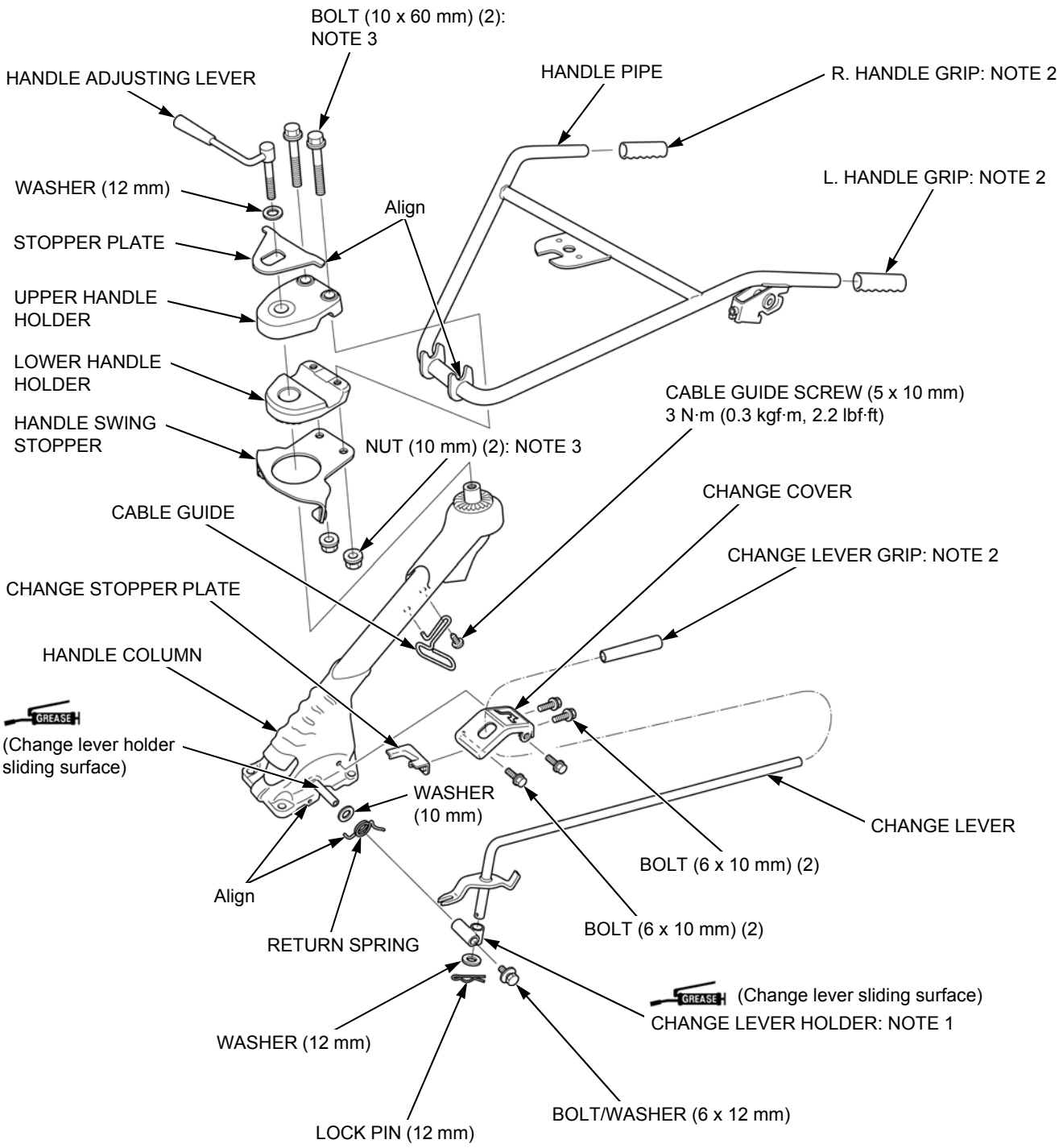
NOTE 1	When reassembly, install the long side against the handle column.	–
NOTE 2	When reassembly, apply ThreeBond® 1530C or equivalent to the inside.	–

DER, DE TYPE

Remove the handle column assembly (page 14-2).

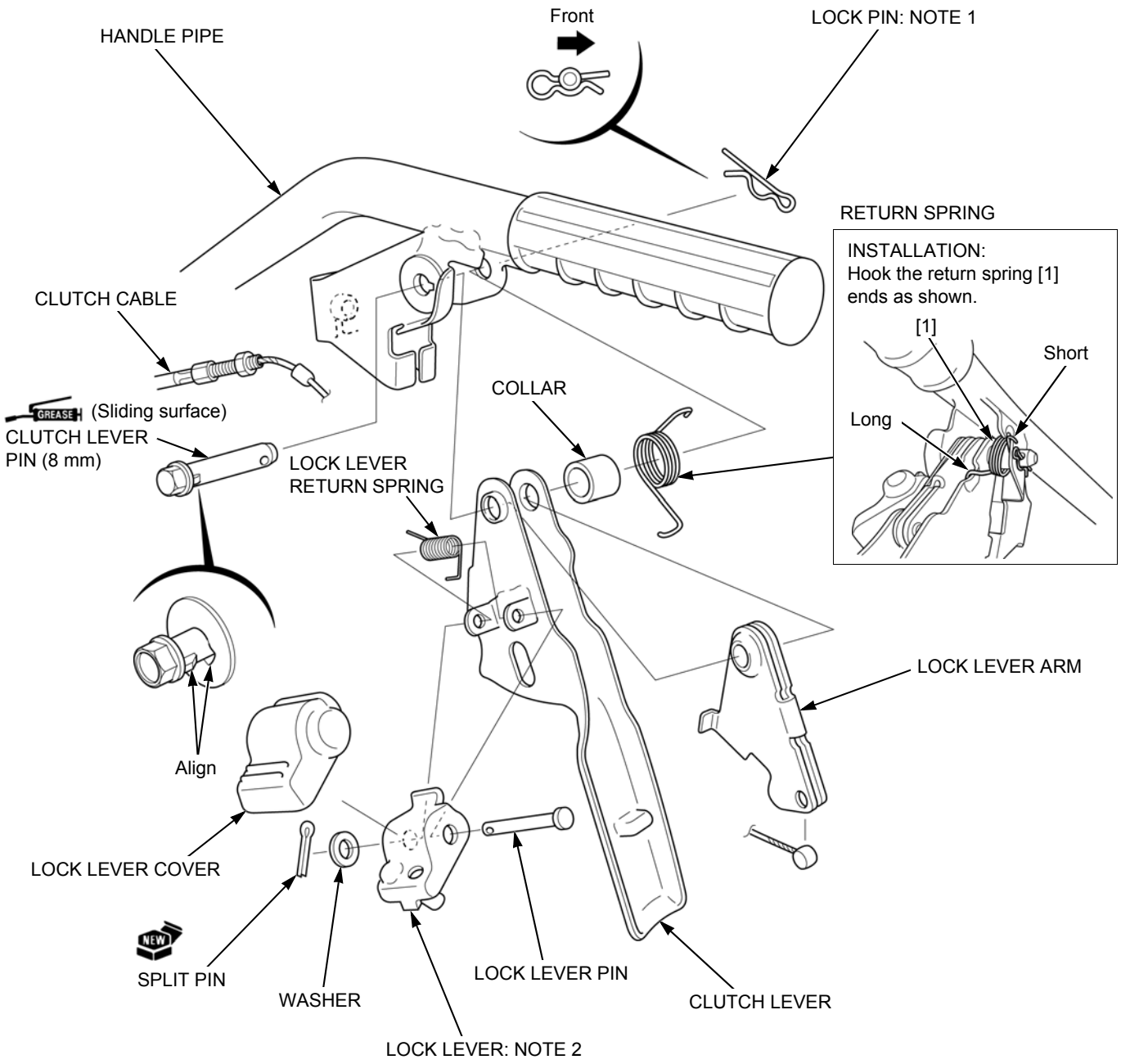
Disassemble the following:

– Engine stop switch (page 7-8)
– Clutch lever (page 14-5)
– Throttle lever (page 14-7)



NOTE 1	When reassembly, install the long side against the handle column.	–
NOTE 2	When reassembly, apply ThreeBond® 1530C or equivalent to the inside.	–
NOTE 3	Tighten the bolts first, then tighten the nuts.	–

CLUTCH LEVER DISASSEMBLY/ASSEMBLY



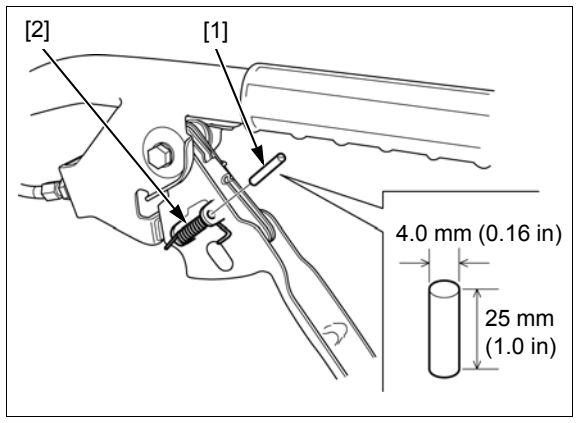
NOTE 1	Note the installation direction.	–
NOTE 2	LOCK LEVER INSTALLATION	page 14-6

LOCK LEVER INSTALLATION

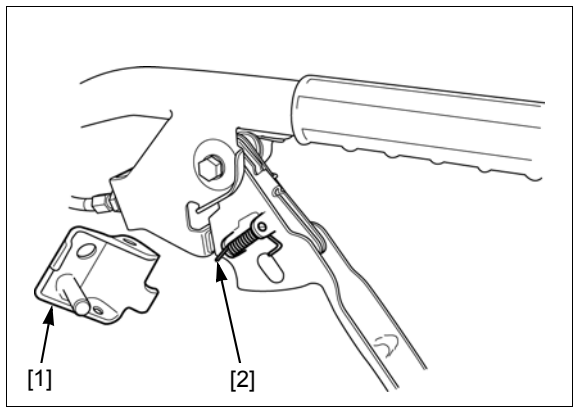
Before installation, make the special pin [1] as shown.

Set the lock lever return spring [2] onto the clutch lever as shown.

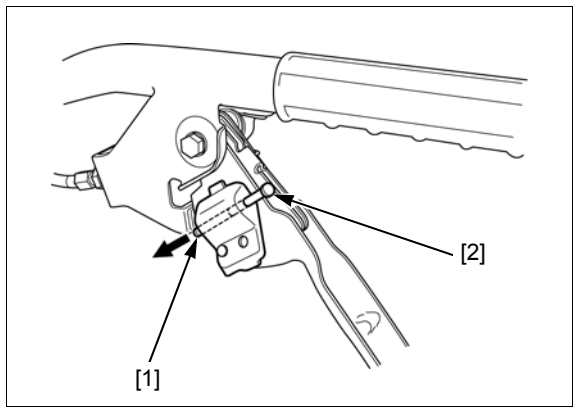
Insert the special pin to the clutch lever holes and return spring.



Set the lock lever [1] over the return spring end [2].



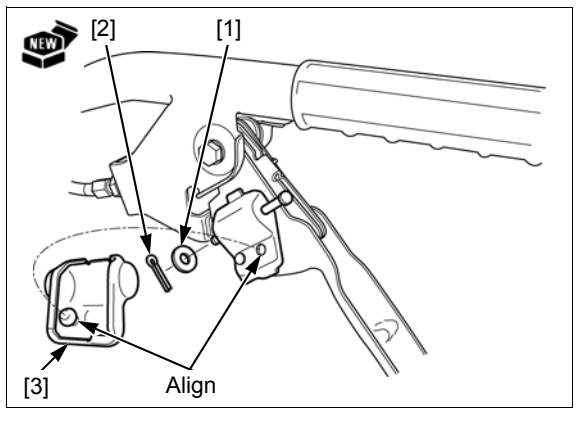
Remove the special pin [1] by pushing the lock lever pin [2].



Install the washer [1] and a new split pin [2].

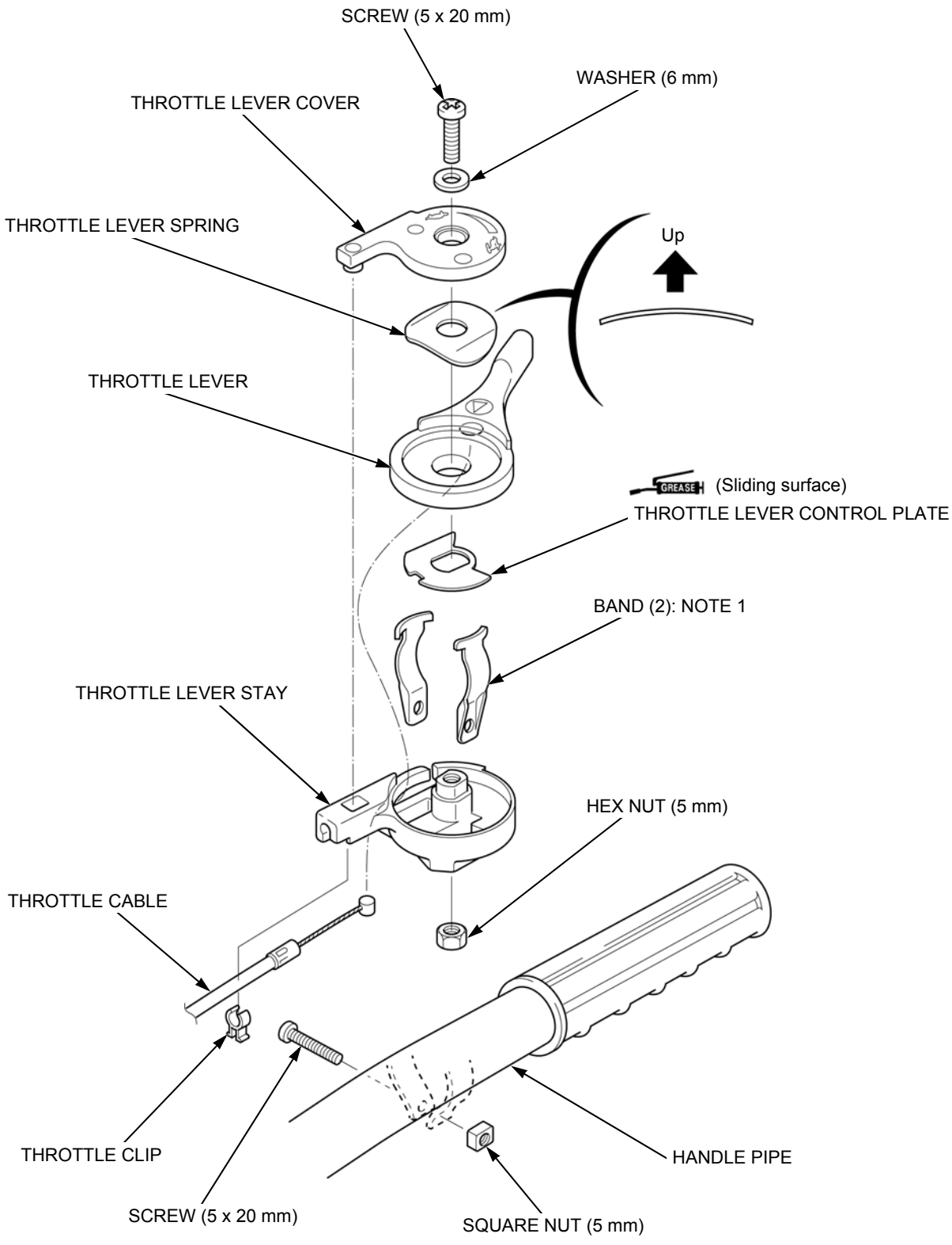
Install the lock lever cover [3] by align it the boss to the hole of the lock lever.

After installation, check for operation of the lock lever smoothly.



THROTTLE LEVER DISASSEMBLY/ASSEMBLY

After reassembly, perform the "THROTTLE CABLE CHECK/ADJUSTMENT" (page 3-9).

