# Kawasaki D-TRACKER



## Motorcycle Service Manual Supplement

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This quick reference guide will assist you in locating a desired topic or procedure.

- •Bend the pages back to match the black tab of the desired chapter number with the black tab on the edge at each table of contents page.
- •Refer to the sectional table of contents for the exact pages to locate the specific topic required.



## KLX250 D-TRACKER

# Motorcycle Service Manual Supplement

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The right is reserved to make changes at any time without prior notice and without incurring an obligation to make such changes to products manufactured previously. See your Motorcycle dealer for the latest information on product improvements incorporated after this publication.

All information contained in this publication is based on the latest product information available at the time of publication. Illustrations and photographs in this publication are intended for reference use only and may not depict actual model component parts.

#### LIST OF ABBREVIATIONS

А	ampere(s)	lb	pound(s)
ABDC	after bottom dead center	m	meter(s)
AC	alternating current	min	minute(s)
ATDC	after top dead center	Ν	newton(s)
BBDC	before bottom dead center	Pa	pascal(s)
BDC	bottom dead center	PS	horsepower
BTDC	before top dead center	psi	pound(s) per square inch
°C	degree(s) Celsius	r	revolution
DC	direct current	rpm	revolution(s) per minute
F	farad(s)	TDC	top dead center
°F	degree(s) Fahrenheit	TIR	total indicator reading
ft	foot, feet	V	volt(s)
g	gram(s)	W	watt(s)
h	hour(s)	Ω	ohm(s)
L	liter(s)		

## Read OWNER'S MANUAL before operating.

## Foreword

This service manual supplement contains only the information unique to the models covered. Read both the base manual listed below and this supplement for complete information on proper service procedures.

Base Manual	Part Number
KLX250R, KLX250	99924-1165-03

This manual is designed primarily for use by trained mechanics in a properly equipped shop. However, it contains enough detail and basic information to make it useful to the owner who desires to perform his own basic maintenance and repair work. A basic knowledge of mechanics, the proper use of tools, and workshop procedures must be understood in order to carry out maintenance and repair satisfactorily. Whenever the owner has insufficient experience or doubts his ability to do the work, all adjustments, maintenance, and repair should be carried out only by qualified mechanics.

In order to perform the work efficiently and to avoid costly mistakes, read the text, thoroughly familiarize yourself with the procedures before starting work, and then do the work carefully in a clean area. Whenever special tools or equipment are specified, do not use makeshift tools or equipment. Precision measurements can only be made if the proper instruments are used, and the use of substitute tools may adversely affect safe operation.

For the duration of the warranty period, we recommend that all repairs and scheduled maintenance be performed in accordance with this service manual. Any owner maintenance or repair procedure not performed in accordance with this manual may void the warranty.

To get the longest life out of your vehicle:

- Follow the Periodic Maintenance Chart in the Service Manual.
- Be alert for problems and non-scheduled maintenance.
- Use proper tools and genuine Kawasaki Motorcycle parts. Special tools, gauges, and testers that are necessary when servicing Kawasaki motorcycles are introduced by the Service Manual. Genuine parts provided as spare parts are listed in the Parts Catalog.
- Follow the procedures in this manual carefully. Don't take shortcuts.

 Remember to keep complete records of maintenance and repair with dates and any new parts installed.

#### How to Use This Manual

In this manual, the product is divided into its major systems and these systems make up the manual's chapters.

The Quick Reference Guide shows you all of the product's system and assists in locating their chapters. Each chapter in turn has its own comprehensive Table of Contents.

For example, if you want ignition coil information, use the Quick Reference Guide to locate the Electrical System chapter. Then, use the Table of Contents on the first page of the chapter to find the ignition coil section.

Whenever you see these WARNING and CAUTION symbols, heed their instructions! Always follow safe operating and maintenance practices.

#### A WARNING

This warning symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.

#### CAUTION

This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of equipment.

This manual contains four more symbols (in addition to WARNING and CAUTION) which will help you distinguish different types of information.

#### NOTE

- This note symbol indicates points of particular interest for more efficient and convenient operation.
- Indicates a procedural step or work to be done.
- OIndicates a procedural sub-step or how to do the work of the procedural step it follows. It also precedes the text of a NOTE.

★Indicates a conditional step or what action to take based on the results of the test or inspection in the procedural step or sub-step it follows.

In most chapters an exploded view illustration

of the system components follows the Table of Contents. In these illustrations you will find the instructions indicating which parts require specified tightening torque, oil, grease or a locking agent during assembly.

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## **General Information**

#### **Table of Contents**

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#### **1-2 GENERAL INFORMATION**

#### **Before Servicing**

Before starting to perform an inspection service or carry out a disassembly and reassembly operation on a motorcycle, read the precautions given below. To facilitate actual operations, notes, illustrations, photographs, cautions, and detailed descriptions have been included in each chapter wherever necessary. This section explains the items that require particular attention during the removal and reinstallation or disassembly and reassembly of general parts.

#### Especially note the following:

(1) Dirt

Before removal and disassembly, clean the motorcycle. Any dirt entering the engine will shorten the life of the motorcycle. For the same reason, before installing a new part, clean off any dust or metal filings.

(2) Battery Ground

Disconnect the ground (-) wire from the battery before performing any disassembly operations on the motorcycle. This prevents the engine from accidentally turning over while work is being carried out, sparks from being generated while disconnecting the wires from electrical parts, as well as damage to the electrical parts themselves. For reinstallation, first connect the positive wire to the positive (+) terminal of the battery

(3) Installation, Assembly

Generally, installation or assembly is the reverse of removal or disassembly. However, if installation or assembly sequence is given in this Service Manual, follow it. Note parts locations and cable, wire, and hose routing during removal or disassembly so they can be installed or assembled in the same way. It is preferable to mark and record the locations and routing whenever possible.

(4) Tightening Sequence

When installing bolts, nuts, or screws for which a tightening sequence is given in this Service Manual, make sure to follow the sequence. When installing a part with several bolts, nuts, or screws, start them all in their holes and tighten them to a snug fit, thus ensuring that the part has been installed in its proper location. Then, tighten them to the specified torque in the tightening sequence and method indicated. If tightening sequence instructions are not given, tighten them evenly in a cross pattern. Conversely, to remove a part, first loosen all the bolts, nuts, or screws that are retaining the part a 1/4-turn before removing them.

(5) Torque

When torque values are given in this Service Manual, use them. Either too little or too much torque may lead to serious damage. Use a good quality, reliable torque wrench.

(6) Force

Common sense should dictate how much force is necessary in assembly and disassembly. If a part seems especially difficult to remove or install, stop and examine what may be causing the problem. Whenever tapping is necessary, tap lightly using a wooden or plastic-faced mallet. Use an impact driver for screws (particularly for the removing screws held by non-permanent locking agent) in order to avoid damaging the screw heads.

(7) Edges

Watch for sharp edges, as they could cause injury through careless handling, especially during major engine disassembly and assembly. Use a clean piece of thick cloth when lifting the engine or turning it over.

(8) High-Flash Point Solvent

A high-flash point solvent is recommended to reduce fire danger. A commercial solvent commonly available in North America is standard solvent (generic name). Always follow manufacturer and container directions regarding the use of any solvent.

(9) Gasket, O-Ring

Replace a gasket or an O-ring with a new part when disassembling. Remove any foreign matter from the mating surface of the gasket or O-ring to ensure a perfectly smooth surface to prevent oil or compression leaks.

(10)Liquid Gasket, Locking Agent

Clean and prepare surfaces where liquid gasket or non-permanent locking agent will be used. Apply them sparingly. Excessive amount may block engine oil passages and cause serious damage.

#### **Before Servicing**

#### (11) Press

When using a press or driver to install a part such as a wheel bearing, apply a small amount of oil to the area where the two parts come in contact to ensure a smooth fit.

(12) Ball Bearing and Needle Bearing

Do not remove a ball bearing or a needle bearing unless it is absolutely necessary. Replace any ball or needle bearings that were removed with new ones. Install bearings with the manufacturer and size marks facing out, applying pressure evenly with a suitable driver. Apply force only to the end of the race that contacts the press fit portion, and press it evenly over the base component.

(13)Oil Seal and Grease Seal

Replace any oil or grease seals that were removed with new ones, as removal generally damages seals. Oil or grease seals should be pressed into place using a suitable driver, applying a force uniformly to the end of seal until the face of the seal is even with the end of the hole, unless instructed otherwise. When pressing in an oil or grease seal which has manufacturer's marks, press it in with the marks facing out.

(14)Circlip, Retaining Ring, and Cotter Pin

When installing circlips and retaining rings, take care to compress or expand them only enough to install them and no more. Install the circlip with its chamfered side facing load side as well.

Replace any circlips, retaining rings, and cotter pins that were removed with new ones, as removal weakens and deforms them. If old ones are reused, they could become detached while the motorcycle is driven, leading to a major problem.

(15)Lubrication

Engine wear is generally at its maximum while the engine is warming up and before all the sliding surfaces have an adequate lubricative film. During assembly, make sure to apply oil to any sliding surface or bearing that has been cleaned. Old grease or dirty oil could have lost its lubricative quality and may contain foreign particles that act as abrasives; therefore, make sure to wipe it off and apply fresh grease or oil. Some oils and greases in particular should be used only in certain applications and may be harmful if used in an application for which they are not intended.

(16)Direction of Engine Rotation

To rotate the crankshaft manually, make sure to do so in the direction of positive rotation. Positive rotation is counterclockwise as viewed from the left side of the engine. To carry out proper adjustment, it is furthermore necessary to rotate the engine in the direction of positive rotation as well.

(17) Replacement Parts

When there is a replacement instruction, replace these parts with new ones every time they are removed.

Replacement parts will be damaged or lose their original function once they are removed. Therefore, always replace these parts with new ones every time they are removed. Although the previously mentioned gasket, O-ring, ball bearing, needle bearing, grease seal, oil seal, circlip, and cotter pin have not been so designated in their respective text, they are replacement parts.

(18) Electrical Wires

All the electrical wires are either one-color or two-color. A two-color wire is identified first by the primary color and then the stripe color. For example, a yellow wire with thin red stripes is referred to as a "yellow/red" wire; it would be a "red/yellow" wire if the colors were reversed. Unless instructed otherwise, electrical wires must be connected to wires of the same color.

#### **Two-Color Electrical**

Wire(cross-section)	Color Indicated on the Wire	Color Indicated on the Wiring Diagram
Red Wire Strands Yellow Red	Yel∣ow∕Red	Y / R

#### **Before Servicing**

#### (19)Inspection

When parts have been disassembled, visually inspect these parts for the following conditions or other damage. If there is any doubt as to the condition of them, replace them with new ones.

Abrasion	Crack	Hardening	Warp
Bent	Dent	Scratch	Wear
Color change	Deterioration	Seizure	

(20)Specifications

Specification terms are defined as follows:

"Standards" show dimensions or performances which brand-new parts or systems have.

"Service Limits" indicate the usable limits. If the measurement shows excessive wear or deteriorated performance, replace the damaged parts.

#### **Model Identification**

#### KLX250-H2 Left Side View



#### KLX250-H2 Right Side View



#### **1-6 GENERAL INFORMATION**

#### Model Identification

#### KLX250-J2 Left Side View



#### KLX250-J2 Right Side View



#### **GENERAL INFORMATION 1-7**

Items	KLX250-H2 ~	KLX250-J2, J4
Dimensions		
Overall Length	2 135 mm (84.1 in.)	2 065 mm (81.3 in.)
Overall Width	885 mm (34.8 in.)	790 mm (31.1 in.)
Overall Height	1 210 mm (47.6 in.)	1 175 mm (46.3 in.)
Wheelbase	1 435 mm (56.5 in.)	1 435 mm (56.5 in.)
Road Clearance	295 mm (11.60 in.)	265 mm (10.4 in.)
Seat Height	885 mm (34.8 in.)	865 mm (34.1 in.)
Dry Mass	119 kg (262 lb)	118 kg (260 lb)
Curb Mass		
Front	63 kg (139 lb)	62 kg (137 lb)
Bear	71  kg (157  lb)	← (10, 10, 10, 10, 10, 10, 10, 10, 10, 10,
Fuel Tank Capacity	8 L (2.11 US gal), (H3 ~ H4) 7.5 L (1.98	8 L (2.11 US gal), (J4)
	US gal), (H5 ~) 7.2 L (1.90 US gal)	7.5 L (1.98 US gal)
Performance		
Minimum Turning Radius	2.3 m (7.55 ft)	<i>←</i>
Engine		
Туре	4-stroke, 1-cylinder, DOHC, 4-valve	←
Cooling System	Liquid-cooled	←
Bore and Stroke	72.0 × 61.2 mm (2.83 × 2.41 in.)	←
Displacement	249 cm <sup>3</sup>	←
Compression Ratio	11 : 1	←
Maximum Horsepower	11.0 kW (15 PS) @8 000 r/min (rpm)	22 kW (30 PS) @8 500 r/min (rpm)
Maximum Torque	16.9 N·m (1.7 kgf·m, 12 ft·lb) @3 000 r/min (rpm)	25.5 N·m (2.6 kgf·m, 18.8 ft·lb) @7 500 r/min (rpm)
Carburetion System	Carburetors, Keihin CVK 34	← (
Starting System	Electric starter motor	←
Ignition System	CDI	←
Timing Advance System	Electronically advanced	←
Ignition Timing	BTDC 10° @1 300 r/min (rpm) ~ BTDC	
-gooden of g	35° @5 000 r/min (rpm)	←
Spark Plugs	NGK CR7E, CR8E, CR9E	·
Valve Timing:		
Inlet:		
Open	BTDC 22°	←
Close	ABDC 62°	←
Duration	264°	←
Exhaust:		
Open	BBDC 61°	←
Close	ATDC 19°	. ← ·
Duration	260°	←
Lubrication System	Forced lubrication (wet sump)	, →
,		

ltems	KLX250-H2 ~	KLX250-J2, J4
Engine Oil:		
Туре	API SE, SF or SG	←
	(On and after KLX250-H3)	(J4) API SE, SF or SG
	API SE, SF or SG API SH or SJ with JASO MA	API SH or SJ with JASO MA
Viscosity	SAE10W-40, 10W-50,	← `
	20W-40, or 20W-50	←
	(On and after KLX250-H3) SAE10W-40	(J4) SAE 10W-40
Capacity	1.5 L (1.59 US qt) (when engine is completely dry)	←
Drive Train		
Primary Reduction System:		
Туре	Gear drive	←
Reduction Ratio	2.863 (63/22)	←
Clutch Type	Wet multi disc	←
Transmission:		
Туре	6-speed, constant mesh, return shift	←
Gear Ratios:		
1st	3.000 (30/10)	←
2nd	2.000 (30/15)	←
3rd	1.500 (27/18)	←
4th	1.250 (25/20)	←
5th	1.050 (21/20)	←
6th	0.904 (19/21)	←
Final Drive System:		
Туре	Chain drive	←
Reduction Ratio	3.000 (42/14)	2.785 (39/14)
Overall Drive Ratio	7.772 @Top gear	7.217
Frame		
Туре	Tubular, semi-double cradle	←
Caster (Rake Angle)	26.5°	25.5°
Trail	107 mm (4.21 in.)	74 mm (2.91 in.)
Front Tire:		
Туре	Tube type	←-
Size	3.00-21 51P	110/70-17 54H
Rear Tire:		
Туре	Tube type	←
Size	4.60-18 63P	130/70-17 62H
Front Suspension:		
Туре	Telescopic fork	←
Wheel Travel	285 mm (11.2 in.)	←
Rear Suspension:		
Туре	Swingarm (Uni-trak)	←
Wheel Travel	280 mm	←

ltems	KLX250-H2 ~	KLX250-J2, J4
Brake Type:		
Rear	Single disc brake	$\leftarrow$
Electrical Equipment		
Battery	12 V 6 Ah Maintenance Free (MF) battery	$\leftarrow$
Headlight:		
Туре	Semi-sealed beam	$\leftarrow$
Bulb	12 V 60/55 W (quartz-halogen)	←
Tail/Brake Light	12 V 5/21 W	←-
Alternator:		·
Туре	Three-phase AC	$\leftarrow$
Rated Output	15 A - 14 V @7 000 r/min (rpm)	$\leftarrow$

