

2008 – 2021 Kawasaki KLX140 Service Info

Document created by: Road and Trail (<https://roadandtrail.net>)

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Source: 2008-2021 Kawasaki KLX140 Factory Service Manual (Part No. 99924-1390-14)

Models covered: KLX140/KLX140R, KLX140L/KLX140RL, KLX140G

This information may apply to more current model years (2022-2023), as I don't think there have been any significant changes to the newer models.

Use this document at your own risk.

KLX140A = KLX140/KLX140R: 17-inch front wheel, 14-inch rear wheel

KLX140B = KLX140L/KLX140RL: 19-inch front wheel, 16-inch rear wheel

KLX140C = KLX140G: 21-inch front wheel, 18-inch rear wheel

Torque Values (clean, dry threads unless otherwise specified)

Item	N.m	Standard	Remark
Basic Torque for General Fasteners			
5 mm thread	3.4 – 4.9	30 – 43 in.lb	
6 mm thread	5.9 – 7.8	52 – 69 in.lb	
8 mm thread	14 – 19	10 – 13.5 ft.lb	
10 mm thread	25 – 34	19 – 25 ft.lb	
12 mm thread	44 – 61	33 – 45 ft.lb	
14 mm thread	73 – 98	54 – 72 ft.lb	
16 mm thread	115 – 155	83 – 115 ft.lb	
18 mm thread	165 – 225	125 – 165 ft.lb	
20 mm thread	225 – 325	165 – 240 ft.lb	
Specific Fasteners (incomplete list)			
Spark plug	13	115 in.lb	
Engine oil drain plug	18	13 ft.lb	
Oil filter cover bolt	8.8	78 in.lb	
Valve adjusting screw locknuts	8.8	78 in.lb	
Valve adjusting cap/cover bolts	8.8	78 in.lb	
Camshaft chain cover bolts	8.8	78 in.lb	
Cam chain tensioner mounting bolts	8.8	78 in.lb	
Cam chain tensioner cap bolt	5.2	46 in.lb	
Fuel tap (petcock) mounting bolts	4.9	43 in.lb	
Carburetor holder adapter bolts	8.8	78 in.lb	
Front axle nut	79	58 ft.lb	
Rear axle nut	79	58 ft.lb	
Engine sprocket cover bolts	8.8	78 in.lb	ALT
Rear sprocket nuts, KLX140A/B	32	24 ft.lb	
Rear sprocket bolts, KLX140C	34	25 ft.lb	

Item	N.m	Standard	Remark
Exhaust pipe cover bolts	8.8	78 in.lb	NPLA
Exhaust pipe holder nuts (at engine)	14.7	11 ft.lb	
Muffler cover bolts	8.8	78 in.lb	NPLA
Muffler joint clamp bolts	17	13 ft.lb	
Muffler mounting bolts	30	22 ft.lb	
Brake caliper bleed valves	7.8	69 in.lb	
Brake hose banjo bolts	25	18 ft.lb	
Brake pad bolts	17	13 ft.lb	
Brake pedal pivot bolt	25	18 ft.lb	NPLA, grease pivot
Brake disc mounting bolts, KLX140A/B	9.8	87 in.lb	NPLA
Brake disc mounting bolts, KLX140C	27	20 ft.lb	NPLA, tighten in special sequence
Front caliper mounting bolts	34	25 ft.lb	
Rear caliper mounting bolts	25	18 ft.lb	
Fork bottom bolt	20	15 ft.lb	
Fork top bolt	22.5	17 ft.lb	
Fork clamp bolts, lower	25	18 ft.lb	
Fork clamp bolts, upper	20	15 ft.lb	
Rear shock mounting bolt, upper	39	29 ft.lb	
Rear shock mounting bolt, lower	39	29 ft.lb	
Rear shock mounting nut, lower, KLX140A	29	21	Replace
Rocker arm pivot nut	59	44 ft.lb	Replace
Swingarm pivot shaft nut	108	80 ft.lb	
Tie-rod mounting nuts	59	44 ft.lb	Replace
Steering stem head nut	64	47 ft.lb	
Steering stem nut	4.9	43 in.lb	Special procedure
Handlebar lower holder nut	34	25 ft.lb	Replace
Handlebar clamp bolts	25	18 ft.lb	ALT
Rear frame mounting bolts	34	25 ft.lb	
Side stand pivot bolt	29	21 ft.lb	
Side stand pivot nut	44	32 ft.lb	Replace
Clutch cover bolts	8.8	78 in.lb	
Clutch hub bolt	65	48 ft.lb	NPLA
Clutch spring bolts	8.8	78 in.lb	
Oil seal retaining plate bolts (inside of clutch cover)	9.8	87 in.lb	NPLA