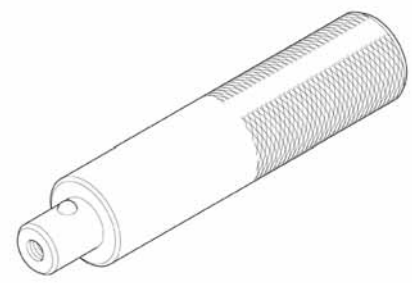
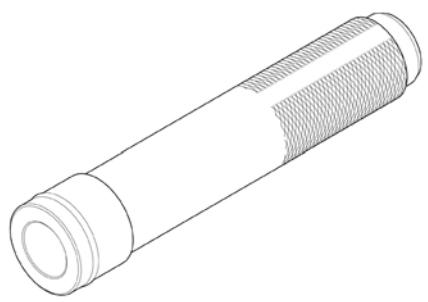


NOTE 1	When reassembly, position the bands to the specified range.	page 2-7

MEMO

15. ROTOR/TRANSMISSION

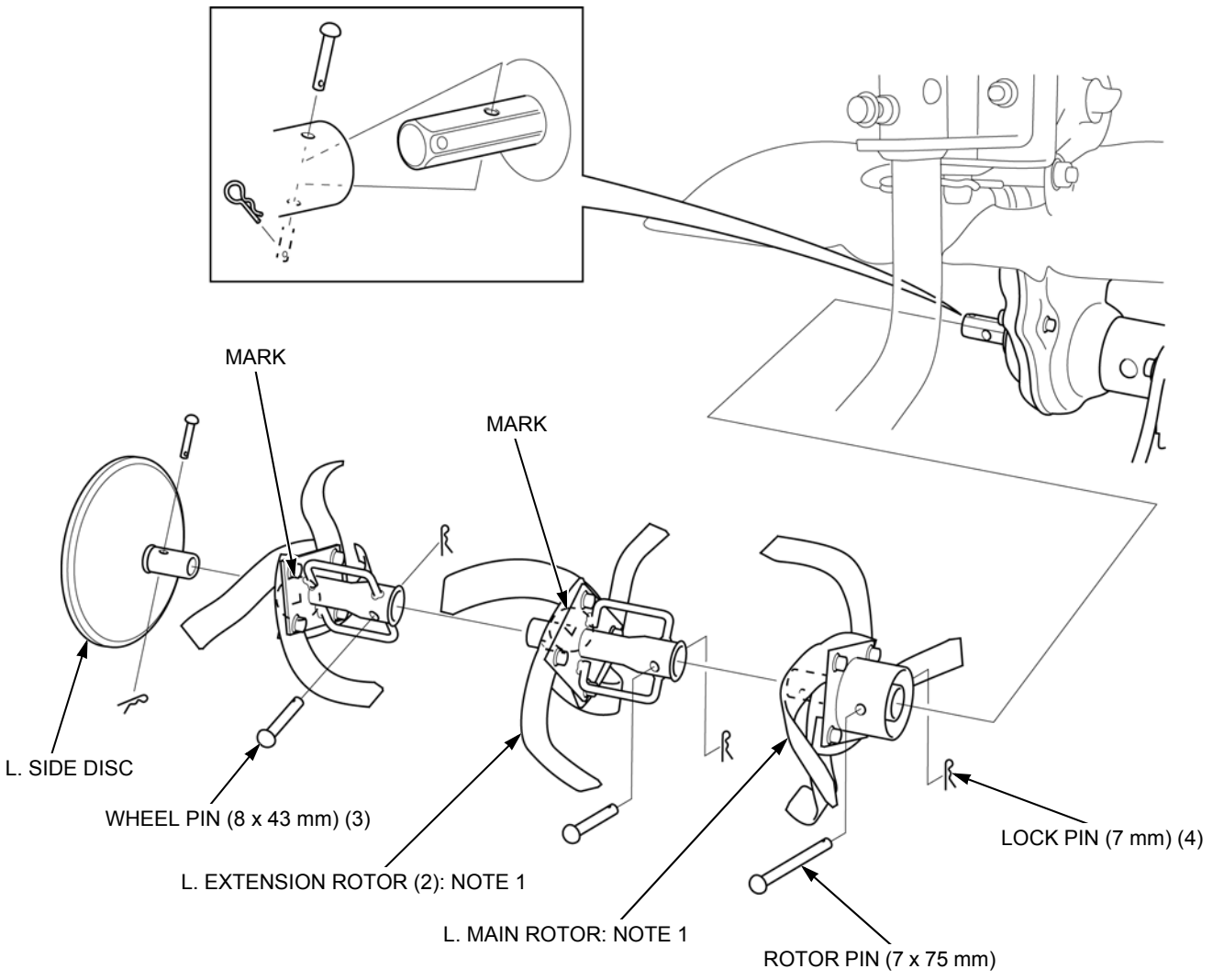
TOOLS

Pilot, 22 mm 07746-0041000 	Pilot, 28 mm 07746-0041100 	Driver 07749-0010000 
Driver, 22 mm I.D. 07746-0020100 		

ROTOR REMOVAL/INSTALLATION (SER, DER TYPE)

NOTE:
- The right side rotors and left side rotors can be removed in the same manner.
- After installation, make sure that the right and left rotors are symmetry (page 15-6).

L. ROTOR shown:



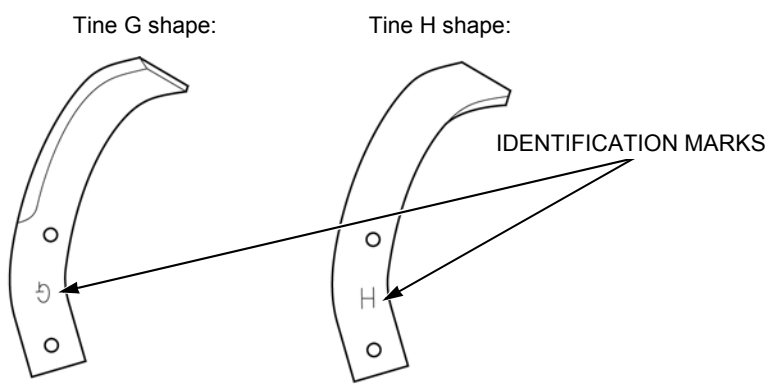
NOTE 1	ROTOR DISASSEMBLY/ASSEMBLY (SER, DER TYPE)	page 15-4

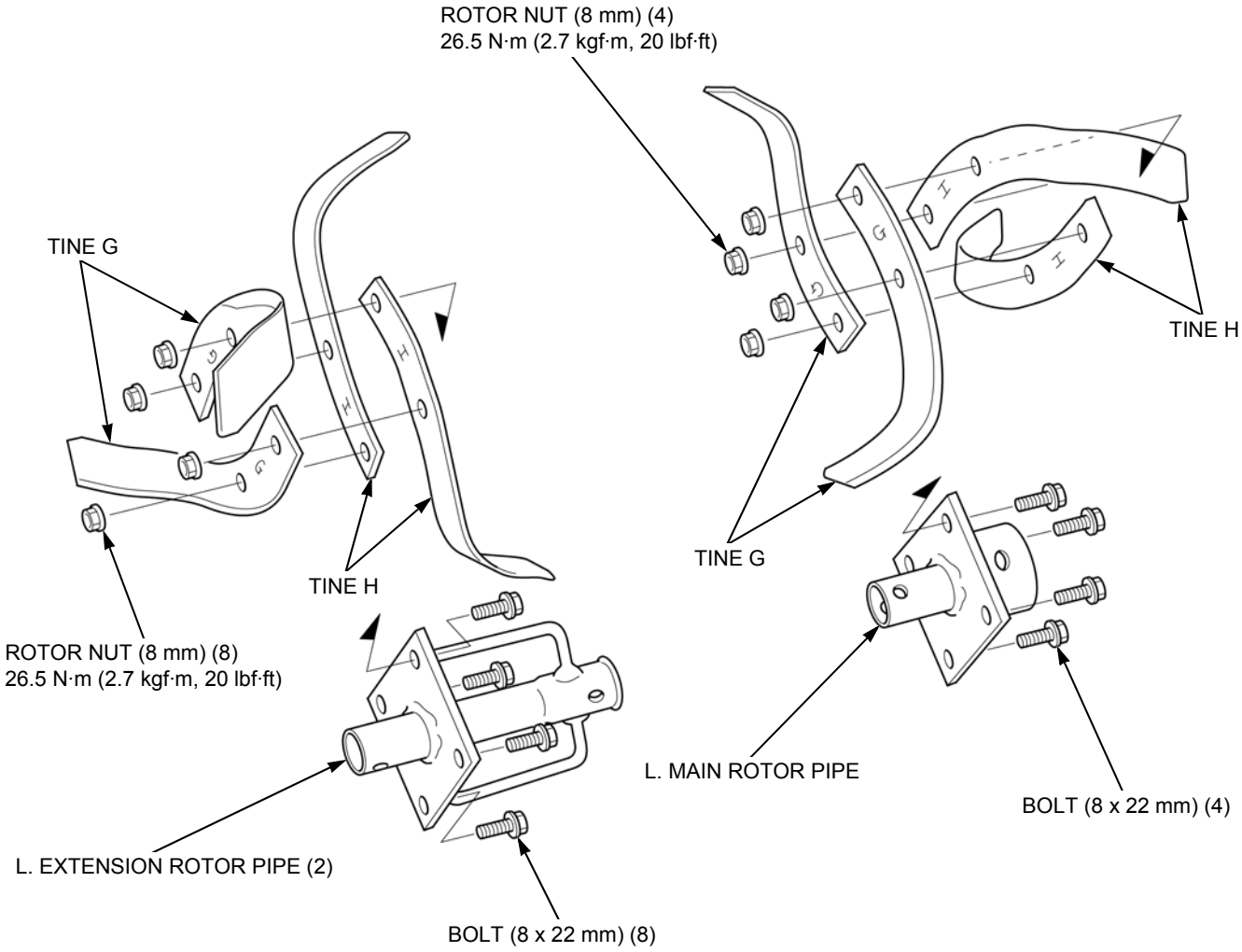
ROTOR DISASSEMBLY/ASSEMBLY (SER, DER TYPE)

L. ROTOR

NOTE:

- When reassembly, assemble the tines with its identification marks ("G" and "H") facing outward.

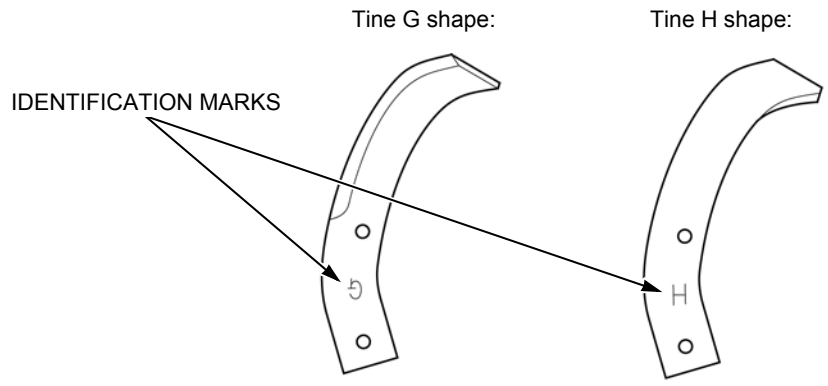


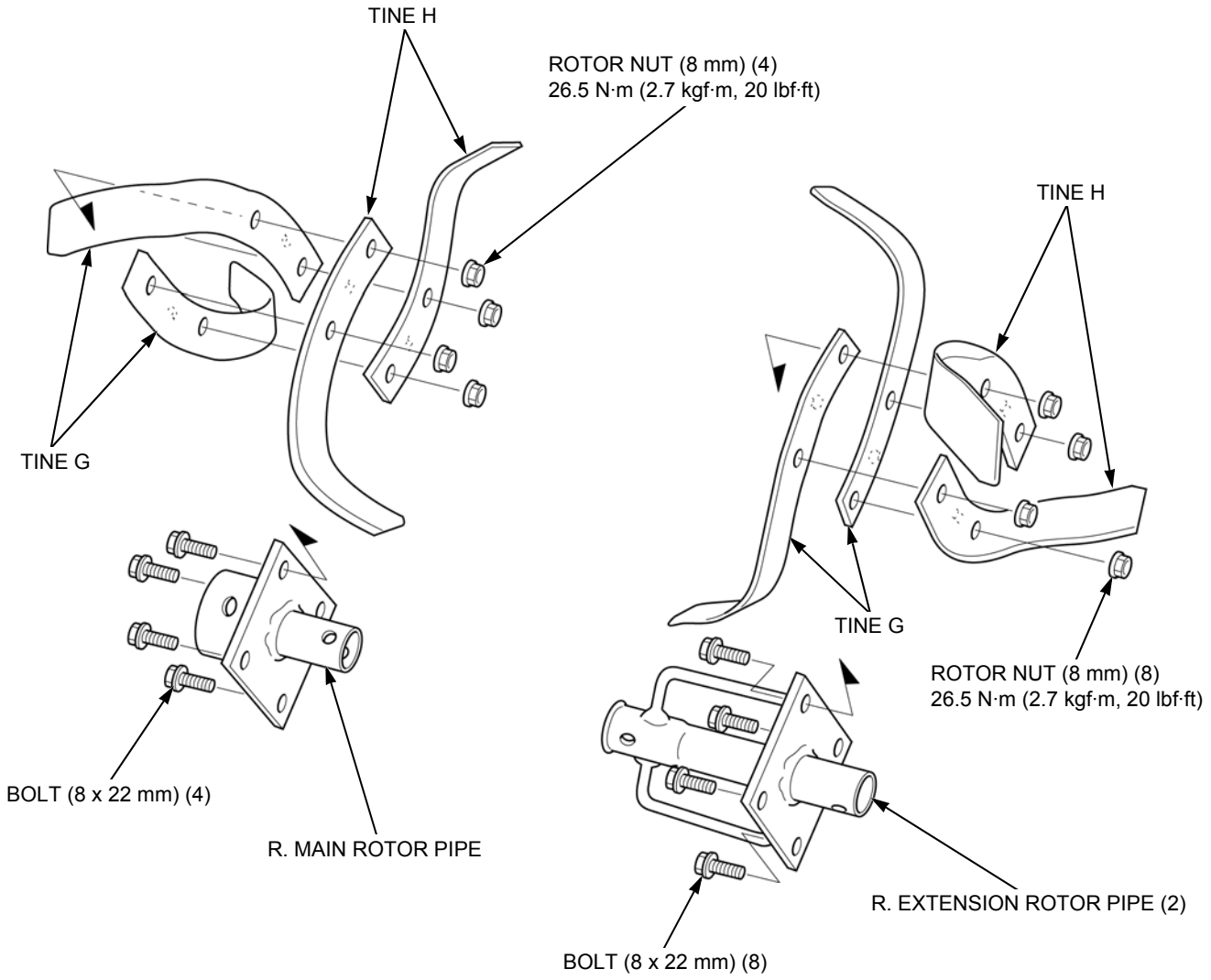


R. ROTOR

NOTE:

- When reassembly, assemble the tines with its identification marks ("G" and "H") facing inward.



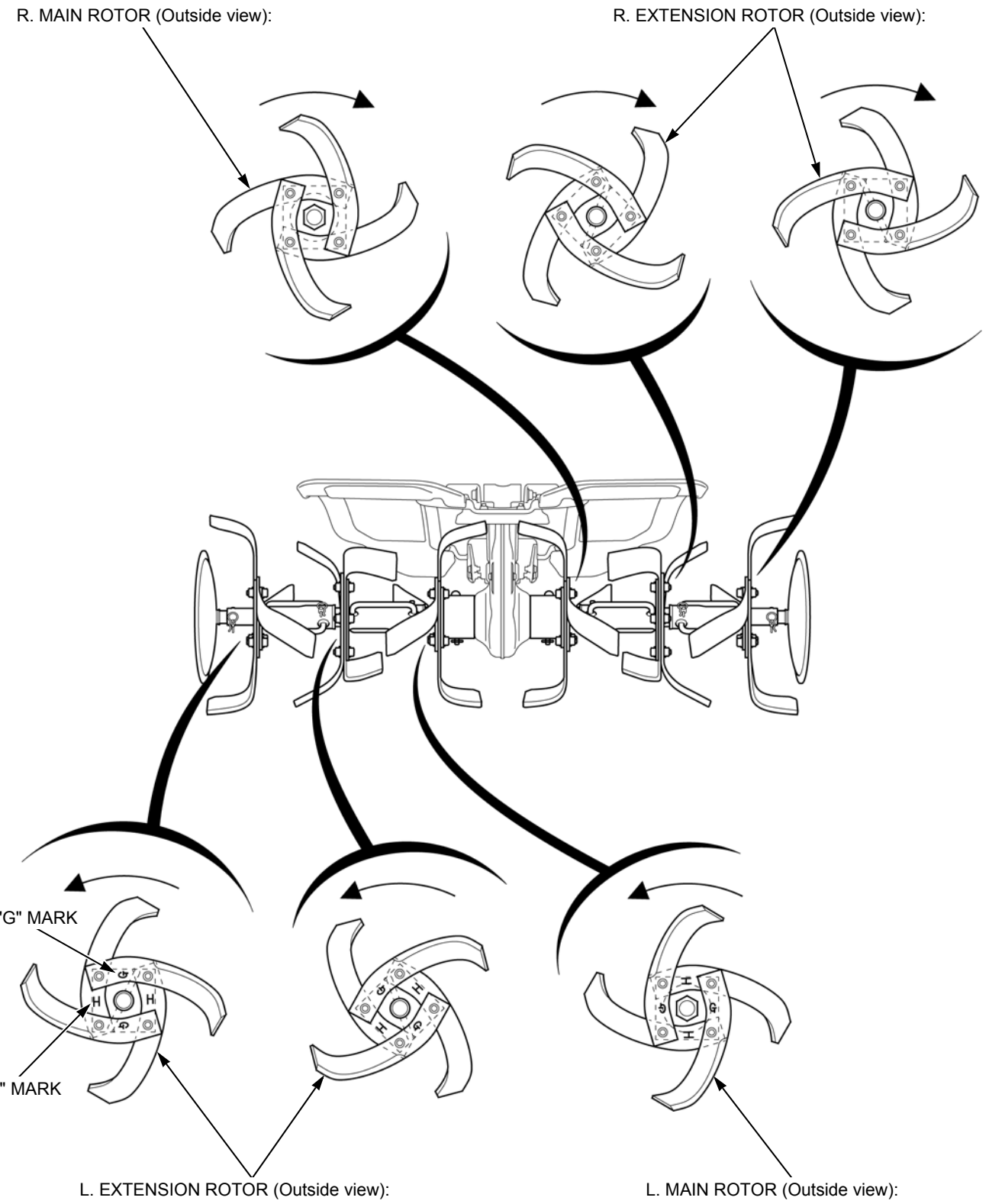


ROTOR ASSEMBLY CHECK (SER, DER TYPE)

Check that the tines are assembled properly as shown.