#### **1-10 GENERAL INFORMATION**

#### **General Specifications**

Items	KLX250H6F ~
Dimensions	
Overall Length	2 135 mm (84.1 in.)
Overall Width	885 mm (34.8 in.)
Overall Height	1 210 mm (47.6 in.)
Wheelbase	1 435 mm (56.5 in.)
Road Clearance	295 mm (11.6 in.)
Seat Height	885 mm (34.8 in.)
Dry Mass	119 kg (262 lb)
Curb Mass:	
Front	63 kg (139 lb)
Rear	71 kg (157 lb)
Fuel Tank Capacity	7.2 L (1.90 US gal)
Performance	
Minimum Turning Radius	2.3 m (7.55 ft)
Engine	
Туре	4-stroke, 1-cylinder, DOHC, 4-valve
Cooling System	Liquid-cooled
Bore and Stroke	72.0 × 61.2 mm (2.83 × 2.41 in.)
Displacement	249 cm <sup>3</sup>
Compression Ratio	11 : 1
Maximum Horsepower	-
Maximum Torque	_
Carburetion System	Carburetors, Keihin CVK 34
Starting System	Electric starter motor
Ignition System	CDI
Timing Advance System	Electronically advanced
Ignition Timing	BTDC 10° @1 300 r/min (rpm) ~ BTDC 35° @5 000 r/min (rpm)
Spark Plugs	NGK CR7E, CR8E, CR9E
Valve Timing:	
Inlet:	
Open	BTDC 22°
Close	ABDC 62°
Duration	264°
Exhaust:	
<ul> <li>Open</li> </ul>	BBDC 61°
Close	ATDC 19°
Duration	260°
Lubrication System	Forced lubrication (wet sump)
Engine Oil:	
Туре:	
(KLX250H6F)	API SE, SF or SG
	API SH or SJ with JASO MA

Items	KLX250H6F ~
(KLX250H7F)	API SE, SF or SG
	API SH SJ or SL with JASO MA
Viscosity	SAE10W-40
Capacity	1.5 L (1.59 US qt) (when engine is completely dry)
Drive Train	
Primary Reduction System:	
Туре	Gear drive
Reduction Ratio	2.800 (84/30)
Clutch Type	Wet multi disc
Transmission:	
Туре	6-speed, constant mesh, return shift
Gear Ratios:	
1st	3.000 (30/10)
2nd	2.000 (30/15)
3rd	1.500 (27/18)
4th	1.250 (25/20)
5th	1.050 (21/20)
6th	0.904 (19/21)
Final Drive System:	
Туре	Chain drive
Reduction Ratio	3.000 (42/14)
Overall Drive Ratio	7.600 @Top gear
Frame	
Туре	Tubular, semi-double cradle
Caster (Rake Angle)	26.5°
Trail	107 mm (4.21 in.)
Rim Size:	
Front	21 × 1.60
Rear	18 × 2.15
Front Tire:	
Туре	Tube type
Size	3.00-21 51P
Rear Tire:	
Туре	Tube type
Size	4.60-18 63P
Front Suspension:	
Туре	Telescopic fork
Wheel Travel	285 mm (11.2 in.)
Rear Suspension:	
Туре	Swingarm (Uni-trak)
Wheel Travel	280 mm (11.0 in.)
Brake Type:	
Front	Single disc brake
Rear	Single disc brake

#### 1-12 GENERAL INFORMATION

#### **General Specifications**

Items	KLX250H6F ~	
Electrical Equipment		
Battery	12 V 6 Ah	
Headlight:		
Туре	Semi-sealed beam	
Bulb	12 V 60/55 W (quartz-halogen)	
Tail/Brake Light	12 V 5/21 W	
Alternator:		
Туре	Three-phase AC	
Rated Output	15 A - 14 V @7 000 r/min (rpm)	

Specifications subject to change without notice, and may not apply to every country. US: United States

#### **Periodic Maintenance Chart**

The scheduled maintenance must be done in accordance with this chart to keep the motorcycle in good running condition. The initial maintenance is vitally important and must not be neglected.

FREQUENCY	Whichever				*Od	omete	er Rea	ading
	comes	→ × 1 000 k				0 km		
		1	6	12	18	24	30	36
OPERATION	Every	(0.6)	(4)	(7.5)	(12)	(15)	(20)	(24)
Spark plug - clean and gap †			•	•	•	•	•	•
Valve clearance - inspect †				•		•		•
Air cleaner element - clean† #				•		•		•
Throttle grip play - inspect †		•		•		•		•
Idle speed - adjust †		•		•		•		•
Coolant - change	2 years					•		
Water hoses, connections - inspect †		•						
Engine oil - change #	6 months	•	•	•	•	•	•	•
Oil filter - replace		•		•		•		•
Clutch - adjust †		•	•	•	•	•	•	•
Drive chain wear - inspect †			•	•	•	•	•	•
Drive chain - lubricate	600 km							
Drive chain slack - inspect †#	1 000 km							
Brake lining or pad wear - inspect † #			٠	•	•	•	•	•
Brake fluid level - inspect †	month	•	•	•	•	•	•	•
Brake fluid - change	2 years					•		
Brake master cylinder cup and dust cover - replace	4 years							
Caliper fluid seal and dust seal - replace	4 years							
Brake play - inspect †		•	•	•	•	•	•	•
Brake light switch - inspect †		•	•	•	•	•	•	•
Steering play - inspect †		•	•	•	•	•	•	•
Steering stem bearing - lubricate	2 years					•		
Front fork oil - change	2 years					•		
Rear shock absorber oil leak - inspect †				•		•		•
Front fork oil leak - inspect †				•		•		•
Tire wear - inspect †			•	•	•	•	•	•
Spoke tightness and rim runout - inspect †		•	•	•	•	•	•	•
Swingarm pivot - lubricate				•		•		•
General lubrication - perform		•		•		•		•
Nut, bolt, and fastener tightness - inspect †		•		•		•		•

#: Service more frequently when operating in severe conditions; dusty, wet, muddy, high speed, or frequent starting/stopping.

\*: For higher odometer readings, repeat at the frequency interval established here.

†: Replace, add, adjust, clean, or torque if necessary.

#### **1-14 GENERAL INFORMATION**

#### **Torque and Locking Agent**

The following tables list the tightening torque for the major fasteners, and fasteners or parts requiring use of a non-permanent locking agent or liquid gasket.

Letters used in the "Remarks" column mean:

HL: Apply a high-lock agent (high-adhesion locking agent with medium strength) to the threads.

L: Apply non-permanent locking agent to the threads.

O: Apply engine oil to the threads of nut and seating surface.

S: Tighten the fasteners following the specified sequence.

Factorer		Domorko		
Fastener	N∙m <sup>°</sup>	kgf∙m	ft·lb	Remarks
Cooling System				
Water Pump Cover Bolts	9.8	1.0	87 in⋅lb	
Water Pump Impeller Nut	7.8	0.8	69 in⋅lb	
Coolant Drain Plug	25	2.5	18	
Thermostat Housing Cap Bolts	9.8	1.0	87 in∙lb	
Elbow (Water Pipe) Mounting Bolts	9.8	1.0	87 in⋅lb	
Radiator Fan Switch	8.8	0.9	78 in⋅lb	
Water Temperature Sensor	8.8	0.9	78 in⋅lb	
Engine Top End				
Air Suction Valve Cover Bolts	9.8	1.0	87 in⋅lb	
Cylinder Head Cover Bolts	7.8	0.8	69 in∙lb	
Spark Plug	13	1.3	115 in·lb	
Camshaft Cap Bolts	12	1.2	104 in lb	S
Camshaft Sprocket Bolts	9.8	1.0	87 in⋅lb	L
Cylinder Head Bolts $\phi$ 6	12	1.2	104 in lb	S
Cylinder Head Allen Bolt (First Torquing)	15	1.5	11	S
Cylinder Head Allen Bolts (Standard Torquing)	46	4.7	34	S
Hose Fitting	13	1.3	115 in⋅lb	L
Camshaft Chain Guide Mounting Bolt	25	2.5	18	
Camshaft Chain Guide Bracket Bolt	9.8	1.0	87 in⋅lb	
Carburetor Holder Mounting Bolt	12	1.2	104 in⋅lb	
Camshaft Chain Tensioner Mounting Bolts	9.8	1.0	87 in⋅lb	
Camshaft Chain Sub Tensioner Bolt	15	1.5	11	
Inspection Plug	2.5	0.25	22 in⋅lb	
Rotor Plug	2.5	0.25	22 in⋅lb	
Engine Right Side/Left Side				
Engine Oil Drain Plug	15	1.5	11	
Clutch Hub Nut	78	8.0	58	L
Clutch Spring Bolts	7.8	0.8	69 in lb	
Shift Drum Cam Allen Bolt	12	1.2	104 in⋅lb	L -
Return Spring Pin	37	3.8	27	L
Primary Gear Nut	98	10	72	
Alternator Flywheel Bolt	118	12	87	L
Kick Ratchet Guide Bolt	9.8	1.0	87 in⋅lb	HL
External Shift Mechanism Cover Bolts and Nut	9.8	1.0	87 in⋅lb	L
External Shift Mechanism Cover Screw	5.4	0.55	48 in lb	
Gear Set Lever Nut	9.8	1.0	87 in⋅lb	

#### **GENERAL INFORMATION 1-15**

## Torque and Locking Agent

Fastana	Torque			Demontra	
Fastener	Fastener N⋅m kgf⋅m		ft⋅lb	nemarks	
Neutral Switch	15	1.5	11	L	
Exhaust Pipe Holder Nuts	25	2.5	18	L	
Clutch Cover Bolts	9.8	1.0	87 in∙lb		
Clutch Cable Mounting Bolts	9.8	1.0	87 in∙lb		
Right Engine Cover Bolts (M6 - 8)	9.8	1.0	87 in⋅lb		
Right Engine Cover Bolts (M6 - 2)	15	1.5	11		
Alternator Cover Bolts	9.8	1.0	87 in⋅lb		
Torque Limiter Cover Bolts	12	1.2	104 in⋅lb		
Engine Lubrication System					
Engine Oil Drain Plug	15	1.5	11		
Oil Pressure Relief Valve	15	1.5	11	L	
Oil Pipe Banjo Bolt $\phi$ 8	9.8	1.0	87 in∙lb		
Oil Pipe Banjo Bolt $\phi$ 10	20	2.0	14.5		
Oil Pump Mounting Screws	5.4	0.55	48 in⋅lb		
Engine Removal/Installation					
Swing Arm Pivot Shaft Nut	88	9.0	65		
Engine Mounting Bracket Nuts	44	4.5	33		
Engine Mounting Nuts	44	4.5	33		
Cylinder Head Bracket Bolts $\phi$ 8	23	2.3	17		
Cylinder Head Bracket Bolts $\phi$ 10	44	4.5	33		
Crankshaft/Transmission					
Shift Drum Bearing Retainer Bolts	9.8	1.0	87 in∙lb		
Right Cover Bolts (M6 - 8)	9.8	1.0	87 in∙lb		
Right Cover Bolts (M6 - 2)	15	1.5	11		
Gear Set Lever Nut	9.8	1.0	87 in∙lb		
Shift Drum Cam Allen Bolt	12	1.2	104 in⋅lb		
Wheels/Tires					
Front Axle	88	9.0	65		
Front Axle Clamp Nuts	8.8	0.9	78 in₁lb		
Rear Axle Nut	108	11	80		
Spoke Nipples	Not less than 1.5	Not less than 0.15	Not less than 13 in·lb		
Final Drive					
Engine Sprocket Nut (KLX250-H5 ~ H7, H6F)	127	13	94	0	
Engine Sprocket Cover Bolts	9.8	1.0	87 in⋅lb		
Rear Sprocket Nuts	32	3.3	24		
Swing Arm Pivot Shaft Nut	88	9.0	65		
Tie-Rod Upper Mounting Nut	83	8.5	61		
Rear Axle Nut	108	11	80		
Brakes					
Brake Hose Banjo Bolts	34	3.5	25		
Reservoir Cap Screws (Front, Rear)	1.5	0.15	13 in⋅lb		

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#### 1-16 GENERAL INFORMATION

#### Torque and Locking Agent

		<b>B</b>		
Fastener	N∙m	kgf∙m	ft∙lb	Remarks
Brake Lever Pivot Locknut	5.9	0.6	52 in⋅lb	
Front Master Cylinder Clamp Bolts	8.8	0.9	78 in∙lb	
Rear Master Cylinder Mounting Screws	7.8	0.8	69 in∙ļb	×
Caliper Bleed Valves (Front, Rear)	7.8	0.8	69 in∙lb	
Brake Disc Mounting Bolt (Front, Rear)	23	2.3	16.5	
Caliper Mounting Bolts (Front, Rear)	25	2.5	18	
Rear Brake Push Rod Locknut	18	1.8	13	
Brake Pad Bolts (Front, Rear)	18	1.8	13	
Brake Pipe Joint Bolt	9.8	1.0	87 in∙lb	
Brake Pipe Joint Bolt (KLX250-H6 ~ H7, H6F)	15	1.5	87 in∙lb	
Front Brake Light Switch Mounting Bolt	1.2	0.12	10 in⋅lb	
Suspension				
Front Top Plug Screw	1.3	0.13	12 in⋅lb	
Front Top Plug	29	3.0	22	
Front Fork Clamp Bolts (Upper)	20	2.0	14.5	
Front Fork Clamp Bolts (Lower)	25	2.5	18	
Push Rod Nut	15	1.5	11	
Front Fork Protector Mounting Bolt	9.8	1.0	87 in lb	
Front Fork Cylinder Valve (ASSY)	54	5.5	40	L
Front Axle Clamp Nuts	9.8	1.0	87 in∙lb	
Rear Shock Absorber Upper Mounting Bolt	39	4.0	29	
Rear Shock Absorber Lower Mounting Nut	39	4.0	29	
Swing Arm Pivot Shaft Nut	88	9.0	65	
Rocker Arm Pivot Nut	98	10	72	
Tie-Rod Mounting Nuts (Upper, Lower)	83	8.5	61	
Steering		1		
Handlebar Clamp Bolts	25	2.5	18	S ·
Steering Stem Head Nut	44	4.5	33	
Front Fork Clamp Bolts (Upper)	20	2.0	14.5	
Front Fork Clamp Bolts (Lower)	25	2.5	18	
Steering Stem Locknut	Hand	Hand	Hand	
· ·	-Tighen	-Tighen	-Tighen	
	(about 4.9)	(about 0.5)	(about 43 in.lh)	
Electrical System			·	
Spark Plugs	13	1.3	115 in lb	
Alternator Flywheel Bolt	118	12	87	
Stator Coil Mounting Bolts	5.9	0.6	52 in⋅lb	
Crankshaft Sensor Mounting Screws	2.5	0.25	22 in lb	
Starter Motor Terminal Locknut	6.9	0.7	61 in lb	
Starter Motor Terminal Nut	4.9	0.5	43 in lb	
Starter Relay Terminal Screw	4.9	0.5	43 in lb	
Starter Motor Assembly Bolt	4.9	0.5	43 in lb	
Starter Motor Mounting Bolts	9.8	1.0	87 in⋅lb	

#### Torque and Locking Agent

Factor en		Domorko		
Fastener	N∙m	kgf∙m	ft∙lb	nemarks
Starter Motor Clutch Bolt	12	1.2	104 in⋅lb	HL
Igniter Mounting Bolts	4.9	0.5	43 in⋅lb	
Regulator Mounting Bolts	9.8	1.0	87 in∙lb	
Ignition Coil Mounting Bolts	9.8	1.0	87 in∙lb	

The table on the right, relating tightening torque to thread diameter, lists the basic torque for the bolts and nuts. Use this table for only the bolts and nuts which do not require a specific torque value. All of the values are for use with dry solvent-cleaned threads.