NPLA: Use non-permanent locking agent

ALT: alternately tighten the clamp bolts twice

Spark Plug Gap

0.6 – 0.7 mm (0.02 – 0.03 in)

Valve Clearances

Engine cold (room temperature)

Intake: 0.04 - 0.08 mm (0.002 - 0.003 in)

Exhaust: 0.11 - 0.15 mm (0.0043 - 0.0059 in)

Valve Clearance Inspection

I may supplement this with photos and more description at a later date. You will need an accurate torque wrench (2.5 to 9 N.m range), feeler gauges, assorted metric sockets, grease and shop rags. You may want to record measured valve clearances, so a pen and paper may be required. You may also want to take photos to aid in putting things back together. As for parts, you may need some new O-rings, but it's likely that you'll be able to reuse the existing ones.

1. Clean the motorcycle.
2. Remove the side covers.
3. Remove the seat.
4. I like to disconnect the negative wire of the battery at this point.
5. Remove the tank cover.
6. Turn the fuel tap lever to the off position. Disconnect the fuel line at the fuel tap.
7. Remove the fuel tank mounting bolt and the rubber strap. Lift off the fuel tank and set aside while supporting the underside of the tank so that there is no weight on the fuel tap.
8. Remove the alternator cover centre cap in left side crankcase (alternator) cover. There is a cap (alternator cover plug) on top of the alternator cover that allows viewing and aligning other timing marks. Removal of the cap, and alignment of these timing marks, is not included in the valve clearance inspection section of the service manual.
9. Remove the valve adjusting caps / covers.
10. Remove the camshaft chain cover.
11. Turn the crankshaft **counter clockwise** (use a socket and ratchet or flex bar on the crankshaft bolt). Watch that the intake valve opens and then closes. Continue to rotate the crankshaft until the mark on the camshaft sprocket aligns with the mark (bump) on the top of the cylinder head. The piston will now be at top dead center (TDC) on the compression stroke. You should be able to wiggle both rocker arms.
12. Check the valve clearances with a feeler gauge. Insert the feeler gauge between the adjusting screw and the valve stem. There should be light drag on the feeler gauge. If the valve clearances are out of spec, adjust the valve clearances (see below), otherwise put things back together as follows (basically in reverse order).
13. Install the camshaft chain cover. Apply grease to the O-ring (replace if damaged). Tighten bolts to 8.8 N.m (78 in.lb).
14. Install the valve adjusting caps. Apply grease to the O-rings (replace if damaged). Tighten bolts to 8.8 N.m (78 in.lb).

15. Install the alternator cover centre cap. Apply grease to the O-ring (replace if damaged). Tighten to 2.5 N.m (22 in.lb).
16. Install the fuel tank. Connect the fuel line. Install fuel tank mounting bolt and rubber strap.
17. Install the fuel tank cover.
18. If the battery was disconnected, reconnect it.
19. Install the seat.
20. Install the side covers.

Valve Clearance Adjustment

You'll need a small wrench (3 or 4 mm, I think) or a valve adjusting tool to turn and hold the valve adjusting screw.

1. Follow the valve clearance inspection instructions above (steps 1 – 12).
2. For each valve that needs adjustment, loosen the valve adjusting screw locknut, turn the valve adjusting screw while checking the clearance with a feeler gauge. Remove the feeler gauge. While holding the adjusting screw in position, tighten the locknut. Check the valve clearance, and readjust if necessary. Once satisfied, torque the locknuts to 8.8 N.m (78 in.lb). Recheck the valve clearances and readjust if necessary.
3. As an extra step and double check, rotate the crankshaft a few times, align the timing marks (see step 11 in valve clearance inspection section), and recheck the valve clearances. Readjust if necessary.
4. Put things back together as described in the valve clearance inspection section, step 13 onwards.