NOTE:

- The right rotors and left rotors are symmetry.



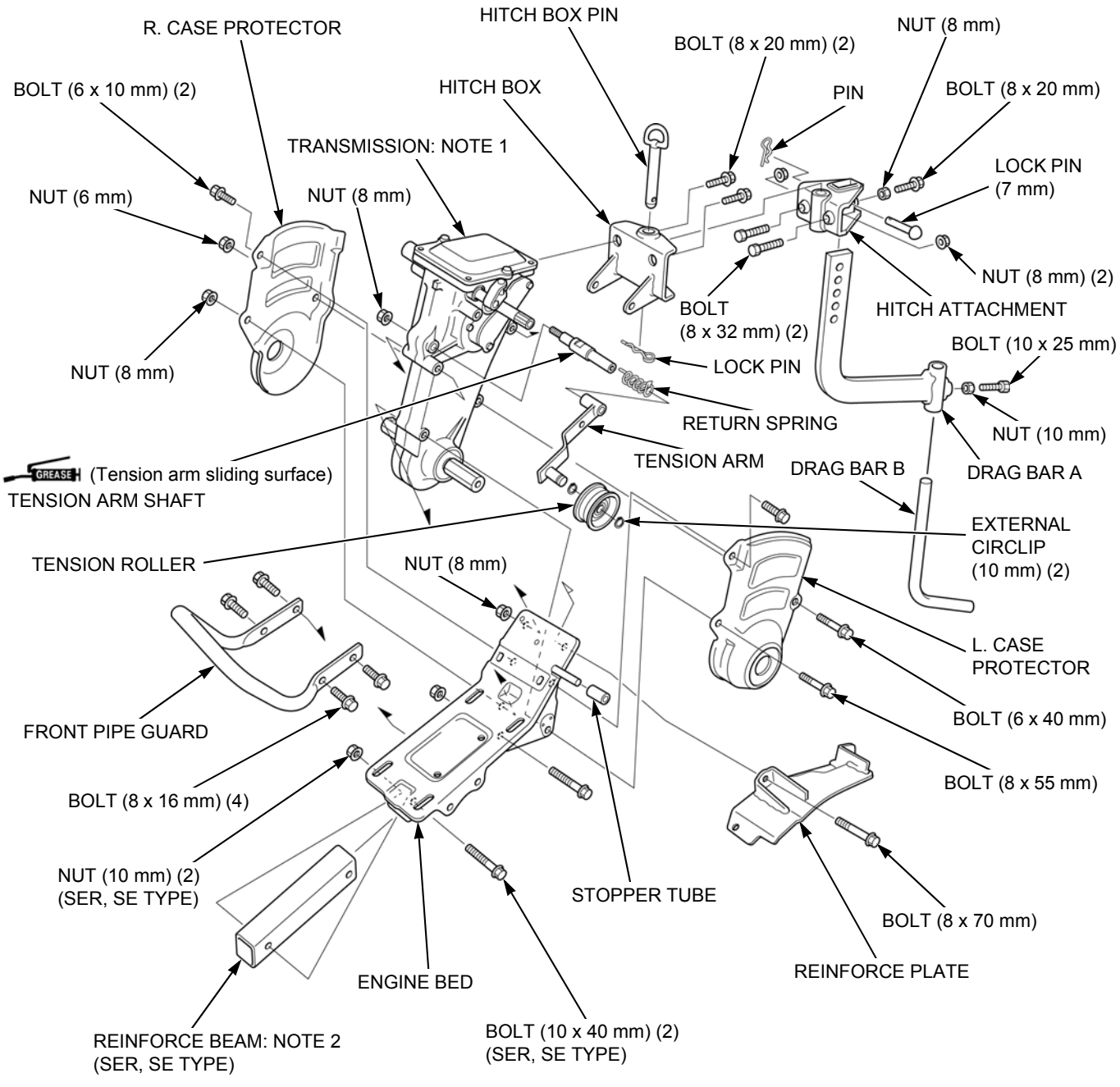
TRANSMISSION REMOVAL/INSTALLATION

Remove the following:

– Handle column assembly (page 14-2)
– Engine (page 10-2)
– Rotor (SER, DER TYPE) (page 15-3)
– Fender (page 15-13)
– Front wheel (DER, DE TYPE) (page 15-14)

NOTE:

• After installation, check the transmission oil level if the transmission is disassembled (page 3-6).



NOTE 1	TRANSMISSION DISASSEMBLY/ASSEMBLY	page 15-8
NOTE 2	Install the reinforce beam with the end with longer distance from the hole facing the front of the product.	–

TRANSMISSION DISASSEMBLY/ASSEMBLY

COUNTERSHAFT/INPUT SHAFT (SER, SE TYPE)

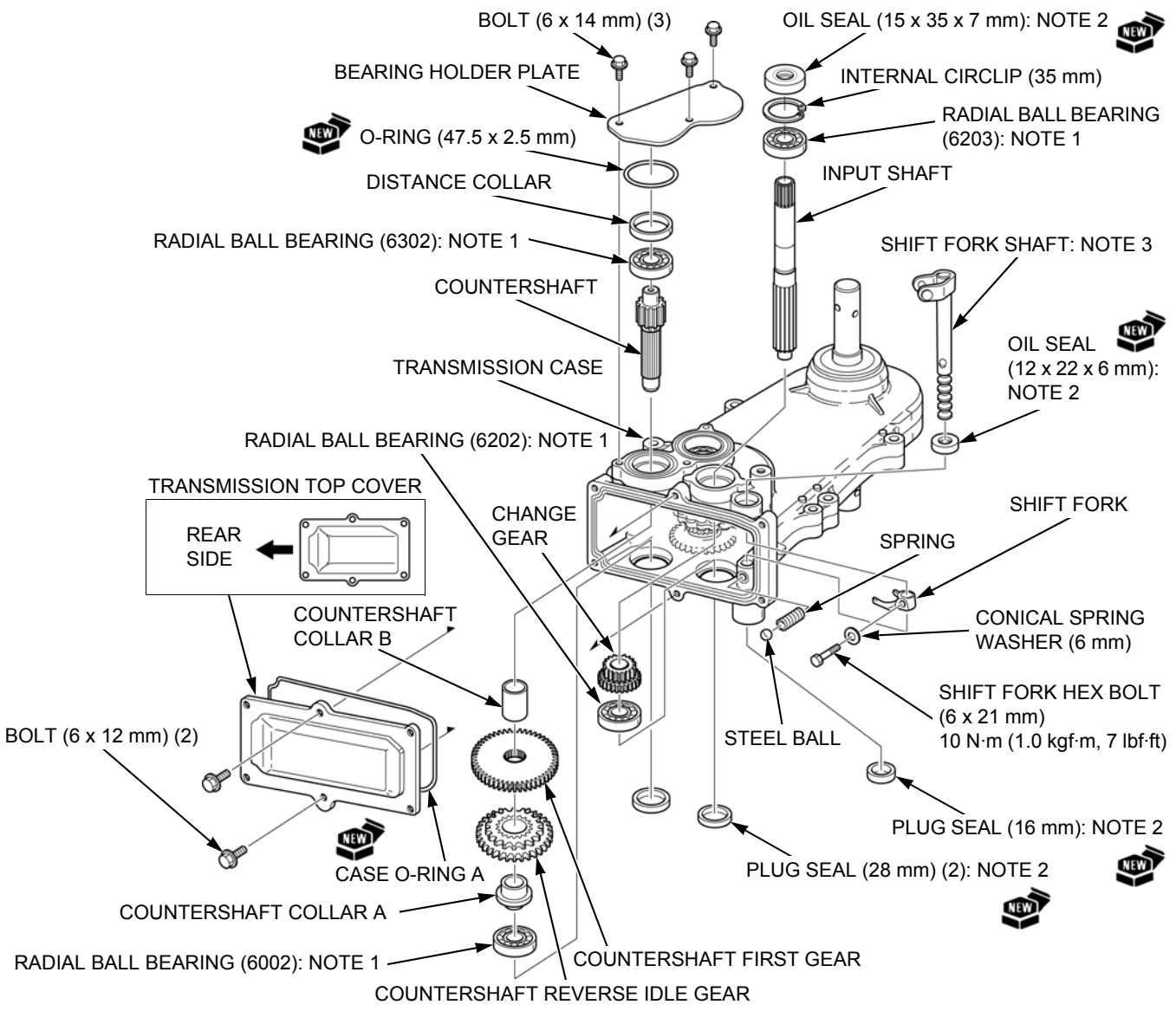
NOTE:

- The transmission case cannot be separated. For ease of transmission disassembly/reassembly, turn the transmission case as shown in the figure.
- When assembling the transmission, position all gears in the case and then insert the shafts.
- The gears on the final shaft and countershaft and driven sprocket can be removed without removing the input shaft.

Remove the transmission (page 15-7).

Place a suitable counter.
Remove the transmission top cover and drain the transmission oil into it.

After assembly, fill the recommended transmission oil (page 15-12).



NOTE 1	RADIAL BALL BEARING INSPECTION	page 15-11
NOTE 2	PLUG SEAL/OIL SEAL/WATER SEAL INSTALLATION	page 15-11
NOTE 3	SHIFT FORK SHAFT INSTALLATION	page 15-12

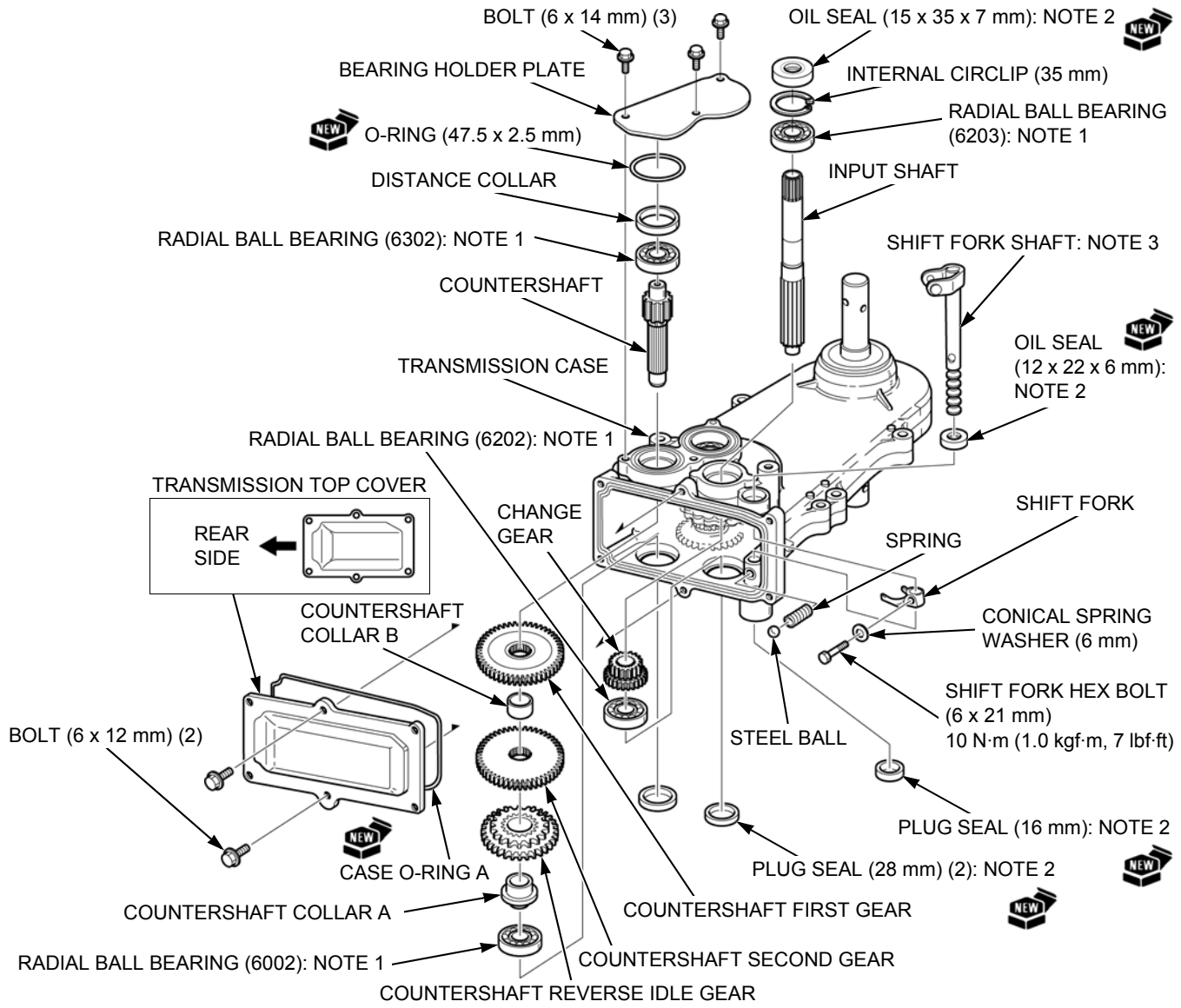
COUNTERSHAFT/INPUT SHAFT (DER, DE TYPE)

NOTE:
- The transmission case cannot be separated. For ease of transmission disassembly/reassembly, turn the transmission case as shown in the figure.
- When assembling the transmission, position all gears in the case and then insert the shafts.
- The gears on the final shaft and countershaft and driven sprocket can be removed without removing the input shaft.

Remove the transmission (page 15-7).

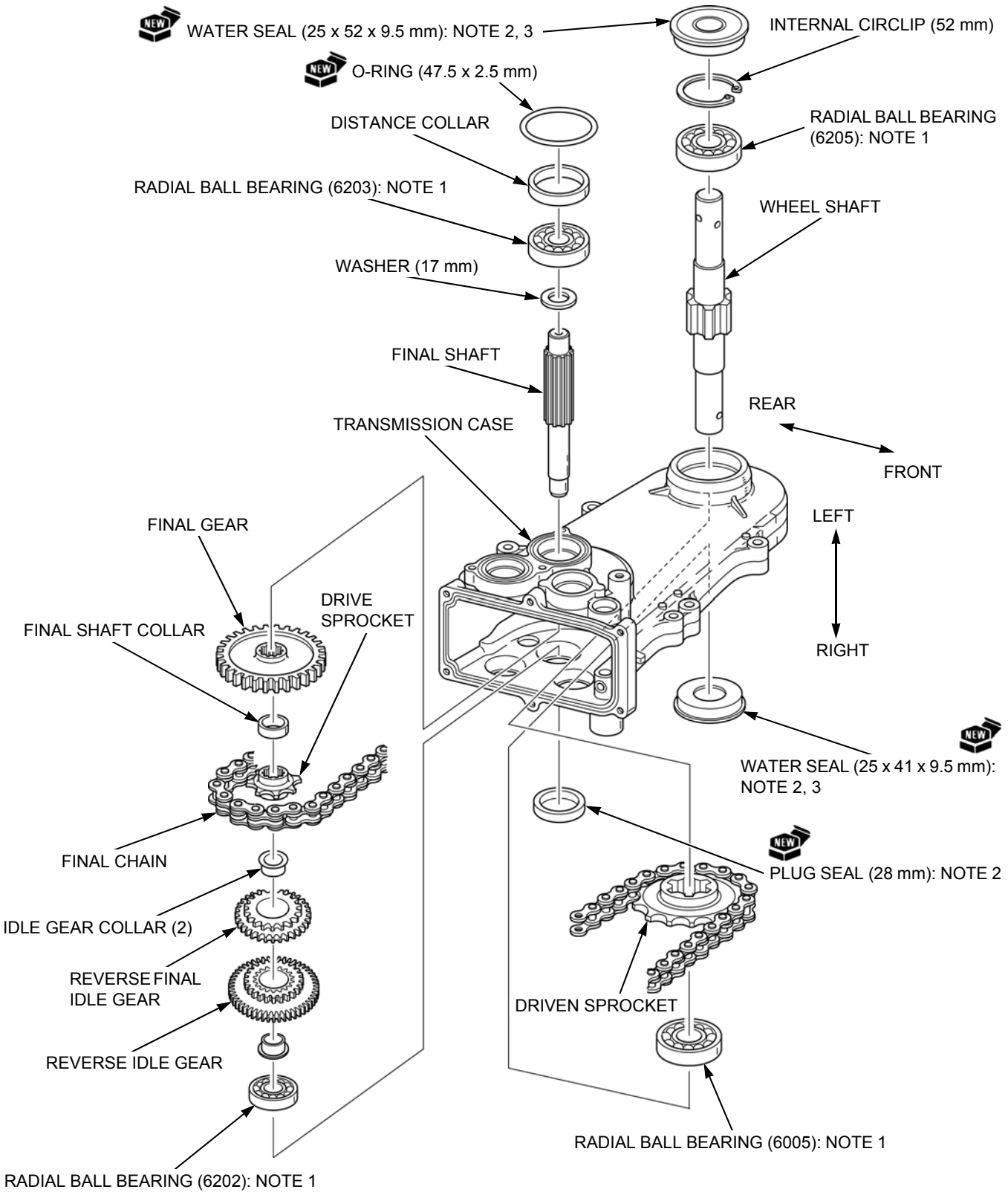
Place a suitable counter.
Remove the transmission top cover and drain the transmission oil into it.