Threads	Torque				
dia.(mm)	N∙m	kgf∙m	ft·lb		
5	3.4 ~ 4.9	0.35 ~ 0.50	30 ~ 43 in⋅lb		
6	5.9 ~ 7.8	0.60 ~ 0.80	52 ~ 69 in·lb		
8	14 ~ 19	1.4 ~ 1.9	10.0 ~ 13.5		
10	25 ~ 34	2.6 ~ 3.5	19.0 ~ 25		
12	44 ~ 61	4.5 ~ 6.2	33 ~ 45		
14	73 ~ 98	7.4 ~ 10.0	54 ~ 72		
16	115 ~ 155	11.5 ~ 16.0	83 ~ 115		
18	165 ~ 225	17.0 ~ 23.0	125 ~ 165		
20	225 ~ 325	23 ~ 33	165 ~ 240		

#### **Basic Torque for General Fasteners**

#### **1-18 GENERAL INFORMATION**

#### **Technical Information - Digital Meter**

#### **Operating Principles**

OThe speed sensor [A] attached to the front wheel hub comprises a magnet [B] and a Hall element [C].

Meter [D] Direction of rotation [E] Front side [F]

- OThe rotation of the wheel causes the magnet, which meshes with the wheel inside the speed sensor, to rotate and produce a change in the magnetic field [A]. The resulting Hall effect generates voltage pulses [B]. The voltage is read by a meter that displays the speed of the vehicle on an LCD.
- OThe "Hall element" refers to a semiconductor device made with GaAs (gallium arsenide), InAs (indium arsenide), or InSb (indium antimonide). The Hall effect, which occurs specifically in these devices, in utilized in the operation of ammeters and voltmeters. The "Hall effect" is a phenomenon in which a voltage [D] is generated in a direction perpendicular to the current and the magnetic field when a current [B] is passed to a Hall element [A] and when a magnetic field [C] is applied in a direction perpendicular to the Hall element.

#### How to Use the Digital Meter

- OEven when the ignition switch is off, the clock continues to run on battery. If the vehicle is not used for a long period of time (approximately three months), the battery becomes depleted. When a motorcycle is not used for a long time, the battery should be removed from the car and stored in an appropriate place.
- OTurning the ignition switch off clears speedometer, odometer, and trip meter displays. Although this erases any information contained in the memory for the speedometer, the odometer and trip meter memory contents are preserved.
- OEven when the ignition switch is off, the clock continues to display time. However, disconnecting the battery erases any clock display and memory contents. When the battery is reconnected, the clock starts ticking by displaying a time "1.00".
- ORemoving the battery erases trip meter memory while preserving odometer memory contents.







#### **Technical Information - Digital Meter**

#### NOTE

OIn case the Liquid Crystal Display (LCD) malfunctions, e.g., display freezing, wait 30 seconds or more after disconnecting it from the battery. The LCD will function normally after reconnected.

OThe meter displays and button positions are as follows: **Speedometer** 

#### Display Range: 0 to 150 km/h (93.6 mile)

ODisplays speed [A] constantly with the ignition switch turned ON. Displays "188 km/h" (all segments) for a few seconds immediately after the ignition switch has been turned ON, in order to check the operation of the display panel.

#### Odometer [B]

#### Display Range: 0 to 99999 km

OThis display is shared with the clock function. An ODO/CLOCK button [C] is provided to toggle between the two displays. It displays the clock immediately after the battery has been connected.

#### Clock

Display Range: 1:00 to 12:59; 12-hour display without AM/PM distinction. (hours) : (minutes)

#### **Minimum Display Unit: 1 minutes**

OThis display is shared with the odometer function. An ODO/CLOCK button [C] is provided to toggle between the functions. Immediately after the ignition switch has been turned ON, it displays the clock [J] with its center segment flashing.

#### Trip meter [D]

Displays: Two displays are provided, Trip A and Trip B. A TRIP A/B [E] button is provided to toggle between the two displays. Display Range: Trip A: 0.0 to 999.9 km

Trip B: 0 to 9999 km

Olmmediately after the ignition switch has been turned ON, the Trip A display shows "0.0", and starts counting the driven distance.

#### **ODO/CLOCK Button**

OToggles between the odometer and clock displays.









#### **1-20 GENERAL INFORMATION**

#### **Technical Information - Digital Meter**

#### **TRIP A/B Button**

- OTo toggle [H] between the Trip A and Trip B displays, press the TRIP A/B button less than 2 seconds and release it.
- Pressing the switch longer than 2 seconds resets the trip meter display to "0".

#### **Clock Setting**

- Press the ODO/CLOCK button [C] to show the clock in the odometer display.
- Keep the ODO/CLOCK button pressed and turn the TRIP A/B button [E] ON to enable the display to assume the Hour/Minute setting mode [I] in which the numbers flash, thus enabling you to set the time on the clock.
- OStarting with the Hour/Minute setting mode, each pressing on the ODO/CLOCK button changes the setting modes as follows:

Hour/Minute Setting Mode  $\rightarrow$  Hour Setting Mode  $\rightarrow$  Minute Setting Mode  $\rightarrow$  Hour/Minute Setting Mode

- OIn the Hour/Minute setting mode, the numbers that represent the hours and the minutes flash. In the Hour setting mode, the numbers [F] that represent the hours flash. And in the Minute setting mode, the numbers [G] that represent the minutes flash.
- In the Hour setting mode and the Minute setting mode, set the time by pressing the TRIP A/B button to increase the number of Hours and Minutes.
- Then, change to the Hour/Minute setting mode and press the TRIP A/B button to complete the time setting process.







#### **GENERAL INFORMATION 1-21**

#### **Technical Information - Digital Meter**

(Digital Meter System Diagram)



- 1. Battery
- 2. Ignition Switch
- 3. 9-Pin Connector
- 4. Ground Lead
- 5. Diode
- 6. Speed Sensor
- 7. Speed Sensor Power Lead
- 8. Speed sensor Output Lead

- 9. Speed Sensor Ground Lead
- 10. 3-Pin Connector
- 11. Digital Meter Unit
- 12. Microprocessor
- 13. LCD (Liquid Crystal Display) Unit 14. ODO/CLOCK Button
- 15. TRIP A/B Button

#### **1-22 GENERAL INFORMATION**

#### Cable, Wire, and Hose Routing

#### KLX250-H2/J2 ~ H4/J4 Model



- 1. Horn
- 2. Hang the junction to the hook.
- 3. To the Front Brake Light Switch
- 4. From the Engine Stop Switch.
- 5. Fix the harness and cover.
- 6. Hang the harness to the hook.
- 7. Align the white mark on the harness to the part of hook.
- 8. Hang the harness to the hook.
- 9. Radiator Fan Switch Relay
- 10. Fix the terminal cover and lead wire with the fender clamp.
- 11. Fix the lead wires with the clamp without looseness.
- 12. Right Turn Signal Lead
- 13. License Light Lead
- 14. Tail/brake Light Lead
- 15. Left Turn Signal Lead
- 16. Condenser
- 17. Route the ignition coil lead under the ignition coil so that it shall be not pressed.
- 18. Tighten the ground terminal together with the clamp.

- 19. Run the engine stop switch lead through the clamp as figure (page 1-24) at the right back side of the head pipe.
- 20. Run the engine stop switch lead in front of the radiator connection hose.
- 21. Run the engine stop switch lead under the main harness.
- 22. Run the engine stop switch lead outside of negative lead of the ignition coil and connect it.
- 23. Tighten it together with the coupler of ignition switch with clamp.
- 24. Run the fan switch lead through the center of screen.
- 25. Run the fan switch lead through the chamfered part of screen.
- 26. Fix the radiator fan switch lead with the clamp.
- 27. Radiator Fan Switch
- 28. Brake Light Switch

#### Cable, Wire, and Hose Routing

#### KLX250-H5 Model



- 1. Horn
- 2. Hang the junction to the hook.
- 3. Fix the harness and cover.
- 4. Hang the harness to the hook.
- 5. Align the white mark on the harness to the part of hook.
- 6. Hang the harness to the hook.
- 7. Radiator Fan Switch Relay
- 8. Fix the terminal cover and lead wire with the fender clamp.
- 9. Fix the lead wires with the clamp without looseness.
- 10. Right Turn Signal Lead
- 11. License Light Lead
- 12. Tail/brake Light Lead
- 13. Left Turn Signal Lead
- 14. Stater Relay
- 15. Route the ignition coil lead under the ignition coil so that it shall be not pressed.
- 16. Run the engine stop switch lead outside of negative lead of the ignition coil and connect it .
- 17. Tighten it together with the coupler of ignition switch.
- 18. Tighten the ground terminal together with the clamp.
- 19. Run the fan switch lead through the center of screen.
- 20. Run the fan switch lead through the chamfered part of screen.
- 21. Fix the radiator fan switch lead with the clamp
- 22. Radiator Fan Switch
- 23. Brake Light Switch
- 24. Brake Light Switch Spring (Rolling side to be upper)

#### **1-24 GENERAL INFORMATION**

#### Cable, Wire, and Hose Routing

#### Australia Model



- 1. Throttle Cables
- 2. Route the brake hose between the handlebar and throttle cables.
- 3. Meter Bracket
- 4. Brake Hose
- 5. Handlebar
- 6. Left Switch Housing Lead
- 7. Clutch cable go through between the handlebar and brake hose at the left side of the head pipe, main harness and speedometer cable at the back side of the left switch housing lead and left turn signal lead, and go across from left side to right side at the front of the head pipe.
- 8. Left Turn Signal Light Lead
- 9. Head Pipe
- 10. Speedometer cable go through the left side of main harness and the right side of clutch cable, the back side of the left switch housing and left turn signal lead, and go across from left side to right side at the front of the head pipe.
- 11. Hang the clamp to the meter bracket at the place of the white mark on the main harness, and fix the main harness.
- 12. Main Harness
- 13. Turn Signal Light Leads
- 14. Speedometer Cable
- 15. Clutch Cable

#### Cable, Wire, and Hose Routing

#### Other than Australia Model



- 1. Throttle Cables
- 2. Route the brake hose between the handlebar and throttle cables.
- 3. Meter Bracket
- 4. Brake Hose
- 5. Handlebar
- 6. Left Switch Housing Lead
- 7. Clutch cable go through between the handlebar and brake hose at the left side of the head pipe, main harness and speedometer cable at the back side of the left switch housing lead and left turn signal lead, and go across from left side to right side at the front of the head pipe.
- 8. Left Turn Signal Light Lead
- 9. Head Pipe
- 10. Speedometer cable go through the left side of main harness and the right side of clutch cable, the back side of the left switch housing and left turn signal lead, and go across from left side to right side at the front of the head pipe.
- 11. Hang the clamp to the meter bracket at the place of the white mark on the main harness, and fix the main harness.
- 12. Main Harness
- 13. Turn Signal Light Leads
- 14. Clutch Cable
- 15. Speedometer Cable

#### **1-26 GENERAL INFORMATION**

#### Cable, Wire, and Hose Routing



- 1. Turn Signal Light relay
- 2. Clamp
- 3. Head Pipe
- 4. White Mark on the Main Harness (Align the mark on the bracket)
- 5. Ignition Switch
- 6. Right Switch Housing Lead
- 7. Main Harness
- 8. Fix the ignition switch, left/right switch housings and starter locknut switch leads through the upper hole of bracket.
- 9. Left Switch Housing Lead Connector
- 10. Starter Lockout Switch Lead Connector
- 11. Starter Lockout Switch Lead
- 12. Left Switch Housing Lead
- 13. To the Meters

- 14. Fix the meter leads and ignition switch lead with clamp.
- 15. Fix the ignition switch lead, left/right switch housing leads, starter lockout switch connector and leads with clamp.
- 16. Connector for Meter Indicator Light
- 17. Headlight
- 18. Turn Signal Light Relay
- 19. Clutch Cable
- 20. Turn Signal Lights
- 21. Right Switch Housing Connector
- 22. Ignition Switch Connector
- 23. Turn Signal Lights
- 24. Joint Connector
- 25. Meter Sensor Lead

#### **GENERAL INFORMATION 1-27**

#### Cable, Wire, and Hose Routing

#### KLX250-H2/J2 ~ H4/J4 Model



- 1. Throttle Cables
- 2. Speedometer Cable
- 3. Clutch Cable
- 4. Engine Stop Switch Lead
- 5. Clamp
- 6. Clamp
- 7. Clamp

#### **1-28 GENERAL INFORMATION**

#### Cable, Wire, and Hose Routing

#### KLX250-H5 Model



- 1. Throttle Cables
- 2. Route the clutch cable inside the clamp.
- 3. Clutch Cable
- 4. Left Switch Housing Lead
- 5. Right Switch Housing Lead

#### **GENERAL INFORMATION 1-29**

#### Cable, Wire, and Hose Routing







- 1. Fix the radiator fan lead with a clamp at outside of the cover so that it does not loose.
- 2. Pass through the radiator fan stay.
- 3. Tighten the clamp to fix the harness and cover together.
- 4. Pass through the notch part of the radiator.
- 5. Tighten the main ground lead together with the engine stop switch ground lead.
- 6. Water Temperature Sensor Lead
- 7. Air Intake Duct
- 8. Pass through the front of frame.
- 9. Regulator/rectifier
- 10. Clamp
- 11. Clamp
- 12. Brake Light Switch
- 13. Alternator
- 14. Assemble the connector cover so that the wide side of it come to down.