After assembly, fill the recommended transmission oil (page 15-12).



NOTE 1	RADIAL BALL BEARING INSPECTION	page 15-11
NOTE 2	PLUG SEAL/OIL SEAL/WATER SEAL INSTALLATION	page 15-11
NOTE 3	SHIFT FORK SHAFT INSTALLATION	page 15-12

FINAL SHAFT/WHEEL SHAFT



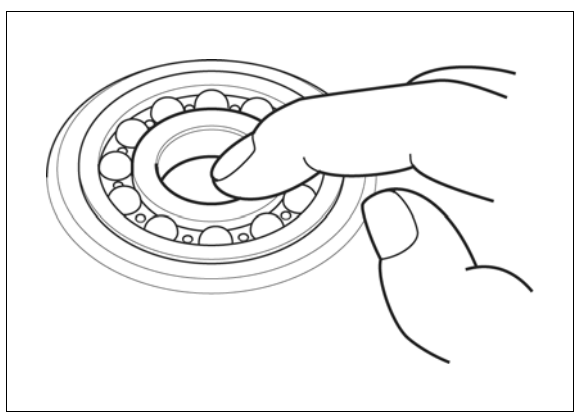
NOTE 1	RADIAL BALL BEARING INSPECTION	page 15-11
NOTE 2	PLUG SEAL/OIL SEAL/WATER SEAL INSTALLATION	page 15-11
NOTE 3	When disassembly, take care not to damage the transmission case and wheel shaft.	–

RADIAL BALL BEARING INSPECTION

Clean the bearing with solvent and dry it thoroughly.

Turn the inner race or outer race of the radial ball bearing with your finger and check for play.

If it is noisy or has excessive play, replace the radial ball bearing (page 15-8).



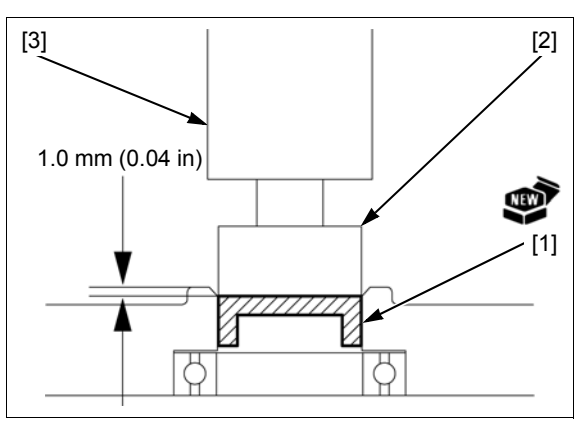
PLUG SEAL/OIL SEAL/WATER SEAL INSTALLATION

PLUG SEAL (28 mm)

Drive a new plug seal (28 mm) [1] from outside until it is flush with the transmission case surface by using the special tools.

TOOLS:

Pilot, 28 mm [2]	**07746-0041100**
Driver [3]	**07749-0010000**

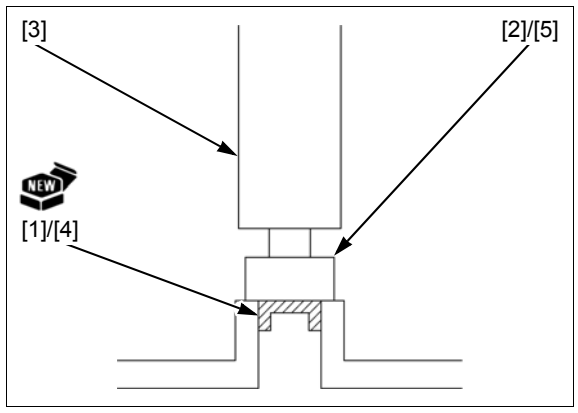


PLUG SEAL (16 mm)/OIL SEAL (12 x 22 x 6 mm)

Drive a new plug seal (16 mm)/oil seal (12 x 22 x 6 mm) from outside until it is flush with the transmission case surface by using the special tools.

TOOLS:

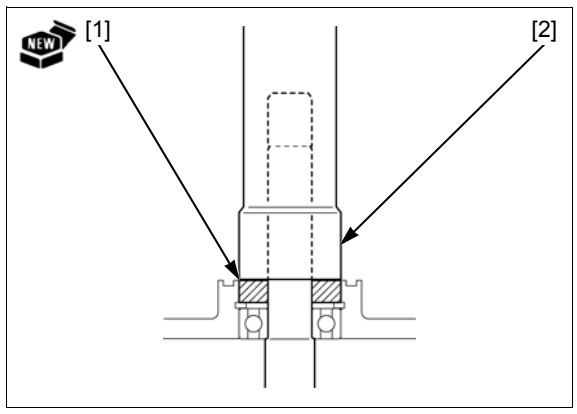
Plug seal (16 mm) [1]:	
Pilot, 22 mm [2]	**07746-0041000**
Driver [3]	**07749-0010000**
Oil seal (12 x 22 x 6 mm) [4]:	
Pilot, 28 mm [5]	**07746-0041100**
Driver	**07749-0010000**



OIL SEAL (15 x 35 x 7 mm)

Drive a new oil seal (15 x 35 x 7 mm) [1] from outside until it is flush with the transmission case surface by using the special tools.

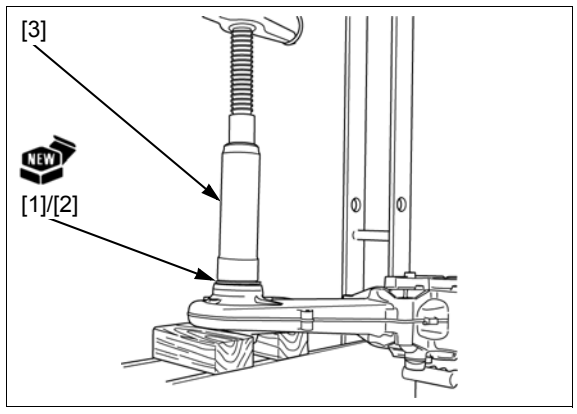
TOOL:
Driver, 22 mm I.D. [2] 07746-0020100



WATER SEAL (25 x 52 x 9.5 mm)/(25 x 41 x 9.5 mm)

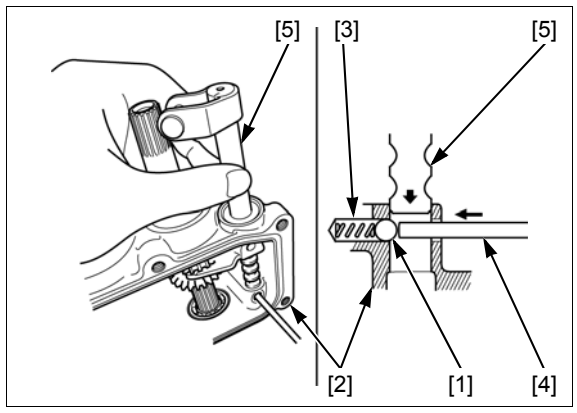
Install a new water seal (25 x 52 x 9.5 mm) [1]/water seal (25 x 41 x 9.5 mm) [2] until it is fully seated by using the special tool and hydraulic press.

TOOL:
Driver, 22 mm I.D. [3] 07746-0020100



SHIFT FORK SHAFT INSTALLATION

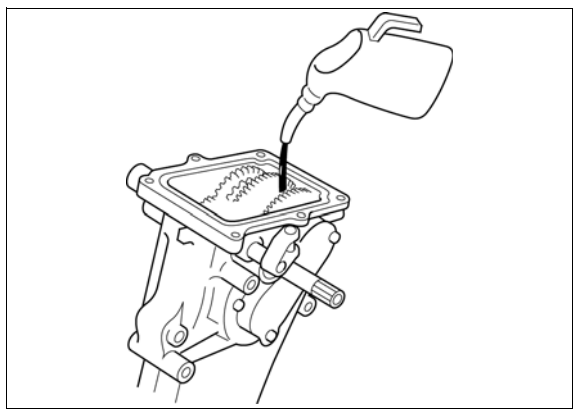
Push the steel ball [1] into the transmission case [2] against the spring [3] with the suitable rod [4] and insert the shift fork shaft [5].



TRANSMISSION OIL FILLING

Fill the specified amount of recommended transmission oil into the transmission case.

RECOMMENDED TRANSMISSION OIL:
SAE 10W-30
API service classification SE or higher
TRANSMISSION OIL CAPACITY:
0.95 liter (1.00 US qt, 0.84 Imp qt)



FENDER REMOVAL/INSTALLATION

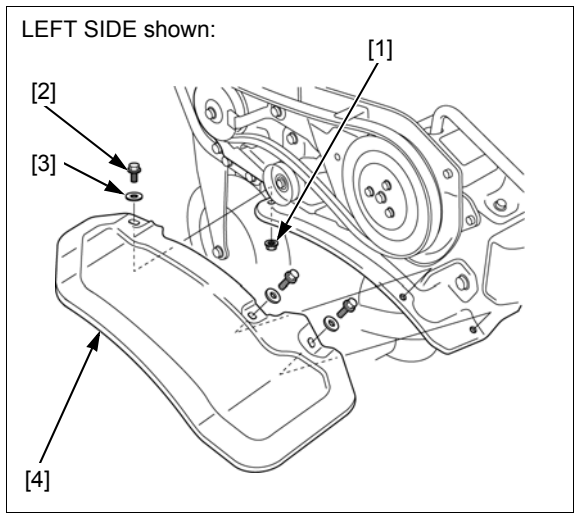
SUB FENDER REMOVAL/INSTALLATION

Left side only: Remove the belt cover (page 11-2).

Remove the nut (6 mm) [1], bolts (6 x 12 mm) [2] and washers [3].

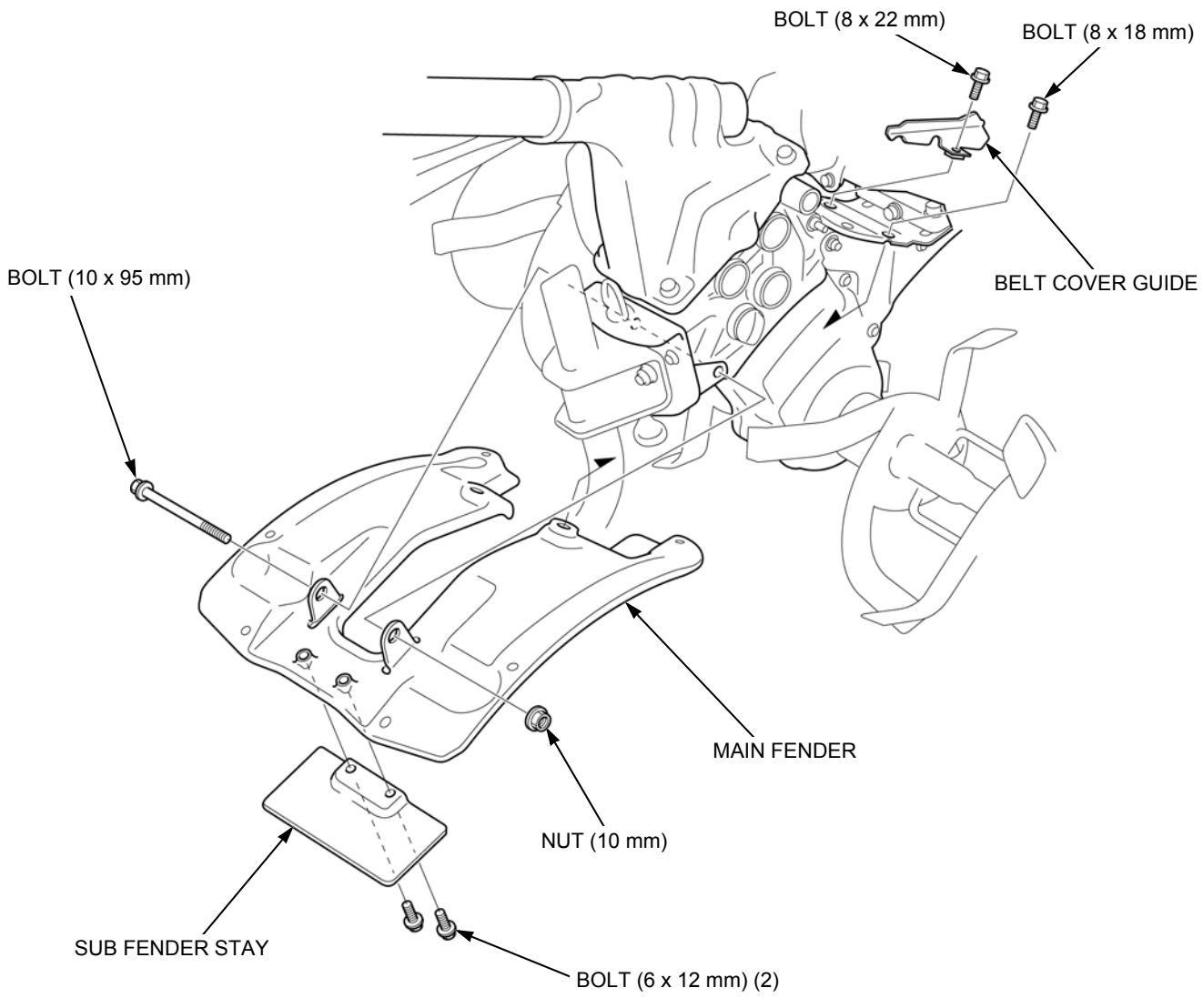
Remove the sub fender [4].

Installation is in the reverse order of removal.

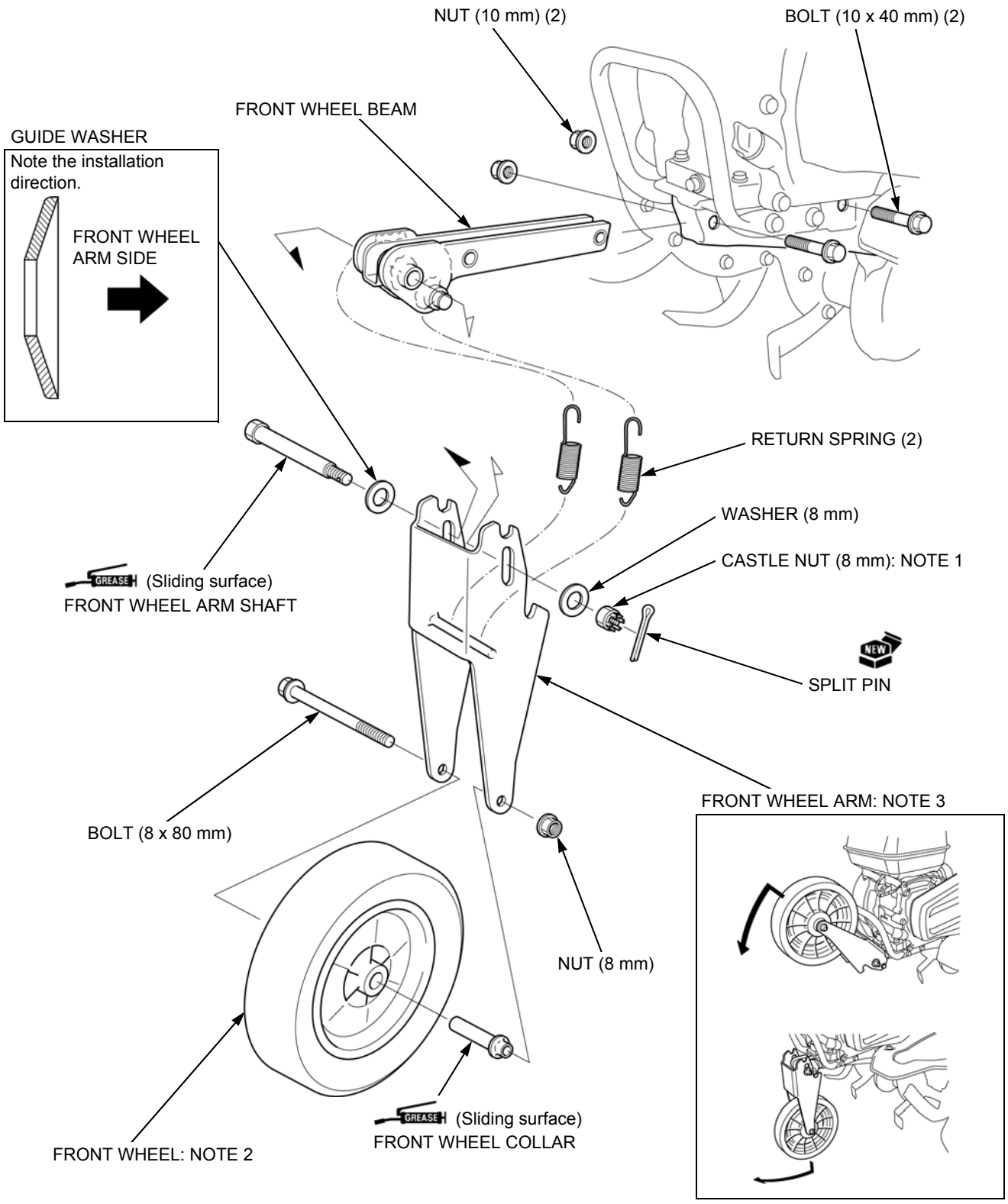


MAIN FENDER REMOVAL/INSTALLATION

Remove the sub fender (page 15-13).



FRONT WHEEL REMOVAL/INSTALLATION (DER, DE TYPE)



NOTE 1	Tighten the castle nut, then loosen it until its grooves align with the hole of the shaft.	–
NOTE 2	After installation, check the wheel for smooth operation.	–
NOTE 3	After installation, check the front wheel arm for smooth operation.	–

16. TECHNICAL FEATURE

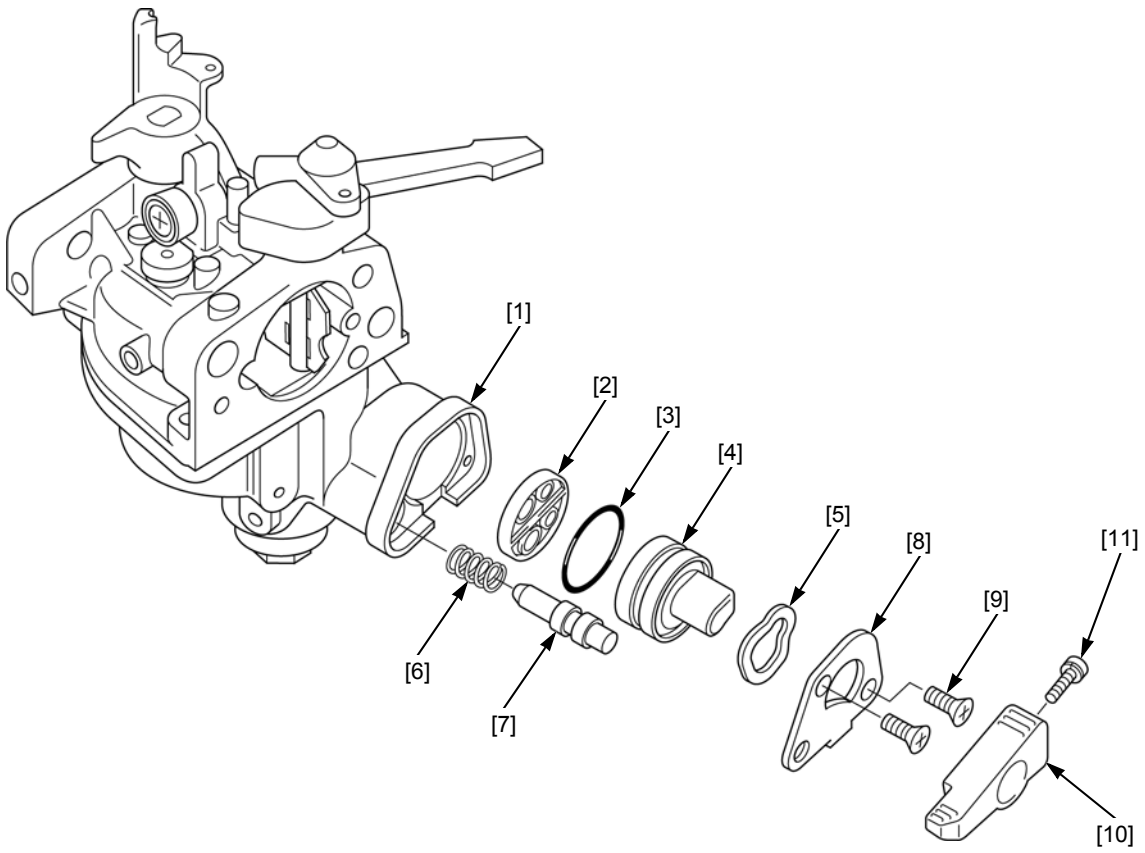
ONE TOUCH DRAIN SYSTEM

FEATURE

The function to drain the fuel from the float chamber has been combined with the fuel valve lever.

CONSTRUCTION

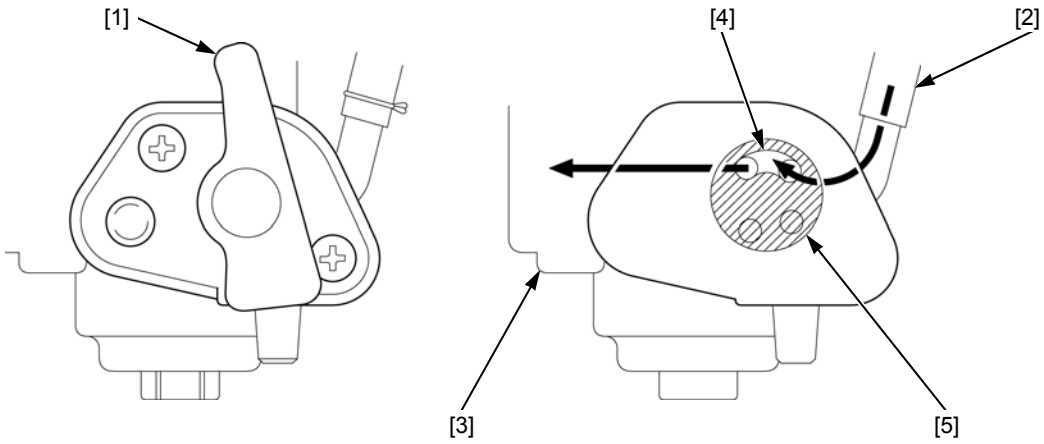
One touch drain system assembly consists of the float chamber [1], valve seal [2], O-ring [3], fuel valve [4], wave washer [5], spring [6], stopper button [7], fuel valve cover [8], valve cover screws (3 x 5 mm) [9], fuel valve lever [10], fuel valve lever screw (3 x 11 mm) [11].



FUNCTION

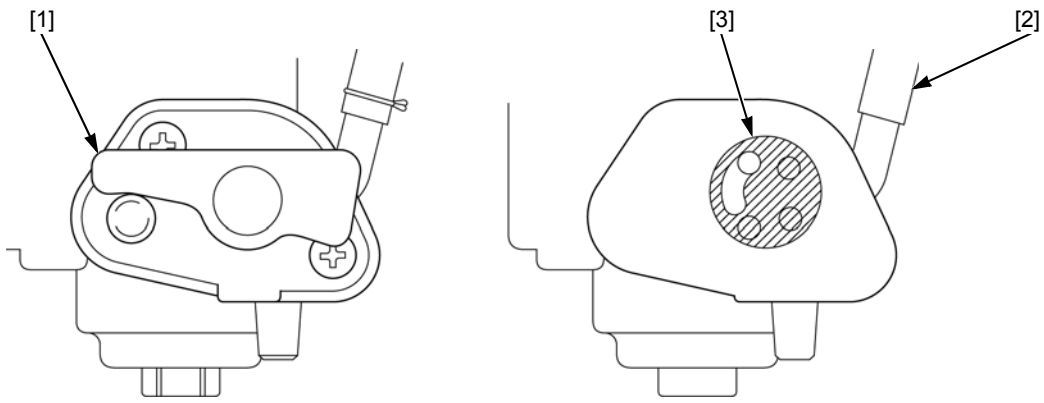
"ON" POSITION

When the fuel valve lever [1] is turned to "ON" position, the fuel passed the fuel tube [2] from the fuel tank flows in the float chamber [3], through the groove [4] in the fuel valve [5].



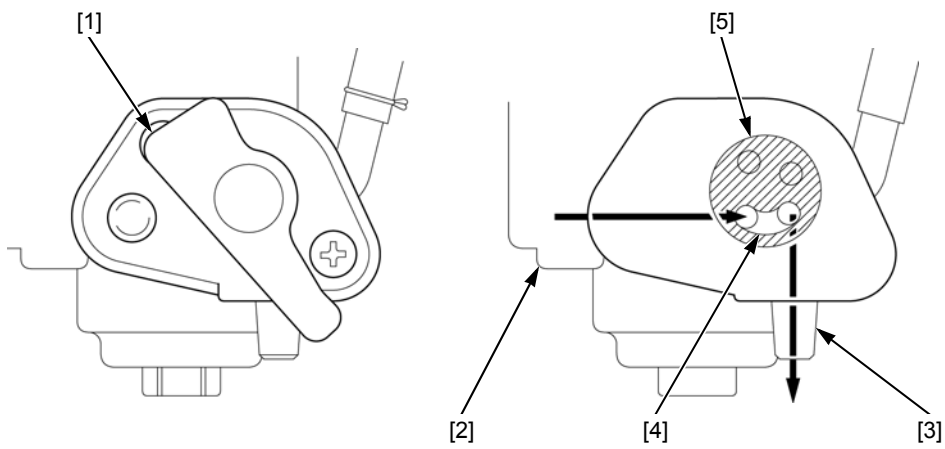
"OFF" POSITION

When the fuel valve lever [1] is turned to "OFF" position, the fuel passed the fuel tube [2] from the fuel tank is stopped with the fuel valve [3].



"DRAIN" POSITION

When the fuel valve lever [1] is turned to "DRAIN" position, the fuel in the float chamber [2] is drained from the drain joint [3] to the outside through the groove [4] in the fuel valve [5].



MEMO

INDEX

HONDA

Shop Manual News

TILLER

Power Equipment

News No.	Issue Date
P/P-539	May 2019

SOME PARTS OF CHANGES

Applicable Information	Publication No.	Applicable Page
FJ500	62V4200	1-3, 2-2, 2-3, 2-5, 5-7, 13-2, 13-12

CHANGE LOCATIONS

The changed or added instructions are shown in [ ].

APPLICABLE SERIAL NUMBER

MODEL	Frame serial number
FJ500	FAAC-2000001 and subsequent

ENGINE SPECIFICATIONS

- 62V4200: page 1-3

Model	FJ500	
Type	SER/SE/DER/DE	SER2/SE2/DER2/DE2
Engine model	GX160H1	GX160H2
Engine description code	GCAAH	GCAWH
Engine type	4-stroke, overhead valve single cylinder, inclined by 25°	
Total displacement	163 cm^3 (9.9 cu in)	
Bore and stroke	68.0 x 45.0 mm (2.68 x 1.77 in)	
Net power (SAE J1349) *1	3.6 kW (4.9 PS)/3,600 min^{-1} (rpm)	
Maximum net torque (SAE J1349) *1	10.3 N·m (1.05 kgf·m, 7.6 lbf·ft)/2,500 min^{-1} (rpm)	
Compression ratio	8.5:1	9.0:1
Cooling system	Forced-air	
Ignition system	Transistorized magneto ignition	
Ignition timing	25° BTDC	22° BTDC
Spark plug	BPR5ES (NGK), W16EPR-U (DENSO)	
Carburetor	Horizontal butterfly type	
Air cleaner	Dual element type	
Lubricating system	Splash	
Engine oil capacity	0.58 liter (0.61 US qt, 0.51 Imp qt)	
Recommended engine oil	SAE 10W-30 API service classification SE or higher	
Starting system	Recoil starter	
Stopping system	Ignition primary circuit ground	
Fuel used	Unleaded gasoline with a pump octane rating 86 or higher	Unleaded gasoline E10
Fuel tank capacity	2.4 liters (0.63 US gal, 0.53 Imp gal)	
P.T.O. shaft rotation	Counterclockwise (from P.T.O. side)	
Breather system	Flat valve type	Reed valve type

*1: 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 3,600 rpm (net power) and at 2,500 rpm (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.

MAINTENANCE STANDARDS

- 62V4200: page 2-2, 5-7

SER2/SE2/DER2/DE2 TYPE:

Unit: mm (in)

Part	Item		Standard	Service limit
Piston	Skirt O.D.		67.980 – 67.990 (2.6764 – 2.6768)	67.845 (2.6711)
	Piston-to-cylinder clearance		0.010 – 0.035 (0.0004 – 0.0014)	0.12 (0.005)
	Piston pin bore I.D.		18.002 – 18.008 (0.7087 – 0.7090)	18.048 (0.7105)
Piston rings	Ring side clearance	Top	0.035 – 0.070 (0.0014 – 0.0028)	0.15 (0.006)
		Second	0.045 – 0.080 (0.0018 – 0.0032)	0.15 (0.006)
	Ring end gap	Top	0.200 – 0.300 (0.0079 – 0.0118)	1.0 (0.04)
		Second	0.300 – 0.400 (0.0118 – 0.0157)	1.0 (0.04)
		Oil (side rail)	0.10 – 0.35 (0.004 – 0.014)	1.0 (0.04)
Carburetor	Main jet		#72	–
	Pilot screw opening		2-3/4 turns out	–
	Float height		3.4 (0.13)	–

TORQUE VALUES

- 62V4200: page 2-3

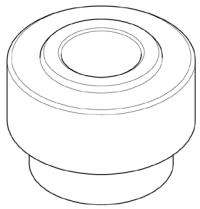
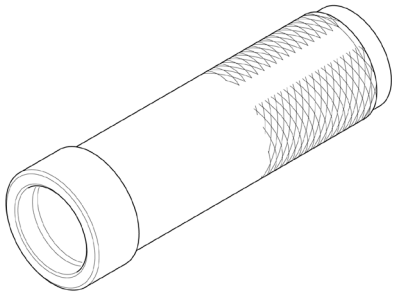
SER2/SE2/DER2/DE2 TYPE:

Item	Tread Dia. (mm)	Torque values		
		N·m	kgf·m	lbf·ft
Connecting rod bolt	M6 x 1.0	9.8	1.0	7

TOOLS

- 62V4200: page 2-5, 13-2

SPECIAL TOOLS (SER2/SE2/DER2/DE2 TYPE)

Attachment, 25 mm 07746-0030200	Inner driver handle, 40 mm 07746-0030100
	

CRANKSHAFT BEARING/OIL SEAL REPLACEMENT

- 62V4200: page 13-12

CRANKSHAFT BEARING (SER2/SE2/DER2/DE2 TYPE)

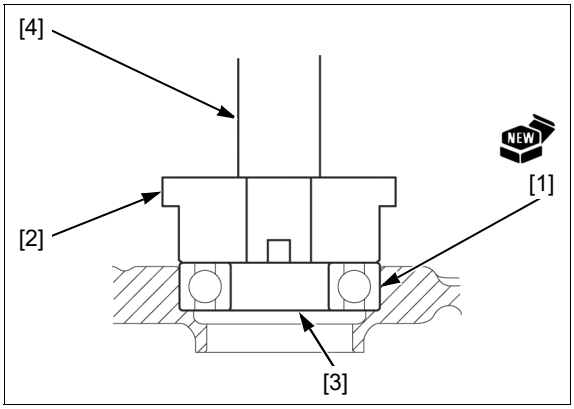
CRANKCASE COVER SIDE

Remove the oil seal and drive out the crankshaft bearing.

Drive a new crankshaft bearing [1] until it is fully seated on the end using the special tools.

TOOLS:

Attachment, 52 x 55 mm [2]	**07746-0010400**
Pilot, 25 mm [3]	**07746-0040600**
Driver [4]	**07749-0010000**



CYLINDER BARREL SIDE

Install the flywheel nut [1] tightening the flywheel to protect the crankshaft threads.