- Push the 2p connector and connector cover (black) into between frame and fender.
- 16. License Light Lead (black)
- 17. Tail Light (gray)
- 18. Note: Each lead shall be pushed under the locknuts.
- 19. Fix the connector cover of fuse box to downward.
- 20. Diode
- 21. Fix the wide side of cover to downward
- 22. Radiator Fan Relay
- 23. Starter Relay
- 24. Fuse Box
- 25. Take care the direction of terminal installation, and warp the cover completely.
- 26. Damper
- 27. Side Stand Switch

#### **1-30 GENERAL INFORMATION**

#### Cable, Wire, and Hose Routing



- 1. Tank Drain Hoses
- 2. Route the tank drain tubes inside of the adjuster cable bracket.
- 3. Adjuster Cable Bracket
- 4. Route the tank drain tubes rear side of the adjuster cable.
- 5. Carburetor Adjuster Cable
- 6. Left Shroud
- 7. Main Frame
- 8. Carburetor Drain Tube
- 9. Clamp the harness.
- 10. to Carburetor
- 11. Air Vent Tubes
- 12. Run the tank drain tubes through the inside of the swingarm cross.
## **GENERAL INFORMATION 1-31**

#### Cable, Wire, and Hose Routing



- 1. Band
- 2. Starter Relay
- 3. Frame Pipe (1)
- 4. Rear Fender
- 5. White Connector
- 6. Igniter
- 7. Igniter Lead
- 8. Frame Pipe (2)
- 9. Battery Lead (-) (Route the outside of igniter and igniter lead, and inside of frame pipe (2).)
- 10. Battery
- 11. Radiator Coolant Reservoir
- 12. Battery Lead (+) (Route between frame pipe (1) and battery case beside stater relay, and lead to the backward.)

## **1-32 GENERAL INFORMATION**

#### Cable, Wire, and Hose Routing



- 1. Horn
- 2. Hang the junction to the hook.
- 3. Fix the harness and cover.
- 4. Hang the harness to the hook.
- 5. Align the white mark on the harness to the part of hook.
- 6. Hang the harness to the hook.
- 7. Radiator Fan Switch Relay
- 8. Fix the terminal cover and lead wire with the fender clamp.
- 9. Fix the lead wires with the clamp without looseness.
- 10. Right Turn Signal Lead
- 11. License Light Lead
- 12. Tail/brake Light Lead
- 13. Left Turn Signal Lead
- 14. Stater Relay
- 15. Route the ignition coil lead under the ignition coil so that it shall be not pressed.
- 16. Clamp
- 17. Clamp
- 18. Tighten the ground terminal together with the clamp.
- 19. Run the fan switch lead through the center of screen.
- 20. Run the fan switch lead through the chamfered part of screen.
- 21. Fix the radiator fan switch lead with the clamp.
- 22. Radiator Fan Switch
- 23. Brake Light Switch
- 24. Brake Light Switch Spring (Rolling side to be upper)

#### Cable, Wire, and Hose Routing

#### KLX250-H6 ~ H7, H6F ~ Models (United States, Canada and Australia)



- 1. Throttle Cables
- 2. Route the brake hose between the handlebar and throttle cables.
- 3. Meter Bracket
- 4. Brake Hose
- 5. Handlebar
- 6. Left Switch Housing Lead
- 7. Clutch cable go through between the handlebar and brake hose, and go across the front of the head pipe from the left side to right side.
- 8. Left Turn Signal Light Lead
- 9. Head Pipe
- 10. Speedometer cable go through the left side of main harness and the right side of clutch cable, the back side of the left switch housing and left turn signal lead, and go across from left side to right side the front of the head pipe.
- 11. Hang the clamp to the meter bracket at the place of the white mark on the main harness, and fix the main harness.
- 12. Main Harness
- 13. Turn Signal Light Leads
- 14. Speedometer Cable
- 15. Clutch Cable
- 16. Install the brake hose so that it shall be paralleled to the master cylinder.
- 17. Clamp
- 18. Insert the joint connector into the clamp.

## **1-34 GENERAL INFORMATION**

### Cable, Wire, and Hose Routing

#### KLX250-H6 ~ H7 Models (other than Australia)



- 1. Throttle Cables
- 2. Route the brake hose between the handlebar and throttle cables.
- 3. Meter Bracket
- 4. Brake Hose
- 5. Handlebar
- 6. Left Switch Housing Lead
- 7. Clutch cable go through between the handlebar and brake hose, back side of the left and right switch housing leads and other leads, and go across the front of the head pipe from the left side to right side.
- 8. Left Turn Signal Light Lead
- 9. Head Pipe
- 10. Install the brake hose so that it shall be paralleled to the master cylinder.
- 11. Turn Signal Light Relay

- 12. Ignition Switch Harness
- 13. Meter Sensor Harness
- 14. Meter Harness Connector
- 15. Right Turn Signal Light Lead
- 16. Joint Connector
- 17. Starter Lockout Switch Lead
- 18. Left Turn Signal Light Lead
- 19. Clamp
- 20. Headlight Connector
- 21. Push the meter sensor harness so that it does not loose itself.
- 22. Front Fork Under Bracket
- 23. Speedometer Harness
- 24. Clamp
- 25. Bolt
- 26. Speedometer Harness Routing

## Cable, Wire, and Hose Routing



- 1. Fuel Tank Drain Tubes (Route inside of air suction switch valve tube.)
- 2. Route the fuel tank drain tubes inside of the adjuster cable bracket.
- 3. Adjuster Cable Bracket
- 4. Route the fuel tank drain tubes rear side of the adjuster cable.
- 5. Carburetor Adjuster Cable
- 6. Left Shroud
- 7. Main Frame
- 8. Carburetor Drain Tube
- 9. Clamp the harness
- 10. to Carburetor
- 11. Air Vent Tubes
- 12. Run the fuel tank drain tubes through the inside of the swingarm cross.
- 13. Air Suction Switch Valve Tube

## **1-36 GENERAL INFORMATION**

## Cable, Wire, and Hose Routing



- 1. Band
- 2. Starter Relay
- 3. Frame Pipe (1)
- 4. Rear Fender
- 5. White Connector
- 6. Igniter
- 7. Igniter Lead
- 8. Frame Pipe (2)
- 9. Battery Lead (Route the outside of the igniter and igniter lead, and outside of the frame pipe (2).)
- 10. Battery
- 11. Radiator Coolant Reservoir
- 12. Battery Lead (+) (Route between the frame pipe (1) and battery case besides the starter relay, and lead to the backward.)

#### Cable, Wire, and Hose Routing

#### KLX250-H6 ~ H7, H6F ~ Models



1. Fix the radiator fan lead with a clamp at outside of the cover so that it does not loose.

2. Pass through the radiator fan stay.

3. Tighten the clamp to fix the harness and cover together.

- 4. Pass through the notch part of the radiator.
- 5. Tighten the main ground lead together with the engine stop switch ground lead.
- 6. Turn Signal Light Relay
- 7. Clamp

8. White Mark on the Main Harness (Align the mark on the bracket.)

9. Assemble the connector cover so that the wide side of it direct to downward.

10. Push the 2P connector and connector cover (black) into between the frame and fender.

11. Igniter

12. Push the 2P connector into between the frame and igniter.

- 13. Battery
- 14. Clamp
- 15. Brake Light Switch
- 16. Clamp
- 17. Clamp
- 18. Side Stand Switch

### **1-38 GENERAL INFORMATION**

#### Cable, Wire, and Hose Routing

#### KLX250-H6 ~ H7, H6F ~ Models



- 1. Throttle Cables
- 2. Route the clutch cable inside the clamp.
- 3. Clutch Cable
- 4. Left Switch Housing Lead
- 5. Right Switch Housing Lead
- 6. Coolant Reservoir Hose
- 7. Clamps
- 8. Grip Parting Line (Lattice Side; Front)
- 9. Install the throttle grip housing so that it shall be paralleled to the right switch housing.
- 10. Left Grip Installation Point
- 11. Throttle Grip Installation Point

12. Run the throttle cable inside of fuel tank.

## Cable, Wire, and Hose Routing

## KLX250-H6 ~ H7, H6F ~ Models



- 1. Licence Light Lead (Black)
- 2. Tail Light (Gray)
- 3. Clamps (Insert into rear fender hole.)
- 4. Fix the connector cover of fuse box to downward.
- 5. Diode
- 6. Fix the wide side of cover to downward.
- 7. Radiator Fan Relay
- 8. Starter Relay
- 9. Fuse Box
- 10. Take care the direction of terminal installation, and wrap the cover completely.

:

11. Damper

## **1-40 GENERAL INFORMATION**

#### Cable, Wire, and Hose Routing



- 1. Ignition Switch
- 2. Right Switch Housing Lead
- 3. Main Harness
- 4. Fix the ignition switch, left/right switch housings and starter locknut switch leads through the upper hole of bracket.
- 5. Left Switch Housing Lead Connector
- 6. Starter Lockout Switch Lead Connector
- 7. Starter Lockout Switch Lead
- 8. Left Switch Housing Lead
- 9. To the Meters
- 10. Fix the meter sensor harness, meter leads and ignition switch lead with clamp.
- 11. Fix the ignition switch lead connector, left/right switch housing leads connector, starter lockout switch lead with clamp.
- 12. Connector for Meter Indicator Light
- 13. Headlight
- 14. Turn Signal Light Relay
- 15. Clutch Cable
- 16. Right Turn Signal Lights
- 17. Right Switch Housing Connector
- 18. Ignition Switch Connector
- 19. Left Turn Signal Lights
- 20. Joint Connector
- 21. Meter Sensor Lead

# Cable, Wire, and Hose Routing



- 1. Bind the clamp as shown illustration.
- 2. Clamp
- 3. Air Suction Switch Valve Hose
- 4. Fix the clamp at the left side edge of the cross pipe after binding the air suction switch valve hose.
- 5. Front

## **1-42 GENERAL INFORMATION**

## Cable, Wire, and Hose Routing



- 1. Alternator Lead
- 2. Run the gear position sensor lead together with the alternator lead inside of the left side cover.
- 3. Gear Position Sensor Lead
- 4. Gear Position Sensor

#### Cable, Wire, and Hose Routing



- 1. Radiator (Left)
- 2. Clamp
- 3. Approx 45 mm (1.8 in.)
- 4. Install the clamp for the water temperature sensor connector so that it point to right under, and clamp the connector.
- 5. View from A
- 6. Radiator (Right)
- 7. Fit the clamp into the groove of the radiator boss.
- 8. Clamp
- 9. 75°
- 10. View from B

## **1-44 GENERAL INFORMATION**

## Cable, Wire, and Hose Routing



## Cable, Wire, and Hose Routing

- 1. Hose
- 2. Air Suction Switch Valve
- 3. Hose
- 4. Route the hose along the under the cross pipe.
- 5. Connect the hose to the carburetor vacuum fitting.
- 6. Route the hose along the right side of frame bracket.
- 7. Clamp
- 8. Air Cleaner Housing

9. Hose

- 10. Route the hose above the fuel hose.
- 11. Carburetor
- 12. Align the mark on the air suction switch valve with the one of the hose.

13. View from A.

14. Install the clamp so that the pinch of it point upwards.

15. View from B.

16. Install the hose so that the mark on it come to right side.

17. View from C.

18. Align the mark on the hose with the direction of fitting of the air suction switch valve.

19. Align the mark on the hose with the notch of rubber protector of air suction valve. 20. Approx 20°

21. Air Suction Switch Valve to Hose Connection

2

# **Fuel System**

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## **2-2 FUEL SYSTEM**

## **Exploded View**



- 1. Jet Needle
- 2. Pilot Screw
- 3. Pilot Jet
- 4. Main Jet
- 5. Needle Jet/Bleed Pipe
- 6. Fuel Tap
- 7. KLX250-H2/H3/J2
- 8. On and after KLX250-H4/J4
- AD: Apply an adhesive.
- CL: Apply cable lubricant.
- G: Apply grease

## Exploded View (United Stated and Canada)



- 1. Jet Needle
- 2. Needle Jet
- 3. Needle Jet Holder
- 4. Main Jet
- 5. Pilot Air Screw
- 6. Pilot Jet
- 7. Float Valve
- 8. Float
- 9: Fuel Filter
- 10: Throttle Sensor
- 11: Air Suction Switch Valve

## 2-4 FUEL SYSTEM

## Specifications

Item	Standard	
Throttle Grip and Cables		
Throttle Grip Free Play	2 ~ 3 mm	
Carburetor	KLX250-H	KLX250-J
Make, Type	KEIHIN, CVK34	←
Main Jet	#132, (US) (CA) #118	#120
Main Air Jet	#50	< <u>←</u>
Jet Needle	N1RX, (US) (CA) NFKT	N5AV
Pilot Jet (Slow Jet)	#35	←
Pilot Air Jet (Slow Air Jet)	#145	←
Pilot Screw (Turns out)	2 3/8, (US) (CA) 1 5/8	1 7/8
Starter Jet	#40, (US) (CA) #48	#48
Idle Speed	1300 ±100 rpm	←
Service Fuel Level	$0.5 \pm 1 \text{ mm} (0.02 \pm 0.04 \text{ in.})$ above the mating surface of the carburetor body	0.5 $\pm$ 1 mm (0.02 $\pm$ 0.04 in.) above the mating surface of the carburetor body
Float Level	17 ±2 mm (0.669 ±0.08 in.)	←
High Altitude Setting	Standard	Height 1 200 m (4 000 ft)
Main Jet	#118	#115
Slow (Pilot) Jet	#35	#32
Air Cleaner Element		
Air Cleaner Element Oil	2 stroke-racing oil or high-quality foam air-filter oil	

Special Tools - Fuel Level Gauge: 57001-1017 Jack: 57001-1238 Pilot Screw Adjuster, A: 57001-1239 Fork Oil Level Gauge: 57001-1290 (as required)

US: United States Model CA: Canada Model

### **FUEL SYSTEM 2-5**

#### Throttle Grip and Cables

#### Throttle Grip Free Play Inspection

- Check the throttle grip free play [A].
- $\star$ If the free play is incorrect, adjust the throttle cable.

#### Throttle Grip Free Play Standard: 2 ~ 3 mm (0.08 ~ 0.12 in.)

- Check that the throttle grip moves smoothly from full open to close, and the throttle closes quickly and completely in all steering positions by the return spring.
- ★ If the throttle grip does not return properly, check the throttle cable routing, grip free play, and cable damage. Then lubricate the throttle cable.
- Run the engine at the idle speed, and turn the handlebar all the way to the right and left to ensure that the idle speed does not change.
- ★If the idle speed increase, check the throttle cable free play and the cable routing.

#### Throttle Cable Lubrication and Inspection

- Whenever the cables are removed, or in accordance with the Periodic Maintenance Chart, lubricate the throttle cables (see General Lubrication in the Appendix chapter).
- OApply a thin coating of grease to the cable upper ends.
- OUse a commercially available pressure cable lubricator to lubricate the cables.
- OWith the cable disconnected at both ends, the cable should move freely in the cable housing.





## 2-6 FUEL SYSTEM

#### Carburetor

*Carburetor Disassembly Note (KLX250H6F ~)* • Remove the carburetors.

#### 

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch to OFF. Do not smoke. Make sure the area is well-ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

Remove the pilot screw with spring, washer and O-ring.

- OFor the United States and Canada models, remove the pilot screw plug as follows: punch a hole in the plug and pry there with an awl or other suitable tool.
- OTurn in the pilot screw and count the number of turns until it seats fully but not tightly, and then remove the screw. This is to set the screw to its original position when assembling.

Carburetor Assembly Note (KLX250H6F ~)

#### WARNING

Fuel spilled from the carburetors is hazardous.

#### CAUTION

Do not apply force to the jet or overtighten it, or this could damage the jet or the carburetor body, requiring replacement.

- Turn in the pilot screw [A] fully but not tightly, and then back it out the same number of turns counted during disassembly.
- OFor the United States and Canada models, install the pilot screw plug as follows: install a new plug [B] in the pilot screw hole of the carburetor body [C], and apply a small amount of a bonding agent [D] to the circumference of the plug to fix the plug.

#### CAUTION

Do not apply too much bonding agent to the plug, or the pilot screw itself may be fixed.



## **FUEL SYSTEM 2-7**

## **Fuel Tank**

- Fuel Tank Inspection (On and after KLX250-H4/J4)
- Remove the hoses from the fuel tank, and open the tank cap.
- Check to see if the water drain pipe [A] in the tank are not clogged.
- ★if pipe is clogged, remove the tank and drain it, and then blow pipe free with compressed air.

#### CAUTION

Do not apply compressed air to the air vent holes [B] in the tank cap. This could cause damage and clogging of the labyrinth in the cap.



# **Cooling System**

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## **3-2 COOLING SYSTEM**

#### **Exploded View**



- 1. Left Radiator
- 2. Right Radiator
- 3. Water Temperature Sensor
- 4. Radiator Fan Switch
- 5. Cylinder Head
- 6. Cylinder
- 7. Water Pump Assy
- 8. Right Engine Cover
- 9. Radiator Fan
- 10. Reservoir
- 11. Carburetor Assy
- 12. Fitting (AU Model)
- AU: Australia

- 13. Cooling Hose (AU Model)
- 14. Filter Body (AU Model)
- 15. Water Filter (AU Model)
- 16. Cooling Hose (AU Model)
- 17. Cooling Hose (AU Model)
- 18. Valve Assy (AU Model)
- 19. Cooling Hose (AU Model)
- 20. Fitting (AU Model)
- T1: 7.9 N·m (0.8 kgf·m, 69 in·lb)
- T2: 8.8 N·m (0.9 kgf·m, 78 in·lb)
- T3: 9.8 N·m (1.0 kgf·m, 87 in·lb)
- T4: 25 N·m (2.5 kgf·m, 18 ft·lb)

#### **Coolant Flow Chart**

Permanent type antifreeze is used as a coolant to protect the cooling system from rust and corrosion. When the engine starts, the water pump turns and the coolant circulates.

The thermostat is a wax pellet type which opens or closes with coolant temperature changes. The thermostat continuously changes its valve opening to keep the coolant temperature at the proper level. When coolant temperature is below 67°C (153°F), the thermostat closes so that the coolant flow is restricted through the air bleeder hole, causing the engine to warm up more quickly. When coolant temperature is more than  $69.5 \sim 72.5^{\circ}$ C (157 ~  $163^{\circ}$ F), the thermostat opens and the coolant flows.

When the coolant temperature goes up beyond  $94 \sim 100^{\circ}$ C ( $201 \sim 212^{\circ}$ F), the radiator fan switch conducts to operate the radiator fan. The radiator fan draws air through the radiator core when there is not sufficient air flow such as at low speeds. This increases up the cooling action of the radiator. When the temperature is below  $90^{\circ}$ C ( $194^{\circ}$ F), the fan switch opens and the radiator fan stops.

In this way, this system controls the engine temperature within narrow limits where the engine operates most efficiently even if the engine load varies.

The system is pressurized by the radiator cap to suppress boiling and the resultant air bubbles which can cause engine overheating. As the engine warms up, the coolant in the radiator and the water jacket expands. The excess coolant flows through the radiator cap and hose to the reserve tank to be stored there temporarily. Conversely, as the engine cools down, the coolant in the radiator and the water jacket contracts, and the stored coolant flows back to the radiator from the reserve tank.

The radiator cap has two valves. One is a pressure valve which holds the pressure in the system when the engine is running. When the pressure exceeds  $93 \sim 123$  kPa ( $0.95 \sim 1.25$  kgf/cm<sup>2</sup>,  $13.5 \sim 17.8$  psi), the pressure valve opens and releases the pressure to the reserve tank. As soon as pressure escapes, the valve closes, and keeps the pressure at  $93 \sim 123$  kPa ( $0.95 \sim 1.25$  kgf/cm<sup>2</sup>,  $13.5 \sim 17.8$  psi). When the engine cools down, another small valve (vacuum valve) in the cap opens. As the coolant cools, the coolant contracts to form a vacuum in the system. The vacuum valve opens and allows the coolant from the reserve tank to enter the radiator.

# **3-4 COOLING SYSTEM**

# Specifications

ltem	Standard
Coolant provided when shipping:	
Type (recommended)	Permanent type of antifreeze (soft water and ethylene glycol plus corrosion and rust inhibitor chemicals for aluminum engines and radiators)
Color	Green
Mixed ratio	Soft water 50%, coolant 50%
Freezing point	–35°C (–31°F)
Total amount	1.3 L (1.4 US qt)
	(reserve tank full level, including radiator and engine)
Radiator cap	
Relief pressure:	93 ~ 123 kPa (0.95 ~ 1.25 kgf/cm², 14 ~ 17.8 psi)
Thermostat:	
Valve opening temperature	69.5 ~ 72.5°C (157 ~ 163°F)
Valve full opening lift	3 mm (0.12 in.) or more @85°C (185°F)

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# **Engine Top End**

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## **4-2 ENGINE TOP END**

T5: 20 N·m (2.0 kgf·m, 15 ft·lb)

T6: 46 N·m (4.7 kgf·m, 34 ft·lb) T7: 13 N·m (1.3 kgf·m, 9.4 ft·lb)

### **Exploded View**



- O: Apply engine oil
- **R: Replacement Parts**
- S: Follow the specific tightening sequence.

## **Exploded View**



## 4-4 ENGINE TOP END

#### Clean Air System (KLX250H6F ~ United States and Canada)



- 1. Air Cleaner Duct
- 2. Vacuum Switch Valve
- 3. Air Suction Valve
- A. Air
- B. Exhaust Gas
- C. Secondary Air

#### Air Suction Valve Inspection

- Remove the air suction valve.
- Visually inspect the reeds [A] for cracks, folds, warps, heat damage, or other damage.
- ★ If there is any doubt as to the condition of the reed, replace the air suction valve as an assembly.
- Check the reed contact areas [B] of the valve holder for grooves, scratches, any signs of separation from the holder, or heat damage.
- ★ If there is any doubt as to the condition of the reed contact areas, replace the air suction valve as an assembly.
- ★ If any carbon or other foreign particles have accumulated between the reed and the reed contact area, wash the valve assembly with a high-flash-point solvent.

#### CAUTION

Do not scrape off the deposits with a scraper as this could damage the rubber, requiring replacement of the suction valve assembly.



#### Clean Air System (KLX250H6F ~ United States and Canada)

Vacuum Switch Valve Removal

- Remove: Seat Radiator cover (Left and Right) Fuel Tank
- Remove the air hoses [A] and vacuum hose [B], and remove the vacuum switch valve [C].



#### Vacuum Switch Valve Installation

- Install the air hoses and vacuum hose to the vacuum switch valve.
- Install the hoses correctly (see Cable, Wire, and Hose Routing).

#### Vacuum Switch Valve Test

• Remove the vacuum switch valve.

• Connect the vacuum gauge [A] and syringe [B] or fork oil level gauge to the vacuum hoses as shown.

Special Tool - Fork Oil Level Gauge : 57001–1290 Air Flow [C]





Spring [A] Diaphragm [B] Valve [C] Low Vacuum [D] Secondary Air Flow [E]

★If the vacuum switch valve does not operate as described, replace it with a new one.

#### NOTE

○ To check air flow through the vacuum switch valve, just blow through the air cleaner hose.

Vacuum Switch Valve Closing Pressure (Open  $\rightarrow$  Close) Standard: 60 ~ 70.7 kPa (450 ~ 530 mmHg)





## 4-6 ENGINE TOP END

## Clean Air System (KLX250H6F ~ United States and Canada)

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#### Clean Air System Hose Inspection

- Be certain that all the hoses are routed without being flattened or kinked, and are connected correctly to the right air cleaner housing, vacuum switch valve, carburetor holder, and air suction valve cover.
- ★If they are not, correct them. Replace them if they are damaged.

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# **Engine Right Side/Left Side**

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## 5-2 ENGINE RIGHT SIDE/LEFT SIDE

#### **Exploded View**



- A: KLX250-H2/J2  $\sim$  H4/J4 Model
- B: KLX250-H5 ~ Model
- C: KLX250H6F ~ (United States and Canada Models)
- CL: Apply cable lublicant.
- EO: Apply engine oil.
- G: Apply grease.
- L: Apply a non-permanent locking agent.
- T1: 5.4 N·m (0.55 kgf·m, 48 in·lb)
- T2: 9.8 N·m (1.0 kgf·m, 87 in·lb)
- T3: 15 N·m (1.5 kgf·m, 11.0 ft·lb)
- T4: 78 N·m (8.0 kgf·m, 58 ft·lb)
- T5: 3.2 N·m (0.33 kgf·m, 29 in·lb)
- T6: 37 N·m (3.8 kgf·m, 27 ft·lb)
- T7: 12 N·m (1.2 kgf·m, 104 in·lb)

## **ENGINE RIGHT SIDE/LEFT SIDE 5-3**

# **Exploded View**



## 5-4 ENGINE RIGHT SIDE/LEFT SIDE

## Specifications

ltem	Standard	Service Limit
Clutch Lever Free Play	2 ~ 3 mm (0.08 ~ 0.12 in.)	
Clutch Lever Free Play (at Lever End)	10 ~ 20 mm (0.39 ~ 0.79 in.)	
Clutch		
Clutch Assembly Thickness	30.3 ~ 30.9 mm (1.19 ~ 1.22 in.)	29.8 mm (1.17 in.)
Clutch Spring Free Length	32.65 mm (1.29 in.)	31.0 mm (1.22 in.)
Friction Plate Thickness	2.92 ~ 3.08 mm (0.115 ~ 0.121 in.)	2.7 mm (0.106 in.)
Steel Plate Thickness	1.46 ~ 1.74 mm (0.057 ~ 0.069 in.)	1.36 mm (0.054 in.)
Friction Plate Warp	0.2 mm (0.008 in.) or less	0.3 mm (0.012 in.)
Steel Plate Warp	0.2 mm (0.008 in.) or less	0.3 mm (0.012 in.)

Special Tools - Outside Circlip Pliers: 57001-144 Oil Seal  $\phi$ 16: 57001-263 Oil Seal  $\phi$ 13: 57001-264 Fly-wheel Holder: 57001-1313

Sealant - Kawasaki Bond (Silicone Sealant): 56019-120
## **ENGINE RIGHT SIDE/LEFT SIDE 5-5**

### Clutch Lever and Cable

- Clutch Lever Free Play Inspection
- Slide the dust cover [A] at the clutch cable upper end out of place, loosen the knurled locknut [B].
- Turn the adjuster [C] so that the clutch free play become 10 ~ 20 mm.
- Check that the clutch cable upper end is fully seated in the adjuster.
- ★If it is does not, adjust the lever play.

#### Clutch Lever Free Play Adjustment

To avoid a serious burn, never touch the engine or exhaust pipe during clutch adjustment

- Slide the dust cover at the clutch cable upper end out of place, screw in the adjuster and tighten the knurled locknut.
- Loosen the locknut [A] at the middle of cable, turn the adjuster [B] so that the clutch lever has 10 ~ 20 mm play.
  Tighten the locknut
- Tighten the locknut.

#### NOTE

- OBe sure that the outer cable end at the clutch lever is fully seated in the adjuster at the clutch lever, or it could slip into the place later creating enough cable play to prevent clutch disengagement.
- Push the clutch release lever [A] forward strongly, check whether the angle [B] between the clutch cable and the lever is 40 ~ 50°.
- $\star$  If it does not, check the friction and steel plates thickness.
- Replace the dust cover.
- After adjustment, start the engine and check that the clutch does not slip and that it releases properly.

#### Clutch Cable Lubrication

Whenever the clutch cable is removed, lubricate the clutch cable as follows.

- Apply a thin coating of grease to the cable upper and lower ends.
- Lubricate the cable with a penetrating rust inhibitor.









## 5-6 ENGINE RIGHT SIDE/LEFT SIDE

#### Clutch

#### Clutch Plate Assembly Inspection

- Inspect the friction plate thickness (see Clutch Plate, Wear, Damage Inspection).
- Measure the length [A] of the clutch plate assembly as shown.

Torque - Clutch Spring Bolts: 3.2 N·m (0.33 kgf·m, 29 in·lb)

#### Clutch plate Assembly Standard: 30.3 ~ 30.9 mm

★If the length is not within the specified range, adjust the length (see Clutch Plate Assembly Adjustment).

#### Clutch Plate Assembly Adjustment

- Inspect the clutch plate assembly length, and then replace the steel plate(s) which brings the length within the specified range.
- Remove:
  - Spring Bolts Spring Holders Springs Spring Plate
- Replace the standard steel plates(5 Pcs) using following steel plates of NO.1 or NO.3.

Part No.		Thickness	
1	13089-1117	1.2 mm	
2	13089-1094	1.6 mm (Standard)	
3	13089-1116	2.0 mm	





#### NOTE

- ODo not use the steel plate of 1.2 mm and 2.0 mm thickness at the same time.
- OAfter replacing the friction plate(s) or steel plate(s), make sure to measure the overall thickness of the plate assembly and adjust if necessary.
- Install the removed pats, and inspect the clutch plate assembly length.
- OInstall the last friction plate [A] fitting the tangs in the grooves in the housing as shown.



Torque - Clutch Spring Bolts: 3.2 N·m (0.33 kgf·m, 29 in·lb)

### Clutch

#### Clutch Plate, Wear, Damage Inspection

- ★Visually inspect the friction and steel plates for signs of seizure, overheating (discoloration), or uneven wear.
- ★Measure the thickness of each friction plate [A] at several points.
- ★If any plates show signs of damage, or if they have worn past the service limit, replace them with new ones.

Friction Plate Thickness Standard: 2.92 ~ 3.08 mm Service Limit: 2.7 mm

#### Clutch Plate Warp Inspection

- Place each friction plate or steel plate on a surface plate and measure the gap between the surface plate [A] and each friction plate or steel plate [B] with a thickness gauge [C]. The gap is the amount of friction or steel plate warp.
- ★ If any plate is warped over the service limit, replace it with a new one.

Friction and Steel Plate Warp Standard: 0.2 mm or less Service Limit: 0.3 mm

#### Clutch Spring Free Length Measurement

- Measure the free length of the clutch springs [A].
- ★If any spring is shorter than the service limit, it must be replaced.

Clutch Spring Free Length Standard: 32.65 mm Service Limit: 31.0 mm

#### Shift Lever Installation Note

• Install the shift lever [A] so that the tip [B] of it comes between the mark "s" and the bolt head of the alternator cover installation bolt.









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# **Engine Lubrication System**

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## **6-2 ENGINE LUBRICATION SYSTEM**

## **Exploded View**



2. Oil Pump

3. Engine Oil Drain Plug

T1: 15 N·m (1.5 kgf·m, 11 ft·lb)

T2: 9.8 N·m (1.0 kgf·m, 87 in·lb)

T3: 20 N·m (2.0 kgf·m, 14.5 in·lb)

T4: 5.4 N·m (0.55 kgf·m, 48 ft·lb)

L: Apply a non-permanent locking agent.