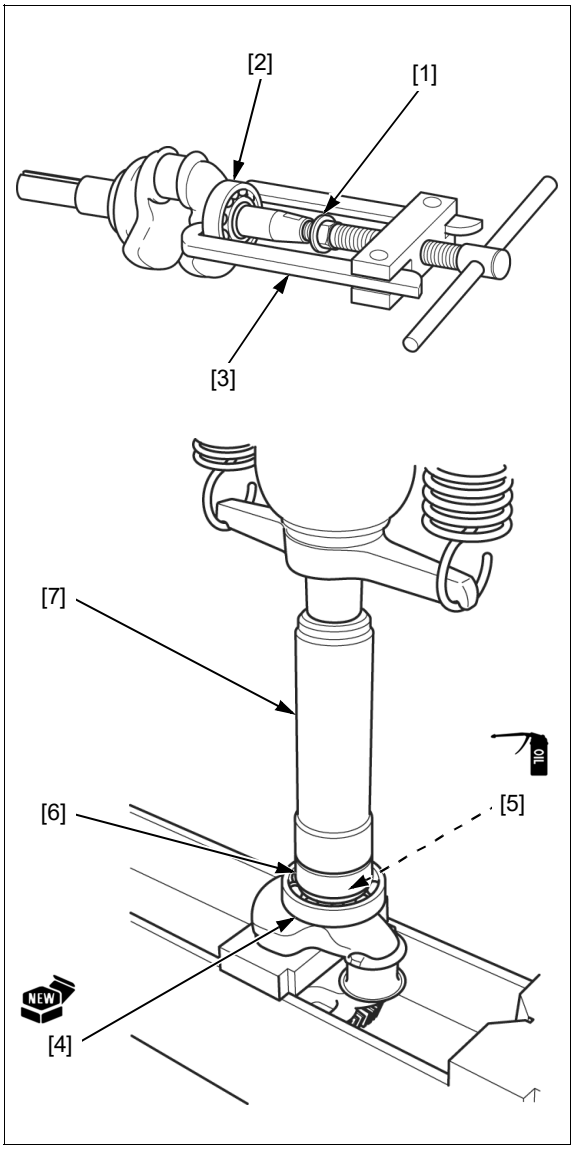
Pull out the radial ball bearing [2] using a commercially available bearing puller [3].

Apply oil to the inner surface of the new bearing [4] inner race [5].

Drive the radial ball bearing until it is fully seated on the end using the special tools and hydraulic press.

TOOLS:

Attachment, 25 mm [6]	**07746-0030200**
Inner driver handle, 40 mm [7]	**07746-0030100**



HONDA

MOTOCULTEUR

Bulletin du manuel d'atelier

Produits d'équipement

N° de bulletin	Date de publication
P/P-539	Mai 2019

CHAMP DES MODIFICATIONS

Informations concernées	N° de publication	Pages concernées
FJ500	63V4200	1-3, 2-2, 2-3, 2-5, 5-7, 13-2, 13-12

POINTS MODIFIÉS

Les instructions modifiées ou nouvelles sont marquées par [ ].

NUMÉROS DE SÉRIE CONCERNÉS

MODÈLE	N° de série de châssis
FJ500	FAAC-2000001 et suivants

CARACTÉRISTIQUES DU MOTEUR

- 63V4200: page 1-3

Modèle	FJ500	
Type	SER/SE/DER/DE	SER2/SE2/DER2/DE2
Modèle du moteur	GX160H1	GX160H2
Code de description de moteur	GCAAH	GCAWH
Type de moteur	Monocylindre à 4 temps incliné à 25° et soupape en tête	
Cylindrée	163 cm^3	
Alésage x course	68,0 x 45,0 mm	
Puissance nette (SAE J1349) *1	3,6 kW (4,8 ch)/3 600 min^{-1} (tr/min)	
Couple net maximum (SAE J1349) *1	10,3 N·m (1,1 kgf·m)/2 500 min^{-1} (tr/min)	
Taux de compression	8,5 : 1	9,0 : 1
Refroidissement	Forcé par circulation d'air	
Allumage	Allumage électromagnétique transistoré	
Calage de l'allumage	25° avant PMH	22° avant PMH
Bougie	BPR5ES (NGK), W16EPR-U (DENSO)	
Carburateur	Type horizontal, à vanne papillon	
Filtre à air	Type à double élément	
Circuit de graissage	Par barbotage	
Contenance en huile moteur	0,58 litre	
Huile moteur préconisée	SAE 10W-30 classification API SE ou supérieure	
Système de démarrage	Lanceur à rappel	
Système d'arrêt	Mise à la masse du circuit d'allumage primaire	
Carburant utilisé	Essence sans plomb avec indice d'octane à la pompe de 86 ou supérieur	Essence sans plomb E10
Contenance du réservoir de carburant	2,4 litres	
Rotation de l'arbre de P.D.F.	Sens inverse des aiguilles d'une montre (Vu du côté prise de mouvement)	
Système de reniflard	Type clapet plat	Type a soupape a ruban

*1: La puissance nominale du moteur indiquée dans ce document correspond à la puissance nette testée sur un moteur de production pour le modèle correspondant, et mesurée conformément à la norme SAE J1349 à 3 600 tr/min (puissance nette) et à 2 500 tr/min (couple net maxi.). La puissance des moteurs de grande série peut varier par rapport à la valeur indiquée. La puissance réelle du moteur équipant la machine au final varie en fonction de nombreux facteurs, notamment le régime de service du moteur en utilisation, les facteurs environnementaux, l'entretien, et d'autres variables.

STANDARDS D'ENTRETIEN

- 63V4200: page 2-2, 5-7

TYPE SER2, SE2, DER2, DE2

Unité : mm

Pièce	Élément		Standard	Limite de service
Piston	Dia. ext. de jupe		67,980 – 67,990	67,845
	Jeu piston-cylindre		0,010 – 0,035	0,12
	Dia. int. d'alésage d'axe de piston		18,002 – 18,008	18,048
Segments de piston	Jeu latéral de segment	Segment de feu	0,035 – 0,070	0,15
		Segment d'étanchéité	0,045 – 0,080	0,15
	Jeu à la coupe	Segment de feu	0,200 – 0,300	1,0
		Segment d'étanchéité	0,300 – 0,400	1,0
		Segment racleur (expandeur latéral)	0,10 – 0,35	1,0
Carburateur	Gicleur principal		# 72	–
	Ouverture de la vis de richesse		2 tours 3/4	–
	Hauteur de flotteur		3,4	–

VALEURS DE COUPLES DE SERRAGE

- 63V4200: page 2-3

TYPE SER2, SE2, DER2, DE2:

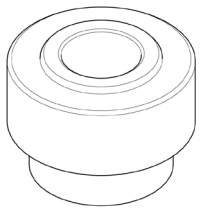
Elément	Dia. de filetage	Couple de serrage	
		N·m	kgf·m
Vis de bielle	M6 x 1,0	9,8	1,0

OUTILS

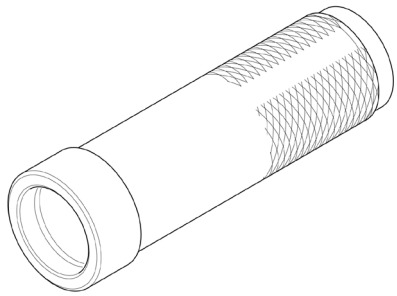
- 63V4200: page 2-5, 13-2

OUTILS SPECIAUX (TYPE SER2, SE2, DER2, DE2)

Adaptateur, 25 mm
07746-0030200



Mandrin interne, 40 mm
07746-0030100



REMPLACEMENT DU PALIER/BAGUE D'ETANCHEITE DE VILEBREQUIN

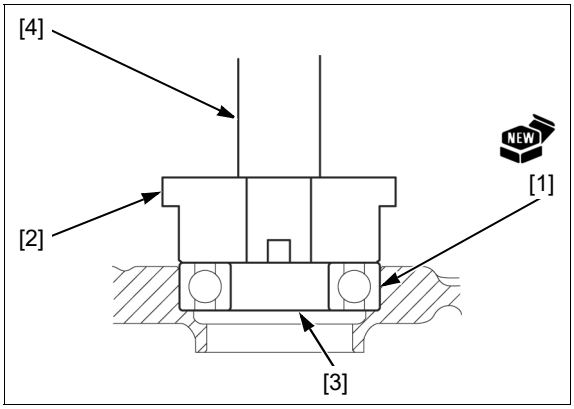
- 63V4200: page 13-12

PALIER DE VILEBREQUIN (TYPE SER2, SE2, DER2, DE2)

COTE COUVERCLE DE CARTER MOTEUR

Déposez la bague d'étanchéité et enlevez le palier de vilebrequin.

Enfoncez un nouveau palier de vilebrequin [1] jusqu'à ce qu'il soit complètement placé à l'extrémité à l'aide des outils spéciaux.



OUTILS:

Adaptateur, 52 x 55 mm [2]	**07746-0010400**
Guide, 25 mm [3]	**07746-0040600**
Mandrin [4]	**07749-0010000**

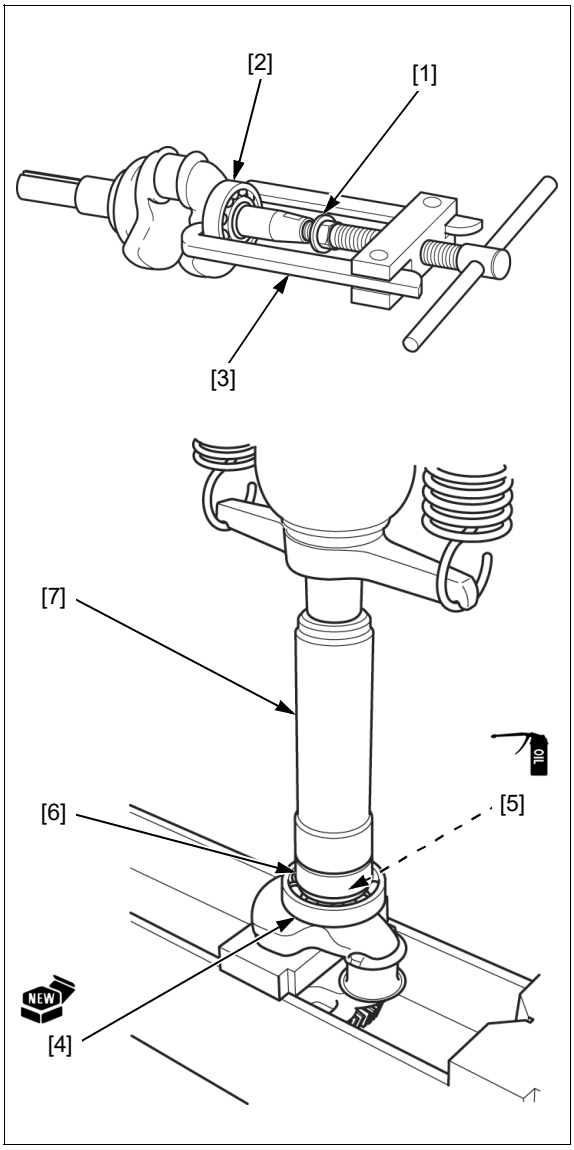
COTE FUT DE CYLINDRE

Installez l'écrou de volant moteur [1] en serrant le volant moteur pour protéger les filets de vilebrequin.

Retirez le palier à billes radial [2] à l'aide d'un extracteur de palier disponible dans le commerce [3].

Appliquez de l'huile sur la surface interne du roulement intérieur [5] du nouveau palier [4].

Enfoncez le palier à billes radial jusqu'à ce qu'il soit placé à l'extrémité à l'aide des outils spéciaux et de la presse hydraulique.



OUTILS:

Adaptateur, 25 mm [6]	**07746-0030200**
Mandrin interne, 40 mm [7]	**07746-0030100**

HONDA

Technische Mitteilung

ACKERFRÄSE

Motorgetriebene Geräte

Mitteilungsnr.	Ausgabedatum
P/P-539	Mai 2019

ÜBERSICHT ÜBER DIE MODIFIKATIONEN

Zutreffende Information	Veröffentlichungsnr.	Bezugsseite
FJ500	64V4200	1-3, 2-2, 2-3, 2-5, 5-7, 13-2, 13-12

GEÄNDERTE KOMPONENTEN

Die geänderten oder hinzugefügten Anweisungen stehen in [ ].

ANWENDBARE SERIENNUMMER

MODELL	Rahmen-Seriennummer
FJ500	FAAC-2000001 und folgende

Technische Daten vom Motor

- 64V4200: Seite 1-3

Modell	FJ500	
Typ	SER/SE/DER/DE	SER2/SE2/DER2/DE2
Motormodell	GX160H1	GX160H2
Motorcodebezeichnung	GCAAH	GCAWH
Motortyp	4-Takt, Einzylinder, OHV (hängendes Ventil), um 25° geneigt	
Hubraum	163 cm^3	
Bohrung x Hub	68,0 x 45,0 mm	
Nettoleistung (SAE J1349) *1	3,6 kW (4,9 HP)/3 600 min^{-1} (U/min)	
Max. Nettodrehmoment (SAE J1349) *1	10,3 N·m (1,1 kgf·m)/2 500 min^{-1} (U/min)	
Verdichtungsverhältnis	8,5:1	9,0:1
Kühlsystem	Gebläsekühlung	
Zündsystem	Transistor-Magnetzündung	
Zündverstellung	25° vor OT/1 400 min^{-1} (U/min)	22° vor OT/1 400 min^{-1} (U/min)
Zündkerze	BPR5ES (NGK)/W16EPR-U (DENSO)	
Vergaser	Flachstromvergaser mit Drosselklappe	
Luftfilter	Doppelfilter	
Schmiersystem	Spritzschmierung	
Motorölmenge	0,58 Liter	
Empfohlenes Motoröl	SAE 10W-30 API-Klasse SE oder höher	
Startsystem	Seilzugstarter	
Abstellsystem	Primärzündstromkreis-Masse	
Vorgeschriebener Kraftstoff	unverbleites Benzin (ROZ+MOZ/2 = 86 Oktan oder höher)	Unverbleites Benzin E10
Kraftstofftankinhalt	2,4 Liter	
Drehrichtung der Zapfwelle	gegen den Uhrzeigersinn (von der Zapfwelle aus)	
Entlüftung	Flachschieber	Membranventil

*1: Bei der in diesem Dokument angegebenen Nennleistung des Motors handelt es sich um die an einem Serienmotor des Motormodells auf dem Prüfstand gemäß SAE J1349 ermittelte Nettoleistungsabgabe bei 3 600/min (Nettoleistung) und bei 2 500/min (max. Nettodrehmoment). Die Werte anderer Motoren aus der Serienproduktion können hiervon abweichen. Die tatsächliche Leistungsabgabe des im Endprodukt verbauten Motors ist von zahlreichen Faktoren wie Betriebsdrehzahl des Motors in der Anwendung, Umweltbedingungen, Wartung und anderen Variablen abhängig.

WARTUNGSSTANDARDS

- 64V4200: Seite 2-2, 5-7

AUSFÜHRUNGEN SER2, SE2, DER2, DE2:

Einheit: mm

Teil	Artikel		Sollwert	Verschleißgrenze
Kolben	Kolbenmantel, AD		67,980 – 67,990	67,845
	Spiel des Kolbens im Zylinder		0,010 – 0,035	0,12
	Kolbenbolzenbohrung, ID		18,002 – 18,008	18,048
Kolbenringe	Seitliches Spiel des Kolbenrings	1. Ring	0,035 – 0,070	0,15
		2. Ring	0,045 – 0,080	0,15
	Ringstoß	1. Ring	0,200 – 0,300	1,0
		2. Ring	0,300 – 0,400	1,0
		Ölabstreifring (Seitenführung)	0,10 – 0,35	1,0
Vergaser	Hauptdüse		# 72	–
	Öffnung der Leerlaufgemischschraube		2-3/4 Umdrehungen auswärts	–
	Schwimmerhöhe		3,4	–

ANZUGSDREHMOMENTE

- 64V4200: Seite 2-3

AUSFÜHRUNGEN SER2, SE2, DER2, DE2:

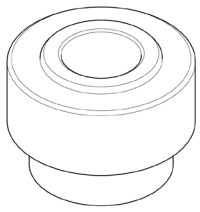
Position	Gewindedurchm.	Anzugsdrehmomente	
		N·m	kgf·m
Pleuelschraube	M6 x 1,0	9,8	1,0

WERKZEUGE

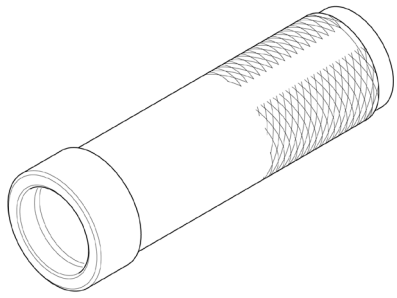
- 64V4200: Seite 2-5, 13-2

SPEZIALWERKZEUGE (AUSFÜHRUNGEN SER2, SE2, DER2, DE2)

Vorsatz, 25 mm
07746-0030200



Innentreiber, 40 mm
07746-0030100



KURBELWELLENLAGER / ÖLDICHTRING AUSTAUSCH

- 64V4200: Seite 13-12

KURBELWELLENLAGER (AUSFÜHRUNGEN SER2, SE2, DER2, DE2)

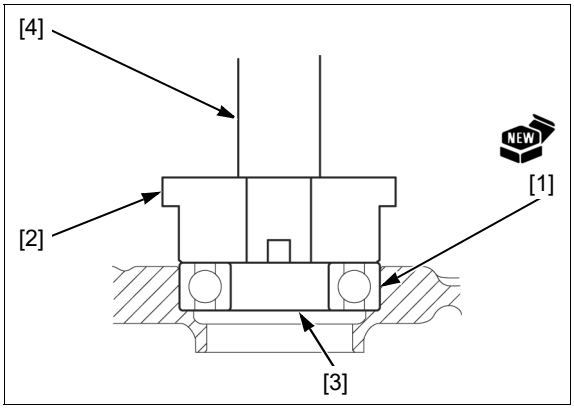
IM KURBELGEHÄUSEDECKEL

Den Öldichtring entfernen und das Kurbelwellenlager austreiben.