R: Replacement Parts

## Specification

Item	Standard (On and after KLX250-H3/J4)
Engine Oil	
Туре:	
(KL250-H3/J4 ~, H6F)	API SE, SF or SG API SH or SJ with JASO MA
(KL250H7F)	API SE, SF or SG API SH SJ or SL with JASO MA
Viscosity	SAE 10W-40
Capacity	1.3 L (1.374 US gt) (when filter is not removed)
	1.4 L (1.480 US gt) (when filter is removed)
	1.5 L (1.586 US gt) (when engine is completely dry)
Oil Pressure Measurement	
Relief valve opening pressure	430 ~ 590 kPa (4.4 ~ 6.0 kgf/cm <sup>2</sup> , 63 ~ 85 psi)
Oil Pressure @4 000 r/min (rpm), Oil Temperature 90°C (194°F)	78 ~ 147 kPa (0.8 ~ 1.5 kgf/cm², 11 ~ 21 psi)

Special Tools - Oil Pressure Gauge, 10 kgf/cm<sup>2</sup>: 57001-164 Oil Pressure Gauge Adapter, M10 × 1.25: 57001-1182 Oil Pressure Gauge Cap: 57001-1361

## **6-4 ENGINE LUBRICATION SYSTEM**

#### **Engine Oil and Filter**

#### Engine Oil Change (On and after KLX250-H3/J4)

- Warm up the engine so that the oil will pick up any sediment and drain easily, and stop the engine.
- Place an oil pan beneath the engine.
- Remove the engine drain plug [A], and let the oil drain completely.

#### NOTE

O Hold the motorcycle upright so that the oil may drain completely.

- If the oil filter is to be changed, replace it with a new one,
- Check the gasket at the drain plug for damage.
- $\star$ Replace the gasket with a new one if it is damaged.
- After the oil has completely drained out, install the drain plug with the gasket, and tighten it.
  - Torque Drain Plug: 15 N·m (1.5 kgf·m, 11.0 ft·lb)
- Fill the engine with a good quality engine oil.
- Check the oil level.

#### **Recommended Engine Oil**

Type:

(KL250-H3/J4 ~, H6F)

API SE, SF or SG

API SH or SJ with JASO MA

(KL250H7F)

API SE, SF or SG API SH SJ or SL with JASO MA

- Viscosity: SAE10W-40
- Capacity: 1.3 L (1.374 US gt) (when filter is not removed)

1.4 L (1.480 US gt) (when filter is removed)

1.5 L (1.586 US gt)(when engine is completely dry)

. . .

#### Level: Between upper and lower levels

#### NOTE

Opepending on the atmospheric temperature of your riding area, the engine oil viscosity should be changed according to the chart.





# **Engine Removal/Installation**

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## 7-2 ENGINE REMOVAL/INSTALLATION

## **Exploded View**



T1: 23 N·m (2.3 kgf·m, 17 ft·lb) T2: 44 N·m (4.5 kgf·m, 33 ft·lb) T3: 88 N·m (9.0 kgf·m, 65 ft·lb)

# **Crankshaft/Transmission**

## **Table of Contents**

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## 8-2 CRANKSHAFT/TRANSMISSION

### **Exploded View**



- T1: 12 N·m (1.2 kgf·m, 8.5 ft·lb) T2: 15 N·m (1.5 kgf·m, 11 ft·lb) T3: 37 N·m (3.8 kgf·m, 27 ft·lb) T4: 98 N·m (10 kgf·m, 72 ft·lb) T5: 9.8 N·m (1.0 kgf·m, 87 in·lb) EO: Apply engine oil. G: Apply grease.
- LG: Apply liquid gasket.

# **CRANKSHAFT/TRANSMISSION 8-3**

## **Exploded View**



- A: KLX250-H2/J2 ~ H4/J4 Model
- B: KLX250-H5  $\sim$  H7, H6F  $\sim$  Model
- 1. 1st Gear
- 2. 2nd Gear
- 3. 3rd Gear
- 4. 4th Gear
- 5. 5th Gear
- 6. 6th (Top) Gear
- 7. Idle Gear
- 8. Thrust Washer

- 9. Circlip
- 10. Toothed Washer
- 11. Engine Sprocket
- 12. Collar
- 13. O-ring
- 14. Output Shaft
- 15. Thrust Washer
- 16. Toothed Washer
- 17. Bushing
- 18. Thrust Washer
- 19. Thrust Washer
- 20. Thrust Washer

- 21. Drive Shaft
- 22. Thrust Washer
- 23. Circlip
- 24. Nut
- 25. Washer
- 26. Shim
- 27. Collar
- EO: Apply engine oil.
- MO: Apply molybdenum disulfide oil.

# **Wheels/Tires**

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## 9-2 WHEELS/TIRES

## **Exploded View**



T1: 1.5 N·m (0.15 kgf·m, 13 in·lb) T2: 88 N·m (9.0 kgf·m, 65 ft·lb) T3: 108 N·m (11 kgf·m, 80 ft·lb) A: KLX250J Model B: KLX250-H2 Model

- 2. Rear Axle
- 3. Front Hub
- 4. Rear Hub
- 5. Speedometer Gear Case Ass'y
- 6. Speedometer Cable
- G. Apply grease
- R. Replacement Parts

## Specifications

Item			Standard	Service Limit
Rim Size				
		Front	21 × 1.60	
		Rear	18 × 2.15	_
Rim runout		Axial		TIR 2 mm (0.08 in.)
		Radial		TIR 2 mm (0.08 in.)
Axle runout/10	00 mm		TIR 0.10 mm (0.004 in.) or less	TIR 0.2 mm (0.008 in.)
Wheel balanc	е		10 g or less	
Balance weigl	ht		10 g, 20 g, 30 g	
Tire tread depth	KLX250H	Front	8.3 mm (0.327 in.)	2 mm (0.08 in.)
		Rear	11.8 mm (0.465 in.)	2 mm (0.08 in.)
	KLX250J	Front	4.0 mm (0.157 in.)	2 mm (0.08 in.)
		Rear	6.4 mm (0.252 in.)	2 mm (0.08 in.)
Tire air			Load	Air pressure (when cold)
pressure	KLX250H	Front		150 kPa (1.5 kg/cm², 21 psi)
		Rear	up to 97.5 kg (215 lb)	150 kPa (1.5 kg/cm², 21 psi)
			97.5 ~ 181 kg (215 ~ 399 lb)	175 kPa (1.75 kg/cm <sup>2</sup> , 25 psi)
	KLX250J	Front		200 kPa (2.00 kg/cm <sup>2</sup> , 28 psi)
		Rear		225 kPa (2.25 kg/cm <sup>2</sup> , 32 psi)
Standard tire			Size	Make, Type
	KLX250H	Front	3.00-21 51P	DUNLOP D603F
		Rear	4.60-18 63P	DUNLOP D603
	KLX250J	Front	110/70-17 54H	DUNLOP GT401FL
		Rear	130/70-17 62H	DUNLOP GT401J

TIR: Total Indicator Reading

Special Tools - Inside Circlip Pliers: 57001-143

Bead Breaker Assembly: 57001-1072 Rim Protector: 57001-1063 Bearing Driver Set: 57001-1129 Jack: 57001-1238 Bearing Remover Shaft: 57001-1129 Bearing Remover Head,  $\phi$ 15 ×  $\phi$ 17: 57001-1267 Bearing Remover Head,  $\phi$ 20 ×  $\phi$ 22: 57001-1293 Sensor Housing Holder: 57001-1652

## 9-4 WHEELS/TIRES

## Wheels (Rims)

#### Front Wheel Installation

• Install the speedometer gear projection [A] so that it fits in the speedometer gear drive notches [B].

• Fit the speedometer gear housing stop [A] to the front fork leg stop [B].





- Insert the front axle from the right side of the front wheel, and tighten the front axle clamp bolts temporarily so that it turns lightly.
- Olf the front axle clamp was removed, install it arrow mark facing upward.
- Tighten the front axle [B] while holding the speedometer gear housing steady with the sensor housing holder [A].

Special Tool - Sensor Housing Holder 57001-1652

Torque - Front Axle: 88 N·m (9.0 kgf·m, 65 ft·lb)

#### CAUTION

Prevent the groove in the speed gear housing from coming off the stopper on the right front fork, otherwise the speedometer gear housing will turn when the axle is tightened, which would damage the projection in speedometer gear housing.

• Tighten the front axle clamp bolts. Firstly tighten the upper nuts [A] and then lower ones [B].

Torque - Front Axle Clamp Nuts: 8.8 N·m (0.9 kgf·m, 78 in·lb)

Check the front brake effectiveness.

#### A WARNING

Do not attempt to ride the motorcycle until a full brake lever is obtained by pumping the brake lever until the pads are against the disc. The brakes will not function on the first application of the lever if this is not done.





## WHEELS/TIRES 9-5

## Wheels (Rims)

#### Rear Wheel Installation

• Fit the rear caliper stop [A] to the swing arm stop [B].



• Install the collar and cap to both rear hub so that the projection of cap [A] fits the collar groove [B] surely.

- Install the drive chain on the rear sprocket, and install the front wheel.
- Olnsert the rear axle from left side.
- Adjust the drive chain slack.
- Tighten the rear axle nut.

#### Torque - Rear Axle Nut: 108 N·m (11.0 kgf·m, 80 ft·lb)

• Insert a new cotter pin [A].

#### NOTE

- OWhen inserting the cotter pin, if the slots in the nut do not align with the cotter pin hole in the axle, tighten the nut clockwise [B] up to next alignment.
- Olt should be within 30 degree.
- OLoosen once and tighten again when the slot goes past the nearest hole.
- Bend the cotter pin [A] over the nut.





Check the rear brake effectiveness:

#### A WARNING

Do not attempt to ride the motorcycle until a full brake pedal is obtained by pumping the brake pedal until the pads are against the disc. The brake will not function on the first application of the pedal if this is not done.

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# **Final Drive**

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## **10-2 FINAL DRIVE**

### **Exploded View**



- A: KLX250-H5 ~ H7, H6F ~ Model B: KLX250-H2/J2 ~ H4/J4 Model C: KLX250-H2 Model T1: 32 N·m (3.3 kgf·m, 24 ft·lb) T2: 108 N·m (11 kgf·m, 80 ft·lb) T3: 88 N·m (9.0 kgf·m, 65 ft·lb) T4: 127 N·m (13 kgf·m, 92 ft·lb) T5: 9.8 N·m (1.0 kgf·m, 87 in·lb)
- G: Apply grease.
- MO: Apply molybdenum disulfide oil.

- L: Apply a non-permanent locking agent.
- R: Replacement Part
- 1. Engine Sprocket
- 2. Rear Sprocket
- 3. Swing Arm
- 4. Front Drive Chain Guide
- 5. Rear Drive Chain Guide
- 6. Rear Drive Chain Guide
- 7. Rear Drive Chain Guide
- 8. Rear Drive Chain Guide

## **FINAL DRIVE 10-3**

## Specifications

Item Drive Chain		Standard	Service Limit
Standard Chain	Make	ENUMA	
	Туре	EK520LV-0, Endless	
	Link	106	
Chain Slack		55 ~ 60 mm (2.17 ~ 2.36 in.)	- <b>-</b> -
20-link Length		317.5 ~ 318.2 mm (12.50 ~ 12.53 in.)	323 mm (12.72 in.)
Sprocket			
Rear Sprocket Wa	rp	0.4 mm (0.016 in.) or less	0.5 mm (0.020 in.)

Special Tools - Inside Circlip Pliers: 57001-143 Bearing Driver Set: 57001-1129 Jack: 57001-1238

## **10-4 FINAL DRIVE**

### Sprocket

- Engine Sprocket Removal (KLX250-H5 ~ H7, H6F ~)
- Remove:

Bolts [A] Engine Sprocket Cover [B] with Chain Guide

- Flatten out the bended washer [A].
- Remove:

Engine Sprocket Nut [B] and Washer

#### NOTE

- OWhen loosing the engine sprocket nut, hold the rear brake on.
- Loosen the drive chain.
- Remove the drive chain from the rear sprocket toward the right.
- Pull the engine sprocket [A] off the output shaft [B] along with the chain.
- Remove the engine sprocket.







Engine Sprocket Installation (KLX250-H5 ~ H7, H6F ~)

- Replace the sprocket washer.
- Install the engine sprocket onto the output shaft.
- Apply oil to the threads of the output shaft and the seating surface of the engine sprocket nut.
- Engage the drive chain with the engine and rear sprocket.
- Tighten:

#### Torque - Engine Sprocket Nut: 125 N·m (13.0 kgf·m, 92 ft·lb)

#### NOTE

OTighten the nut while applying the rear brake.

- Bend the one side of the washer over the nut.
- Adjust the drive chain slack after installing the sprocket.
- Install the engine sprocket cover and tighten the bolts.
  - Torque Engine Sprocket Cover Bolts: 9.8 N·m (1.0 kgf·m, 87 in·lb)

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# **Brakes**

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### 11-2 BRAKES

### **Exploded View**



## **Exploded View**



- T2: 34 N·m (3.5 kgf·m, 25 ft·lb) T3: 23 N·m (2.3 kgf·m, 16.5 ft·lb) T4: 18 N·m (1.8 kgf·m, 13 ft·lb)
- T5: 1.5 N·m (0.15 kgf·m, 13 in·lb)

- G: Apply grease.
- L: Apply a non-permanent locking agent.
- R: Replacement Parts
- Si: Apply silicone grease or PBC grease.

## 11-4 BRAKES

## Specifications

ltem	Standard	Service Limit
Brake Lever, Brake Pedal		
Brake Lever Free Play	Adjustable (to suit rider)	
Pedal Free Play	Non-adjustable	
Brake Fluid		
Grade	DOT4	
Brake Pads		
Lining Thickness: Front	3.8 mm (0.150 in.)	1 mm (0.039 in.)
Rear	6.4 mm (0.252 in.)	1 mm (0.039 in.)
Brake Discs		
Thickness:		
Front	3.35 ~ 3.65 mm (0.132 ~ 0.144 in.)	2.8 mm (0.110 in.)
Rear	4.35 ~ 4.65 mm (0.171 ~ 0.183 in.)	3.8 mm (0.150 in.)
Runout	0.12 mm (0.005 in.) or less	0.3 mm (0.012 in.)

Special Tools - Inside Circlip Pliers: 57001-143 Jack: 57001-1238

# Suspension

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## **12-2 SUSPENSION**

### **Exploded View**



T1: 9.8 N·m (1.0 kgf·m, 87 in·lb) T2: 1.3 N·m (0.13 kgf·m, 12 in·lb) T3: 20 N·m (2.0 kgf·m, 14.5 ft·lb) T4: 25 N·m (2.5 kgf·m, 18 ft·lb) T5: 29 N·m (3.0 kgf·m, 22 ft·lb) T6: 54 N·m (5.5 kgf·m, 40 ft·lb) T7: 15 N·m (1.5 kgf·m, 11 ft·lb) T8: 1.2 N·m (0.12 kgf·m, 10 in·lb) L: Apply a non-permanent locking agent.

- M: Apply molybdenum disulfide grease.
- **R: Replacement Parts**
- S: Tighten the fasteners following the specified sequence.

## **Exploded View**



T3: 88 N·m (9.0 kgf·m, 65 ft·lb)

T4: 98 N·m (10 kgf·m, 72 ft·lb)

M: Apply molybdenum disulfide grease.

## **12-4 SUSPENSION**

## Specifications

ltem	Standard	Service Limit
Front Fork (per one unit)		
Fork Inner Tube Diameter	43 mm (1.69 in.)	
Air Pressure	Atmospheric pressure (Non-adjustable)	
Compression Damper Setting	12th click from the first click of	
	the fully clockwise position	
Fork Oil Viscosity	KAYABA KHL15-10, or equivalent	
Fork Oil Capacity	519 ±4 mL (17.55 ±0.14 US oz) (completely dry)	<b>-</b>
	approx. 443 mL (14.98 US oz) (when changing oil)	
Fork Oil Level	114 ±2 mm (4.49 ±0.08 in.)	
	Fully compressed, without fork spring,	
	below from outer tube top	
Fork Spring Free Length	470.5 mm (18.5 in.)	461 mm (18.1 in.)
Rear Shock Absorber	· · · ·	
Rebound Damping Set	12th click from the first click of the	
	fully clockwise position	
Compression Damper Setting	16th click from the first click of the	
	fully clockwise position	
Spring Setting Position	Standard adjusting nut position: 114 mm (4.49 in.)	
	Nut adjusting range: 106 ~ 128 mm (4.16 ~ 5.04 in.)	<b>-</b>
Gas Pressure	980 kPa (10 kg/cm², 142 psi Non-adjustable)	
Oil Type	SAE5W or Bel-Ray SE2#40	
Oil Capacity	313 mL (10.58 US oz)	
Spring Free Length	255 mm (10.0 in.)	250 mm (9.84 in.)
Rocker Arm		· · ·
Sleeve Outside Diameter	15.989 ~ 16.000 mm (0.629 ~ 0.630 in.)	15.85 mm (0.624 in.)
	21.987 ~ 22.000 mm (0.8656 ~ 0.8661 in.)	21.85 mm (0.860 in.)
	24.987 ~ 25.000 mm (0.9837 ~ 0.9843 in.)	24.85 mm (0.9783 in.)
Bolt Runout	0.1 mm (0.004 in.) or less	0.2 mm (0.008 in.)

Special Tools - Fork Cylinder Holder Handle: 57001-183 Fork Cylinder Holder Adapter: 57001-1057 Hook Wrench: 57001-1101 Bearing Driver Set: 57001-1129 Fork Outer Tube Weight: 57001-1218 Jack: 57001-1238 Fork Spring Holder: 57001-1286 Fork Cylinder Holder: 57001-1287 Fork Oil Level Gauge: 57001-1290 Fork Piston Rod Puller, M10 × 1.0: 57001-1298 Hexagon Wrench, Hex 29: 57001-1335 Fork Oil Seal Driver,  $\phi$ 43: 57001-1340

# Steering

## **Table of Contents**

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## **13-2 STEERING**

## **Exploded View**



T1: 25 N·m (2.5 kgf·m, 18 ft·lb) T2: 44 N·m (4.5 kgf·m, 33 ft·lb) T3: 4.9 N·m (0.15 kgf·m, 43 in·lb) AD: Apply an adhesive.

- G: Apply grease.
- S: Tighten the fasteners following the specified sequence.

#### Timpledec Mass

# Frame

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## 14-2 FRAME

## **Exploded View**



## **Exploded View**



G: Apply grease. R: Replacement parts.

# **Electrical System**

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## **15-2 ELECTRICAL SYSTEM**

## **Exploded View**


### **Exploded View**

- T1: 14 N·m (1.4 kgf·m, 10 ft·lb)
- T2: 118 N·m (12 kgf·m, 87 ft·lb)
- T3: 5.9 N·m (0.6 kgf·m, 52 in·lb)
- T4: 2.5 N·m (0.25 kgf·m, 22 in·lb)
- T5: 4.9 N·m (0.5 kgf·m, 43 in·lb)
- T6: 9.8 N·m (1.0 kgf·m, 87 in·lb) T7: 6.9 N·m (0.7 kgf·m, 61 in·lb)
- T8: 12 N·m (1.2 kgf·m, 104 in·lb)
- 1. Alternator Flywheel
- 2. Crankshaft Sensor
- 3. Alternator Stator Coil
- 4. Regulator/Rectifier
- 5. Ignition Coil
- 6. Igniter
- 7. Electric Starter
- 8. Starter Idle Gear Limiter
- 9. Idle Gear
- 10. Starter Motor Clutch
- 11. Oneway Clutch Coupling
- 12. Oneway Clutch Gear
- 13. Battery
- 14. Igniter (KLX250H6F ~, United States and Canada Models)
- SS: Apply a silicone sealant.
- EO: Apply an engine oil.
- M: Apply a molybdenum disulfide grease.
- HL: Apply a high-lock agent to the threads
- Si: Apply a silicone grease.

### **15-4 ELECTRICAL SYSTEM**

### Exploded View



1. KLX250H6F ~ (United States and Canada Models)

### **Exploded View**



- 1. Left Handlebar Switch
- 2. Right Handlebar Switch
- 3. Front Brake Light Switch
- 4. Rear Brake Light Switch
- 5. Side Stand Switch
- 6. Fuse Assembly

- 7. Turn Signal Relay
- 8. Starter Circuit Relay
- 9. Side Stand Switch Control Diode
- 10. Ignition Switch
- L: Apply a non-permanent locking agent.

### 15-6 ELECTRICAL SYSTEM

## Specifications

Item	Standard	Service Limit
Battery		
Туре	Sealed Battery	
Capacity	12 V 6 Ah	
Voltage	12.6 V or more	
Charging System		
Alternator Type	Three-phase AC	
Charging Voltage (Regulator/Rectifier Output Voltage)	147 ±0.5 V	
Alternator Output Voltage	38 V or more	
Charging Coil Resistance	$0.05 \sim 0.60 \ \Omega$	
Regulator/Rectifier Resistance	in the text	
Ignition System		
Crankshaft Sensor Resistance Ignition Coil:	180 ~ 280 Ω	
3 Needle Arcing Distance	6 mm or more	
Primary Winding Resistance	0.17 ~ 0.23 Ω	
Secondary Winding Resistance	5.0 ~ 7.6 kΩ	<b></b> '
Spark Plug:		
Туре	NGK CR7E, CR8E, CR9E	
Spark Plug Cap Resistance	3.75 ~ 6.25 kΩ	- <b>-</b> -
Spark Plug Gap	0.7 ~ 0.8 mm (0.028 ~ 0.031 in.)	
Starter System		
Starter Motor:		
Carbon Brush Length	12.5 mm (0.492 in.)	8.5 mm (0.335 in.)
Commutator Diameter	28 mm (1.10 in.)	27 mm (1.06 in.)
Switch and Sensor		
Radiator Fan Switch Connections:		
Rising Temperature	From OFF to ON at 94 ~ 100°C (201 ~ 212°F)	
Falling Temperature	From ON to OFF at 90°C (194°F) or less	
Water Temperature Sensor Connections		
Rising Temperature	From OFF to ON at 107 ~ 113°C (225 ~ 235°F)	
	From ON to OFF at 103°C (217°F) or less	
Rear Brake Light Switch Timing	ON after about 10 mm (0.39 in.) pedal travel	

### **Charging System**

- Alternator Cover Removal
- Drain the engine oil.
- Remove: Engine Sprocket Cover Left Side Cover Crankshaft Sensor Connector Regulator/Rectifier Connector
- Remove: Torque Limiter Cover Torque Limiter [A]



#### Alternator Cover Installation

- Install the dowel pins [A] and a new gasket [B].
- Apply silicone sealant to the alternator lead grommet and crankcase halves mating surface.
- Apply molybdenum disulfide grease to the starter pinion gear [C] and the torque limiter shaft.
- Run the lead wires as specified in the General Information chapter.

Torque - Alternator Cover Bolts: 9.8 N·m (1.0 kgf·m, 87 in·lb)

Torque Limiter Cover Bolts: 12 N·m (1.2 kgf·m, 104 in·lb)

• Fill the engine with oil.

#### Alternator Stator Removal

- Remove the alternator cover (see Alternator Cover Removal).
- Remove the allen bolt [A], screw [B], and take out the stator [C] and the crankshaft sensor [D] from the cover.









### **Charging System**

#### Alternator Stator Installation

Tighten the following parts:

Torque - Alternator Stator Bolts: 9.8 N·m (1.0 kgf·m, 87 in·lb)

Crankshaft Sensor Screws: 2.5 N·m (0.25 kgf·m, 22 in·lb)

• Apply silicone sealant to the circumference of the alternator lead grommet [C], and fit the grommet into the notch of the cover securely.

#### Sealant - Kawasaki Bond (Silicone Sealant): 56019-120

#### Alternator Rotor Removal

- Remove the alternator cover (see Alternator Cover Removal).
- Hold the alternator rotor [A] steady with the flywheel holder [B], and remove the rotor bolt [C].

#### Special Tool - Flywheel Holder: 57001-1313

#### CAUTION

# Do not hold the timing plate [D] of the alternator rotor. This can damage the timing plate.

- Using the rotor puller [A], remove the rotor [B] from the crankshaft.
- OScrew in the puller while tapping the head of the puller with a hammer.

#### CAUTION

Do not attempt to strike the alternator rotor itself. Striking the rotor can cause the magnets to lose their magnetism.

#### Special Tool - Rotor Puller: 57001-1216

• Remove the starter idler gear and the starter gear.

#### Alternator Rotor Installation

- Install the collar.
- Apply a thin coat of molybdenum disulfide grease to the crankshaft journal [B].
- Using high-flash point solvent, clean the tapered portion [C] of the crankshaft.
- Also clean the opposing tapered portion of the alternator rotor with high-flash point solvent.







### Charging System

- Install the starter gear [A].
- Apply molybdenum disulfide grease to the journals [B] at the front and back of the idler gear, and install the gear.





- Fit the woodruff key [A] securely in the slot in the crankshaft before installing the alternator rotor.
- Install the alternator rotor [C] so that the woodruff key fits in the groove [B] of the rotor.
- Tighten the alternator rotor bolt.

Torque - Alternator Rotor Bolt: 118 N·m (12.0 kgf·m, 87 ft·lb)

#### Special Tool - Flywheel Holder: 57001-1313

 Install the alternator cover (see Alternator Cover Installation).

#### Alternator Inspection

There are three types of alternator failures: short, open (wire burned out), or loss in rotor magnetism. A short or open in one of the coil wires will result in either a low output, or no output at all. A loss in rotor magnetism, which may be caused by dropping or hitting the alternator, by leaving it near an electromagnetic field, or just by aging, will result in low output.

- To check the alternator output voltage, do the following procedures.
- ODisconnect the regulator/rectifier connector from behind the left side cover.

OConnect the hand tester as indicated in the table below. OStart the engine.

- OSet the engine speed to the rpm indicated in the table below.
- ORead the tester's measurements (a total of 3 times for the combination of the lead wires).
- ★ If the output volage shows the value in the table, the alternator operates properly and the regulator/rectifier is damaged. A much lower reading than the value in the table indicates that the alternator is defective.

#### Alternator No-Load Voltage

Tester	Connections		Measurement
Range	Tester positive	Tester negative	value
	(+) terminal	(-) terminal	@4 000 rpm
25V DC	Yellow lead	Another yellow lead	38 V or above

### **Charging System**

#### Stator Coil Inspection

• Remove:

- Seat
- Side Cover

• Disconnect the stator coil lead connection, check the stator coil lead resistance.

 $\star$  If the tester reading is not a specified one, replace it.

#### Stator coil Resistance

#### Unit: Ω

Tester Range	Connections	Resistance
	Y1-Y2	
× 1Ω	Y2-Y3	0.4 ~ 1.1
	Y1-Y3	

#### Special Tool - Hand Tester: 57001-1394

#### Regulator Inspection

Remove the regulator.

#### CAUTION

Use only the Kawasaki Hand Tester for this test. A tester other than the Kawasaki Hand Tester may show different readings. Do not use a megger or a meter with a large capacity

battery is used, or the CDI unit will be damaged.

- Check the regulator/rectifier internal resistance as follows;
- $\star$ If the tester reading is not a specified one, replace it.

Special Tool - Hand Tester: 57001-1394

#### Regulator/Rectifier Internal Resistance

Rang	je×1kΩ	Tester (+) Lead Connection				
	Color	Y	Y	Y	BR	BK/Y
	Y		30 ~ 150	30 ~ 150	1.0 ~ 10	20 ~ 100
	Y	30 ~ 150		30 ~ 150	1.0 ~ 10	20 ~ 100
(-)*	Y	30 ~ 150	30 ~ 150		1.0 ~ 10	20 ~ 100
	BR	20 ~ 100	20 ~ 100	20 ~ 100		15 ~ 60
	BK/Y	1.0 ~ 10	1.0 ~ 10	1.0 ~ 10	2.0 ~ 20	

(-)\*: Tester (-) Lead Connection



Unit: kΩ

#### Ignition System

### A WARNING

The ignition system produces extremely high voltage. Do not touch the spark plug, high tension coil, or spark plug lead while the engine is running, or you should receive a severe electrical shock.

#### CAUTION

Do not disconnect electrical connections while the engine is running. This is to prevent ignition coil damage.

#### Crankshaft Sensor Inspection

• Remove:

Seat

Side Cover

- Disconnect the crankshaft sensor lead connector, check the crankshaft sensor lead resistance.
- ★If the tester reading is not a specified one, replace the stator assembly.

#### Stator Coil Lead Resistance

Tester Range	Connections	Resistance
×10 Ω W/Y - G/W		180 ~ 280

#### Special Tool - Hand Tester: 57001-1394

#### Ignition Coil Inspection

- Remove the ignition coil [A].
- Check the ignition coil arcing distance, primary winding and secondary winding resistance as figures.

Ignition Coil Arcing Distance Standard: 6 mm (0.236 in.) or more [B]

★If the tester reading is not a specified one, replace it.

Special Tool - Coil Tester: 57001-1242 [E] Hand Tester: 57001-1394 [F]





### 15-12 ELECTRICAL SYSTEM

### **Ignition System**

Igniter InspectionRemove the igniter.

#### CAUTION

Use only the Kawasaki Hand Tester for this test. A tester other than the Kawasaki Hand Tester may show different readings.

Do not use a megger or a meter with a large capacity battery is used, or the CDI unit will be damaged.

• Check the igniter internal resistance as follows:

 $\star$ If the tester reading is not a specified one, replace it.

Special Tool - Hand Tester: 57001-1394



#### **IC Igniter Internal Resistance**

#### Tester (+) Lead Connection Range $\times 1 \ k\Omega$ W G/W W/Y GΥ BK/R BK/W BK/Y BL Color 7~30 W \_\_\_\_ 29 ~ 115 1~5 ∞ 4 ~ 16 29~115 1~5 28 ~ 115 28 ~ 115 65 ~ 260 55 ~ 220 0 G/W 31 ~ 125 ø 5~22 3~15 27~110 0 W/Y 1~5 27~110 œ (-)\* ΒL 4~15 55 ~ 220 2~8 12~50 8 ~ 34 55 ~ 220 2~8 GΥ œ œ œ œ ∞ œ 00 8 ~ 32 \_\_\_\_ 6 ~ 24 BK/R 90 ~ 360 6 ~ 24 ∞ 22 ~ 90 90 ~ 360 65 ~ 260 5 ~ 220 28 ~ 115 BK/W 30 ~ 120 0 28~115 ∞ 5 ~ 22 3 ~ 15 27~110 0 BK/Y 1~5 27 ~ 110 \_\_\_\_ œ

(-)\*: Tester (-) Lead Connection

Unit: kΩ

#### **Electrical Starter System**

- Starter Motor Removal
- Remove: **Torque Limiter Cover** Torque Limiter Alternator Cover Drive Chain Cover Starter Motor Terminal Nut Starter Motor Mounting Bolt • Pull out the starter motor.

#### Starter Motor Installation

#### CAUTION

Do not tap the starter motor shaft or body. Tapping the shaft or body could damage the motor.