Ein neues Kurbelwellenlager [1] mit Spezialwerkzeug eintreiben, bis das Ende aufsitzt.

WERKZEUGE:

Vorsatz, 52 x 55 mm [2]	**07746-0010400**
Führung, 25 mm [3]	**07746-0040600**
Treiber [4]	**07749-0010000**



ZYLINDERGEHÄUSESEITE

Die Schwungradmutter [1] zum Anziehen des Schwungrads einsetzen, um das Gewinde der Kurbelwelle zu schützen.

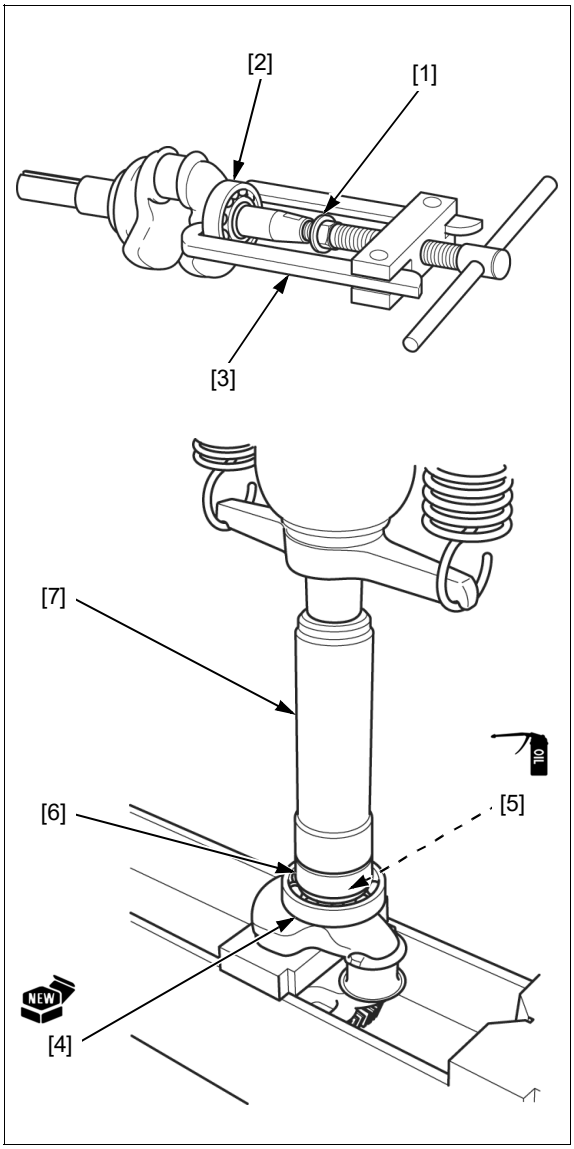
Das Radialkugellager [2] mit einem handelsüblichen Lagerzug [3] herausziehen.

Öl auf die Innenfläche des Innenrings [5] des neuen Lagers [4] auftragen.

Das Radialkugellager mit Spezialwerkzeugen und einer Hydraulikpresse eintreiben, bis das Ende aufsitzt.

WERKZEUGE:

Vorsatz, 25 mm [6]	**07746-0030200**
Innentreiber, 40 mm [7]	**07746-0030100**



HONDA

Novedades del manual de taller

CULTIVADORA

Equipo motorizado

N.º de documento	Fecha de edición
P/P-539	Mayo 2019

CAMBIO DE ALGUNAS PARTES

Información aplicable	N.º de publicación	Página aplicable
FJ500	65V4200	1-3, 2-2, 2-3, 2-5, 5-7, 13-2, 13-12

UBICACIÓN DE LOS CAMBIOS

Las instrucciones que han cambiado o que se han agregado se muestran dentro de [ ].

NÚMERO DE SERIE APLICABLE

MODELO	Número de serie del bastidor
FJ500	FAAC-2000001 y posterior

ESPECIFICACIONES DEL MOTOR

- 65V4200: página 1-3

Modelo	FJ500	
Tipo	SER/SE/DER/DE	SER2/SE2/DER2/DE2
Modelo del motor	GX160H1	GX160H2
Código de descripción del motor	GCAAH	GCAWH
Tipo del motor	Cuatro tiempos, árbol de levas en cabeza, monocilíndrico, inclinado 25°	
Cilindrada	163 cm^3	
Diámetro x carrera	68,0 x 45,0 mm	
Potencia neta (SAE J1349)*1	3,6 kW/3.600 min^{-1} (rpm)	
Par neto máximo(SAE J1349)*1	10,3 N·m (1,1 kgf·m)/2.500 min^{-1} (rpm)	
Relación de compresión	8,5:1	9,0:1
Sistema de refrigeración	Aire forzado	
Sistema de encendido	Encendido por magneto transistorizado	
Distribución del encendido	25° APMS	22° APMS
Bujía	BPR5ES (NGK), W16EPR-U (DENSO)	
Carburador	Tipo horizontal, válvula de mariposa	
Filtro de aire	Tipo elemento doble	
Sistema de lubricación	Barboteo	
Capacidad de aceite del motor	0,58 litros	
Aceite del motor recomendado	SAE 10W-30 API, clasificación de servicio SE o superior	
Sistema de arranque	Retroceso	
Sistema de parada	Masa al circuito primario del encendido	
Combustible utilizado	Gasolina sin plomo con un índice de octanos de 86 o superior	Gasolina sin plomo E10
Capacidad del depósito de combustible	2,4 litros	
Rotación del eje de la TDF	Sentido contrario a las agujas del reloj (desde el lado de la TDF)	
Sistema de respiradero	Tipo de válvula plana	Tipo válvula de lengüeta

*1: La potencia del motor indicada en este documento es la potencia neta probada en un motor de producción para el modelo de dicho motor y medida de acuerdo con la norma SAE J1349 a 3.600 rpm (potencia neta) y a 2.500 rpm (par motor neto máximo). Los motores de producción en cadena pueden tener valores diferentes a este. La potencia real para el motor instalado en la máquina final dependerá de diversos factores, incluidos la velocidad de trabajo del motor en la aplicación, las condiciones ambientales, el mantenimiento, así como otras variables.

ESTÁNDARES DE MANTENIMIENTO

• 65V4200: página 2-2, 5-7

TIPO SER2, SE2, DER2, DE2

Unidad: mm

Pieza	Elemento		Estándar	Límite de servicio
Pistón	D.E. del faldón		67,980 – 67,990	67,845
	Holgura entre el pistón y el cilindro		0,010 – 0,035	0,12
	D.I. del bulón del pistón		18,002 – 18,008	18,048
Segmentos del pistón	Holgura lateral del segmento	Superior	0,035 – 0,070	0,15
		Segundo	0,045 – 0,080	0,15
	Separación entre los extremos del segmento	Superior	0,200 – 0,300	1,0
		Segundo	0,300 – 0,400	1,0
		De engrase (raíl lateral)	0,10 – 0,35	1,0
Carburador	Surtidor principal		# 72	–
	Apertura del tornillo piloto		2-3/4 de vuelta hacia fuera	–
	Altura del flotador		3,4	–

VALORES DE LOS PARES DE APRIETE

• 65V4200: página 2-3

TIPO SER2, SE2, DER2, DE2:

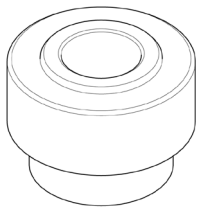
Elemento	Diá. de la rosca	Valores de los pares de apriete	
		N·m	kgf·m
Perno de la biela	M6 x 1,0	9,8	1,0

HERRAMIENTAS

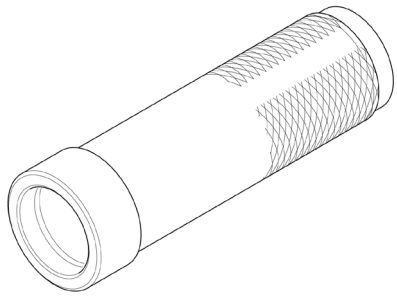
• 65V4200: página 2-5, 13-2

HERRAMIENTAS ESPECIALES (TIPO SER2, SE2, DER2, DE2)

Accesorio, 25 mm
07746-0030200



Instalador interior, 40 mm
07746-0030100



SUSTITUCIÓN DEL COJINETE/RETÉN DE ACEITE DEL CIGÜEÑAL

- 65V4200: página 13-12

COJINETE DEL CIGÜEÑAL (TIPO SER2, SE2, DER2, DE2)

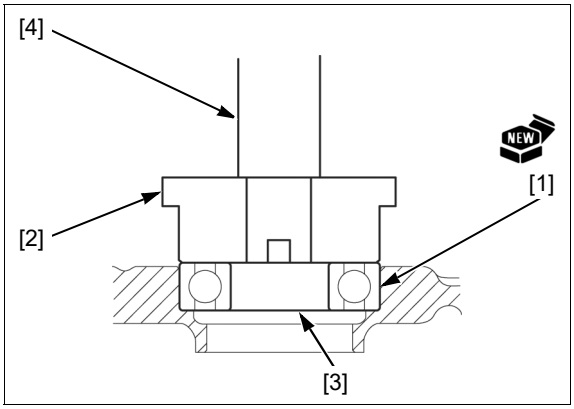
LADO DE LA TAPA DEL CÁRTER MOTOR

Extraiga el retén de aceite y el cojinete del cigüeñal.

Monte un cojinete del cigüeñal nuevo [1] hasta que esté completamente asentado en el extremo, utilizando las herramientas especiales.

HERRAMIENTAS:

Accesorio, 52 x 55 mm [2]	**07746-0010400**
Piloto, 25 mm [3]	**07746-0040600**
Instalador [4]	**07749-0010000**



LADO DEL CUERPO DEL CILINDRO

Instale la tuerca del volante de inercia [1] apretando el volante de inercia para proteger las roscas del cigüeñal.

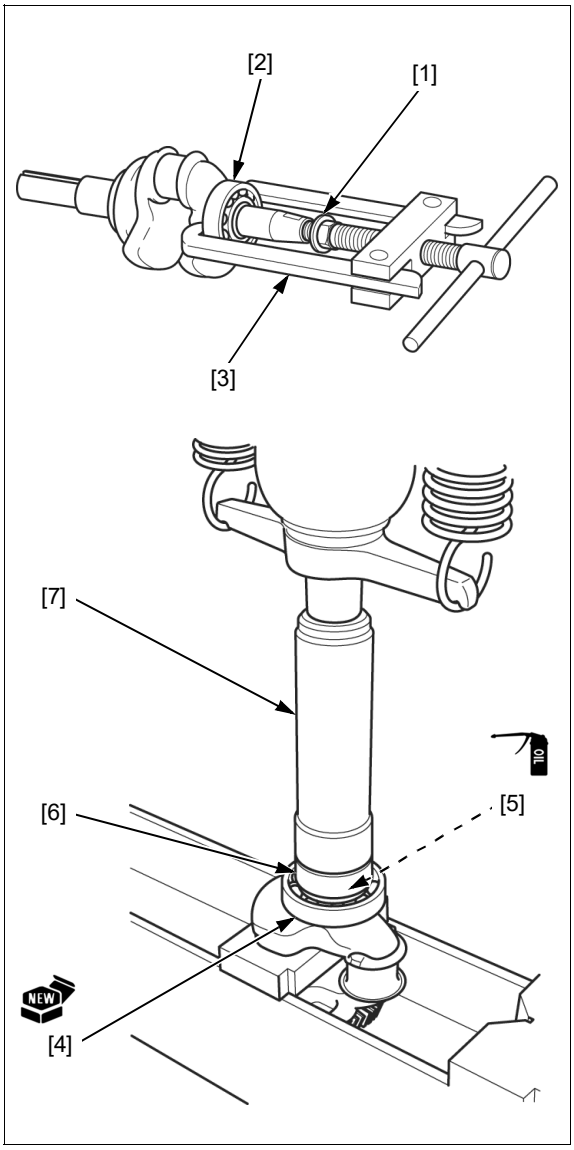
Extraiga el cojinete de bolas radial [2], utilizando un extractor de cojinetes disponible en comercios [3].

Aplique aceite a la superficie interior de la pista interior [5] del cojinete nuevo [4].

Monte un cojinete de bolas radial hasta que esté completamente asentado en el extremo, utilizando las herramientas especiales y la prensa hidráulica.

HERRAMIENTAS:

Accesorio, 25 mm [6]	**07746-0030200**
Instalador interior, 40 mm [7]	**07746-0030100**



HONDA

Shop Manual News

TILLER

Power Equipment

News No.	Issue Date
P/P-634	June 2019

SOME PARTS OF CHANGES

Applicable Information	Publication No.	Applicable Page
FJ500	62V4200	11-2

CHANGE LOCATIONS

The changed instructions are shown in [ ] .

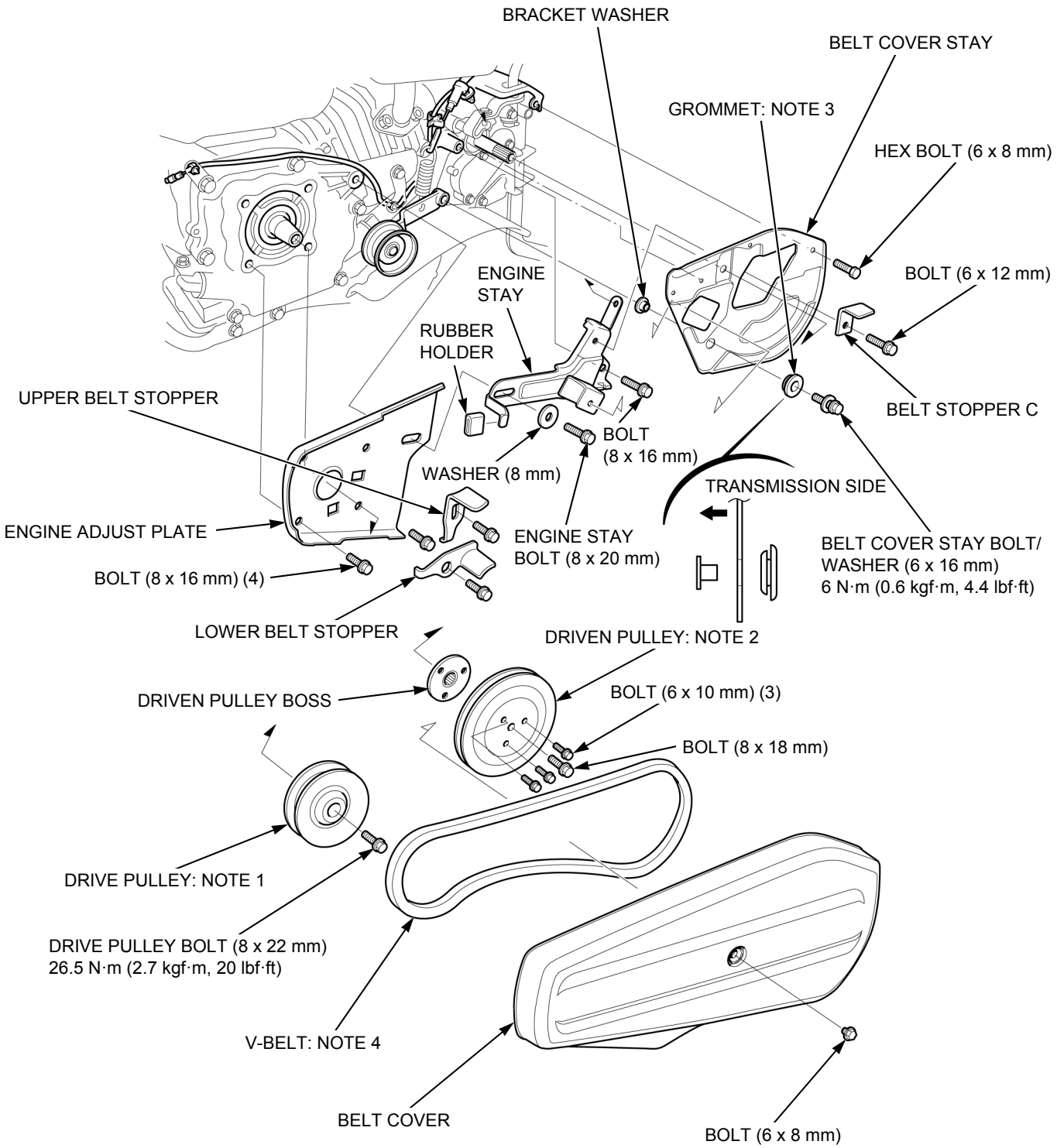
OUTLINE OF CHANGES

Note this supplement is applicable only to the frame serial numbers listed in the table shown below.