- Clean the starter motor mounting surface and the crankcase surface (mating surface with starter motor mounting).
- Replace the O-ring [A] with a new one.
- Apply engine oil to the O-ring.

Torque - Starter Motor Mounting Bolts: 9.8 N·m (1.0 kgf·m, 87 in·lb)

> Starter Motor Terminal Nut: 4.9 N·m (0.50 kgf·m, 43 in·lb)





- Remove the starter motor (see Starter Motor Removal).
- Remove the starter motor assembly bolts [A], both end covers [B], and pull the armature out of the yoke.



- $(\mathbf{A})$
- Remove the terminal locknut [A] and terminal bolt [B], and then remove the brush with the brush plate [C] from the yoke.

### **15-14 ELECTRICAL SYSTEM**

### **Electrical Starter System**

#### Starter Motor Assembly

- Replace the O-ring with a new one.
- Apply a thin coat of high-temperature grease to the oil seal [A] and the needle bearing [B].
- Fit the toothed washer [C] into the end cover.
- Install the brush plate [A] and tighten the terminal locknut [B].

Torque - Starter Motor Terminal Lock Nut: 6.9 N·m (0.70 kgf·m, 61 in·lb)

- Fit the tongue [C] on the brush plate into the end cover groove.
- Insert the armature [A] between the brushes.

 Align the end cover [A] with the mark [C] of the yoke [B].
 Torque - Starter Motor Assembly Bolt: 4.9 N·m (0.50 kgf·m, 43 in·lb)

#### Carbon Brush Inspection

- Measure the length [A] of each brush.
- ★If any one is worn down to the service limit, replace the carbon brush holder assembly [B].

#### **Carbon Brush Length**

Standard:	12.5 mm (0.4921 mm)
Service Limit:	8.5 mm (0.3346 in.)











#### **Electrical Starter System**

#### Commutator Inspection, Cleaning

• Smooth the commutator surface [A] if necessary with fine emery cloth [B], and clean out the grooves.

- Measure the outer diameter [A] of the commutator [B].
- ★Replace the starter motor with a new one if the commutator diameter is less than the service limit.

Commutator DiameterStandard:28 mm (1.1023 in.)Service Limit:27 mm (1.0630 in.)

#### Armature Inspection

- Using the  $\times$  1  $\Omega$  hand tester range, measure the resistance between any two commutator segments [A].
- ★ If there is a high resistance or no reading (∞) between any two segments, a winding is open and the starter motor must be replaced.
- Using the highest hand tester range, measure the resistance between the segments and the shaft [B].
- ★If there is any reading at all, the armature has a short and the starter motor must be replaced.

#### Special Tool - Hand Tester: 57001-1394

#### NOTE

OEven if the foregoing checks show the armature to be good, if may be defective in some manner not readily detectable with the hand tester. If all other starter motor and starter motor circuit components check good, but the starter motor still does not turn over or only turns over weakly, replace the starter motor with a new one.

#### Brush Lead Inspection

• Using the  $\times$  1  $\Omega$  hand tester range, measure the continuity between the following:

Terminal Bolt and Positive (+) Brush [A]

Brush Plate and Negative (-) Brush [B]

★If there is not close to zero ohms, the brush lead has an open. Replace the terminal bolt assembly and/or the brush holder assembly.

#### Special Tool - Hand Tester: 57001-1394









### **15-16 ELECTRICAL SYSTEM**

### **Electrical Starter System**

#### Terminal Bolt Inspection

• Using the highest hand tester range, measure the resistance as shown.

Terminal Bolt and Brush Plate [A] Terminal Bolt and Negative Brush Holder [B] Terminal Bolt and Yoke [C]

★ If there is any reading, the brush holder assembly and/or terminal bolt assembly have a short. Replace the brush holder assembly and the terminal bolt assembly.

#### Special Tool - Hand Tester: 57001-1394

#### Starter Relay Inspection

- Remove the left side cover and remove the starter relay.
- Connect the hand tester [A] and 12 V battery [B] to the starter relay [C] as shown.
- ★ If the relay does not work as specified, the relay is defective. Replace the relay.

#### **Testing Relay**

Tester range:	×1Ω
Standard:	When battery is connected $\rightarrow$ 0 $\Omega$
	When battery is disconnected $ ightarrow \infty$ $\Omega$

#### Special Tool - Hand Tester: 57001-1394

#### Starter Circuit Relay Inspection

- Remove the fuel tank, and remove the starter circuit relay [C].
- Connect the hand tester [A] to the 12 V battery [B] as shown.

Relay coil terminals [1] and [2] Relay switch terminals [3] and [4]

#### Special Tool - Hand Tester: 57001-1394

#### Relay Test

Tester range: × 1 Ω

Standard:

when battery is connected  $\rightarrow 0 \ \Omega$ when battery is disconnected  $\rightarrow \infty \Omega$ 

★If the relay does not work as specified, the relay is defective. Replace the relay.







### **Electrical Starter System**



- 2. Starter Button
- 3. Starter Circuit Relay
- 5. Starter Lockout Switch

6. Starter Motor

- 8. Main Fuse 20 A
- 9. Battery

### 15-18 ELECTRICAL SYSTEM

### **Starter Motor Clutch**

#### Starter Motor Clutch Removal

- Remove the alternator rotor (see Alternator Rotor Removal).
- Hold the alternator rotor with the flywheel holder [B] and remove starter motor clutch bolts [C].

Special Tool - Flywheel Holder: 57001-1313

• Remove the starter motor clutch [A].

#### Starter Motor Clutch Installation

- Install the flange [A] of the one-way clutch into the recess of the coupling [B].
- Apply high-lock agent to the starter motor clutch bolts.
- Tighten the starter motor clutch bolts.
  - Torque Starter Motor Clutch Bolts: 12 N·m (1.2 kgf·m, 104 in·lb)

#### Starter Motor Clutch Inspection

- Remove the alternator cover (see Alternator Cover Removal).
- Turn the starter gear by hand. The starter gear should turn clockwise [A] freely, but should not turn counterclockwise [B] by the starter clutch function.
- ★ If the starter motor clutch does not operate as specified or is noisy, disassemble the starter motor clutch to visually inspect the parts. Replace any parts that show wear or damage.
- Visually inspect the starter gear.
- ★If the slide surface [A] is worn or damaged, replace the starter gear.

#### Torque Limiter Inspection

- Remove the torque limiter cover (see Alternator Cover Removal).
- Remove the visually inspect the torque limiter [A].
- ★If the limiter has any wear, discoloration, or other damaged, replace it as a unit.











#### **Digital Meter**

#### Digital Meter Removal

- Remove the headlight unit (see Headlight Bulb Replacement).
- Remove the digital meter nuts [A].
- Disconnect the lead connector and remove the meter unit.

#### **Bulb Replacement**

- Pull the plate type bulb straight to remove [A].
   R/BK, BK/Y [B]
   GY, G [C]
  - BR, LG [D]

#### CAUTION

Do not turn the bulb. Pull the bulb out to prevent damage to the bulb. Do not use bulb rated for greather wattage than the specified value.

#### Switch Inspection

- Turning the ignition switch ON causes all the LCD segments (the letters and numbers of the liquid crystal display) [A] illuminate for 3 seconds.
- ★If they do not illuminate, check the LCD segments (see LCD segment Inspection).
- Check that the display [B] shifts between ODO and CLOCK each time the ODO/CLOCK button [A] is pushed.
   ★ If the display does not shift, replace the meter unit.

 ● Check that the display [B] shifts between TRIP-A and TRIP-B each time the TRIP A/B button [A] is pushed.
 ★ If the display does not shift, replace the meter unit.











### **15-20 ELECTRICAL SYSTEM**

#### **Digital Meter**

- Push the ODO/CLOCK button [A] to display the clock.
- Keep the ODO/CLOCK button pushed, turning ON the TRIP A/B button [B] enables the hours and the minutes of the clock to be set [C]. Verify that the time can be set here (see General Information chapter).
- ★ If the time cannot be set, replace the meter unit.

#### LCD Segment Inspection

- Remove the headlight unit.
- Disconnect the black connector [B] from the meter [A].
   White Connector [C]

- Check that all LCD segments (the letters and numbers of the liquid crystal display) illuminate for 3 seconds after connecting pins [1] and [2] of the black connector [B] to be battery [D], then connecting pins [1] and [3] together. Next, check that all the LCD segments become unit when pin [3] is disconnected.
- ★ If there is any problem, replace the meter unit [A].
- ★If there are no problems, inspect the power wiring. White Connector [C]

#### NOTE

OIn case that the Liquid Crystal Display (LCD) malfunctions, e.g., display freezing, wait for 30 seconds or more after disconnecting it from the battery. The LCD will function normally after reconnected.

#### Speedometer Inspection

- Using a jack, raise the front wheel.
- Turn the ignition switch ON. Turn the front wheel by hand, and see if the speedometer shows the vehicle speed [A] that corresponds to the wheel rotation.
- ★If it does not show properly, inspect the power to the speed sensor.
- Remove the headlight unit.







### **Digital Meter**

- ★If an oscillator is available, check the speedometer by the following points.
- Disconnect the white connector [C], and connect the oscillator [E] to the pin [W] of the connector on the meter. The vehicle speed that corresponds to the input frequency will be displayed when a short wave form such as the one shown in the diagram is input.

Example: An input frequency of 60 Hz will display 60 km/h.

#### Speed Sensor Power Inspection

- Disconnect the white connector [C] and turn the ignition switch ON.
- Using the tester [F] at volt range, make sure that a minimum voltage of 7 V is available between pins [R] and [BK] on the meter.
- ★If the voltage is low or "0", inspect the battery and the power wiring.
- ★If the voltage is normal, inspect the speedometer pulse.

#### CAUTION

#### Do not short pins [R] and [BK], and pins [R] and [W].

#### Speedometer Pulse Inspection

- Disconnect the white connector [C], and use auxiliary leads to connect as original.
- Turn the ignition switch ON.
- Connect the tester's [F] at V range positive [+] terminal to the white [W] lead, and negative [-] terminal to the black [BK] lead.
- Turn the front wheel slowly to see that the tester's pointer fluctuates by repeatedly reading ON (8 V) and OFF (0 V). Repeat this process 8 times for each rotation.
- ★If the speedometer does not show any indication even if the tester's pointer fluctuates, replace the meter unit.
- ★ If the tester's pointer does not fluctuate, replace the speed sensor.

#### ODO Meter Inspection

- During the speedometer inspection, check that the odometer reading increases.
- ★If it does not increase, replace the meter unit.

#### TRIP A/B Meter Check

- During the speedometer inspection, check that the trip meter reading increases.
- Turn ON the TRIP A/B switch 2 seconds or longer, and check that the trip meter reading turns back to 0 the moment the switch is released.
- ★If there is any problem, replace the meter unit.







### **15-22 ELECTRICAL SYSTEM**

### **Digital Meter**



- 3. Ignition Switch
- 6. Battery

# **Lighting System**

#### Turn Signal Relay Inspection

#### • Remove:

The

Headlight Cover Turn Signal Relay

• Connect one 12 V battery and turn signal lights as indicated in the figure, and count how may times the lights flash for one minute.

Turn Signal Relay [A] Turn Signal Lights [B]

- 12 V Battery [C]

1\*\*

2

(\*): Cycle(s) per minute

(\*\*): Corrected to "one light burned out".

★If the lights do not flash as specified, replace the turn signal relay.

#### Tes



sting Turn Signal Relay			
Lo	The chine times		
e Numberof Turn Signal Lights	Wattage (W)	(c/m*)	

140 - 250

75 - 95

21 or 23

42 or 46

### **ELECTRICAL SYSTEM 15-23**

### **15-24 ELECTRICAL SYSTEM**

#### Switches and Sensor

Throttle Sensor Removal and Installation

#### CAUTION

Do not remove the throttle sensor [A] because the sensor's mounting position must be adjusted once it is removed.

 To replace the sensor, see Throttle Sensor Position Adjustment.

#### Throttle Sensor Inspection

- Remove the fuel tank (see Fuel System chapter).
- Use a suitable hose to connect the fuel tank and the carburetor.
- Thoroughly warm up the engine.
- Check:

Idle Speed (see Periodic Maintenance chapter) Battery's state of charge (see this chapter)

• Turn the ignition switch OFF.

 Disconnect the throttle sensor connector and connect the adapter between the connectors.

Special Tool - Throttle Sensor Setting Adapter: 57001 -1400

• Measure the throttle sensor's input voltage. OConnect the hand tester to the adapter.

Hand tester (+)  $\rightarrow$  blue lead (color of lead on throttle sensor)

Hand tester (–)  $\rightarrow$  black lead (color of lead on throttle sensor)

#### Throttle Sensor Input Voltage Standard: 4.9 ~ 5.1 V

- ★If the input voltage is out of standard, inspect the IC igniter.
- Connect the hand tester to the adapter. Hand tester (+) → yellow lead terminal (color of lead on throttle sensor) [C] Hand tester (-) → black lead terminal (color of lead on throttle sensor) [D]
- Start the engine.
- Measure the sensor's output voltage at idle speed.

#### Throttle Sensor Output Voltage (at idle) Standard: 0.9 ~ 1.1 V



#### Switches and Sensor

- ★If the voltage is out of standard, adjust the sensor position (see Throttle Sensor Position Adjustment).
- ★If the voltage is within the standard, perform the following inspection:
- Stop the engine.
- Measure the sensor's output voltage at wide open throttle with the ignition switch turned ON.

#### Throttle Sensor Output Voltage (wide open throttle) Standard: 4.06 ~ 4.26 V

★If the voltage is out of standard, replace the throttle sensor.

#### Throttle Sensor Position Adjustment

• Connect the throttle sensor setting adapter between the sensor lead connectors (see Throttle Sensor Inspection).

Special Tool - Throttle Sensor Setting Adapter: 57001 -1400

- Start the engine.
- Operate the engine at idle speed (see Periodic Maintenance chapter).
- Loosen the sensor mounting screws [A].
- Adjust the sensor mounting position to set the sensor output voltage to the standard, and tighten the mounting screws.

#### Throttle Sensor Output Voltage (at idle) Standard: 0.9 ~ 1.1 V

★If the standard voltage cannot be obtained, replace the throttle sensor.



### **15-26 ELECTRICAL SYSTEM**

### KLX250H6F ~ Wiring Diagram (United States and Canada)



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### KLX250H6F ~ Wiring Diagram (United States and Canada)



### 15-28 ELECTRICAL SYSTEM

### KLX250-H Wiring Diagram (Australia)



### KLX250-H Wiring Diagram (Australia)



### **15-30 ELECTRICAL SYSTEM**

### KLX250-J Wiring Diagram (Europe)



### KLX250-J Wiring Diagram (Europe)



Year	Model	Beginning Frame No.
1999	KLX250-H2	JKALXMH1 DXA024001
1999	KLX250-J2	JKALX250EJA321001
2001	KLX250-H3	JKALXMH1 1A029001
2001	KLX250-J4	JKALX250EJA331001
2002	KLX250-H4	JKALXMH1 2A033001
2003	KLX250-H5	JKALXMH1 D3DA00001
2004	KLX250-H6	JKALXMH1 4DA03071
2005	KLX250-H7	JKALXMH1D5DA07201
2006	KLX250H6F	JKALXMH1D6DA09807
2007	KLX250H7F	JKALXMH1D7DA16201

### **MODEL APPLICATION**

□:This digit in the frame number changes from one machine to another.



Part No.99924-1240-57