Model	Frame serial number
FJ500	FAAC-2000322 and subsequent

PULLEY/V-BELT REMOVAL/INSTALLATION

After installation, adjust the V-belt tension (page 3-10).



NOTE 1	DRIVE PULLEY REMOVAL/INSTALLATION	page 11-3
NOTE 2	DRIVEN PULLEY REMOVAL/INSTALLATION	page 11-3
NOTE 3	Note the installation direction.	–
NOTE 4	Before installation, check that there is no crack and abnormal wear-out in the belt and replace if necessary.	–

HONDA

Bulletin du manuel d'atelier

MOTOCULTEUR

Produits d'équipement

N° de bulletin	Date de publication
P/P-634	Juin 2019

CHAMP DES MODIFICATIONS

Informations concernées	N° de publication	Pages concernées
FJ500	63V4200	11-2

POINTS MODIFIES

Les instructions modifiées sont indiquées dans [ ].

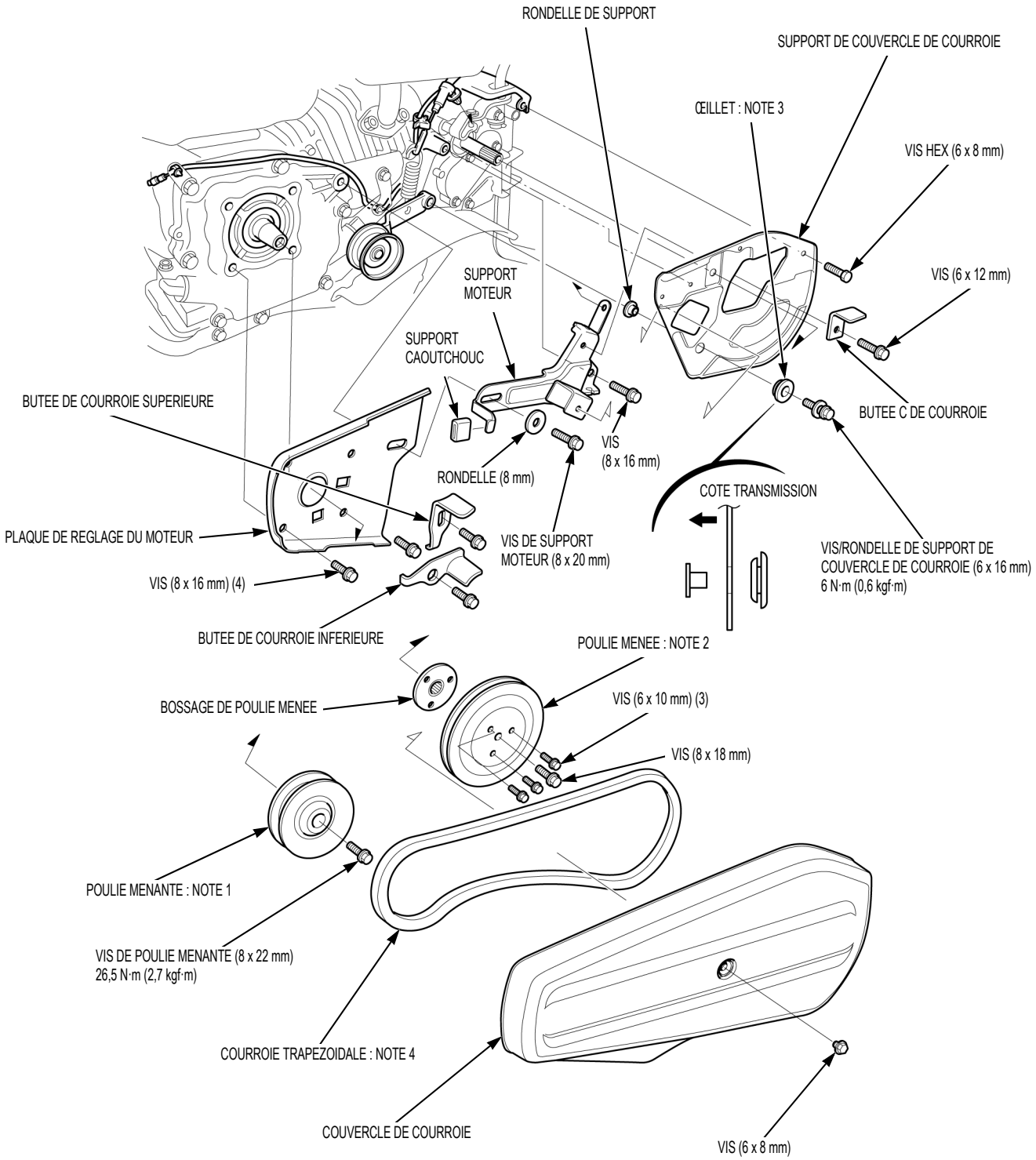
DESCRIPTIF DES MODIFICATIONS

Noter que ce supplément n'est applicable qu'aux numéros de série de châssis énumérés dans le tableau indiqué ci-dessous.

Modéle	Numéro de série de châssis
FJ500	FAAC-2000322 et suivants

DEPOSE/POSE DE LA POULIE/COURROIE TRAPEZOIDALE

Après repose, régler la tension de la courroie trapézoïdale (page 3-10).



NOTE 1	DEPOSE/POSE DE LA POULIE MENANTE	page 11-3
NOTE 2	DEPOSE/POSE DE LA POULIE MENEE	page 11-3
NOTE 3	Noter le sens de pose.	–
NOTE 4	Avant de procéder à la pose, vérifier l'absence de fissures ou d'usure anormale au niveau de la courroie et la remplacer si nécessaire.	–

HONDA

Technische Mitteilung

MOTORHACKE

Motorgetriebene Geräte

Mitteilungsnr.	Ausgabedatum
P/P-634	Juni 2019

ÜBERSICHT ÜBER DIE MODIFIKATIONEN

Zutreffende Information	Veröffentlichungsnr.	Bezugsseite
FJ500	64V4200	11-2

GEÄNDERTE KOMPONENTEN

Die geänderten Anweisungen sind in [ ] eingeschlossen.

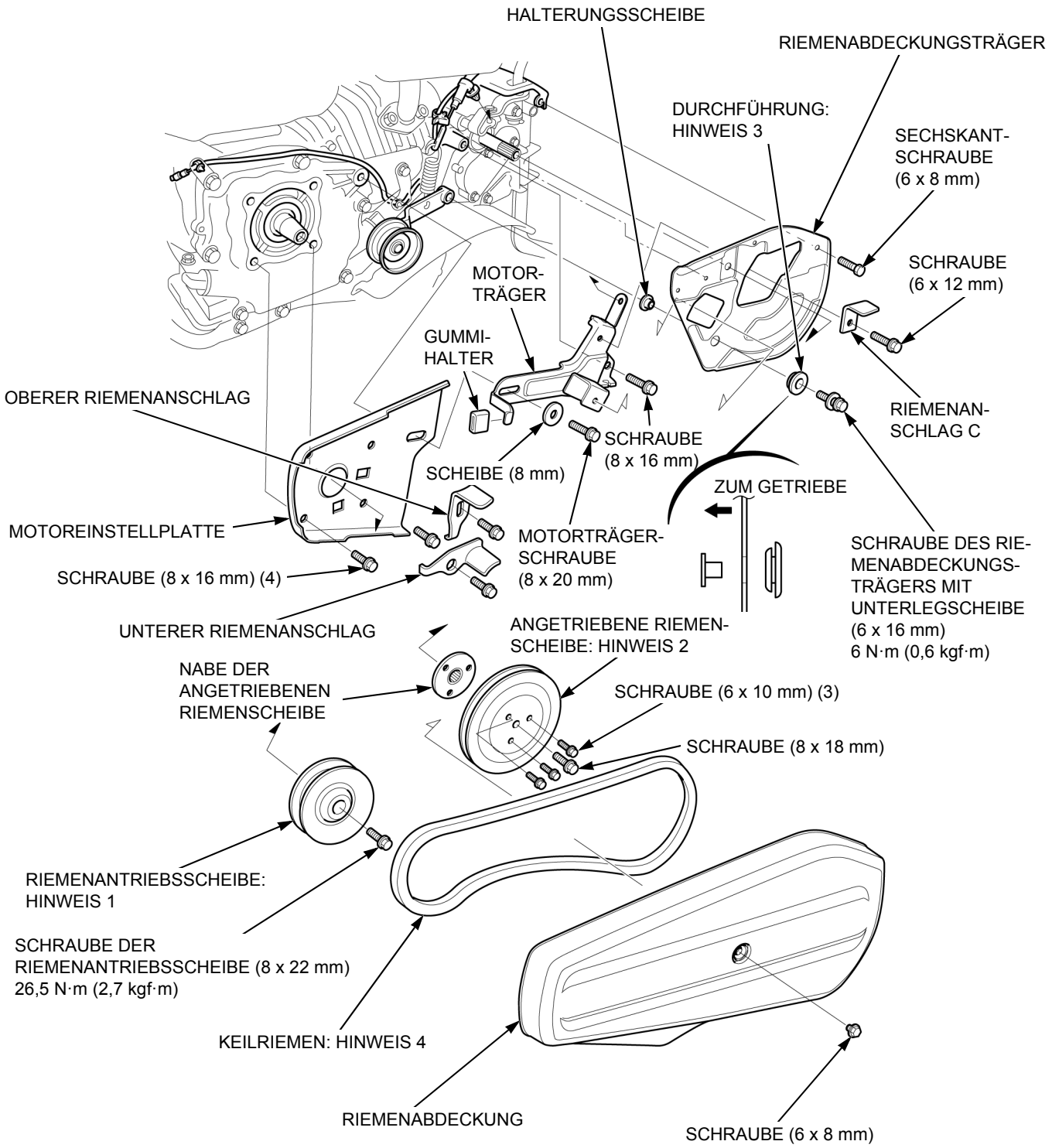
ÜBERSICHT ÜBER ÄNDERUNGEN

Es ist zu beachten, dass dieser Nachtrag nur für die in der nachfolgenden Tabelle aufgeführten Seriennummern gilt.

Modell	Seriennummer
FJ500	FAAC-2000322 und höher

RIEMENSCHEIBE / KEILRIEMEN AUSBAU / EINBAU

Nach dem Einbau die Keilriemenspannung einstellen (Seite 3-10).



HINWEIS 1	RIEMENANTRIEBSSCHEIBE AUSBAU / EINBAU	Seite 11-3
HINWEIS 2	ANGETRIEBENE RIEMENSCHEIBE AUSBAU / EINBAU	Seite 11-3
HINWEIS 3	Die Einbaurichtung beachten.	–
HINWEIS 4	Den Riemen vor dem Einbau auf Risse und auffälligen Verschleiß prüfen und bei Bedarf austauschen.	–

HONDA

Novedades del manual de taller

MOTOAZADA

Equipo motorizado

N.º de documento	Fecha de edición
P/P-634	Junio 2019

CAMBIO DE ALGUNAS PARTES

Información aplicable	N.º de publicación	Página aplicable
FJ500	65V4200	11-2

UBICACIÓN DE LOS CAMBIOS

Las instrucciones cambiadas se muestran en [- - - -].

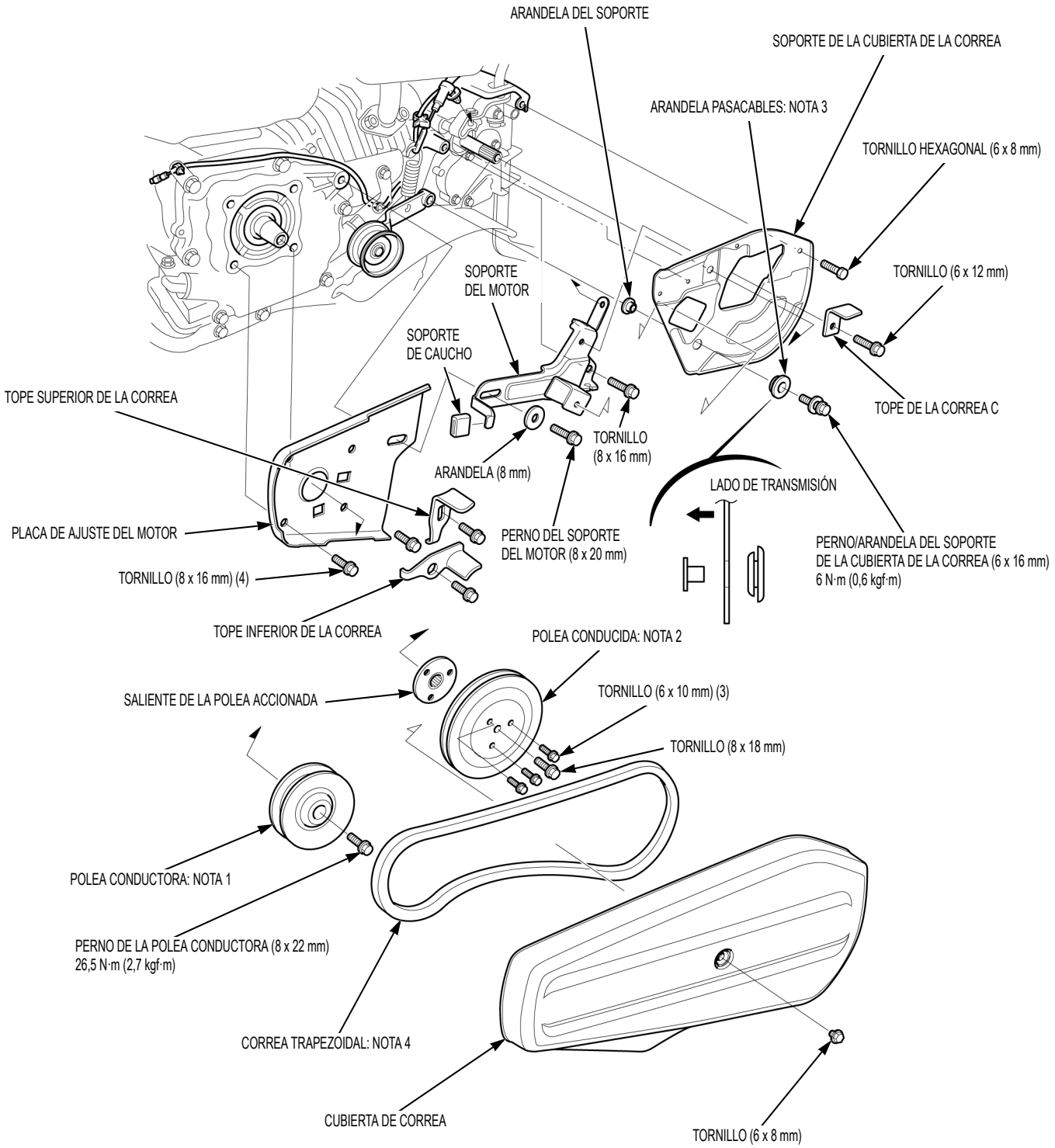
PERFIL DE LOS CAMBIOS

Tenga presente que este suplemento sólo es aplicable a los números de serie del bastidor enumerados en la tabla mostrada a cotinuación.

Modelo	Número de serie del bastidor
FJ500	FAAC-2000322 y subsiguientes

MONTAJE/DESMONTAJE DE LA POLEA/CORREA TRAPEZOIDAL

Después de la instalación, ajuste la tensión de la correa trapezoidal (página 3-10).



NOTA 1	EXTRACCIÓN/INSTALACIÓN DE LA POLEA CONDUCTORA	página 11-3
NOTA 2	EXTRACCIÓN/INSTALACIÓN DE LA POLEA CONDUCIDA	página 11-3
NOTA 3	Anote el sentido de instalación.	–
NOTA 4	Antes de la instalación, compruebe que no existen grietas o desgaste anormal en la correa y sustitúyala si es necesario.	–