MAINTENANCE STANDARDS

Part	Item	GX120K1	
		Standard	Service limit
Engine	Maximum speed	3,850±150 rpm	—
	Maximum speed (DS type)	3,750±150 rpm	—
	Idle speed	1,400±150 rpm	—
	Cylinder compression	6.0–8.5 kg/cm²(85–121 psi)at 600 rpm	—
Cylinder	Sleeve I.D.	60.0 mm (2.36 in)	60.165 mm (2.3687 in)
Cylinder head	Warpage	—	0.10 mm (0.004 in)
Piston	Skirt O.D.	59.985 mm (2.3616 in)	59.845 mm (2.3561 in)
	Piston-to-cylinder clearance	0.015–0.050 mm (0.0006–0.0020 in)	0.12 mm (0.005 in)
	Piston pin bore I.D.	13.002 mm (0.5119 in)	13.048 mm (0.5137 in)
	Pin O.D.	13.0 mm (0.51 in)	12.954 mm (0.5100 in)
	Piston to piston pin bore clearance	0.002–0.014 mm (0.0001–0.0006 in)	0.08 mm (0.003 in)
Piston rings	Ring side clearance: Top/second/oil	0.015–0.045 mm (0.0006–0.0018 in)	0.15 mm (0.006 in)
	Ring end gap: Top/second	0.2–0.4 mm (0.008–0.016 in)	1.0 mm (0.04 in)
	Oil	0.15–0.35 mm (0.006–0.014 in)	1.0 mm (0.04 in)
	Ring width: Top/second	1.5 mm (0.06 in)	1.37 mm (0.054 in)
	Oil	2.5 mm (0.10 in)	2.37 mm (0.093 in)
Connecting rod	Small end I.D.	13.005 mm (0.5120 in)	13.07 mm (0.515 in)
	Big end I.D.	26.02 mm (1.024 in)	26.066 mm (1.0262 in)
	Big end oil clearance	0.040–0.063 mm (0.0016–0.0025 in)	0.12 mm (0.005 in)
	Big end side clearance	0.1–0.7 mm (0.004–0.028 in)	1.1 mm (0.043 in)
Crankshaft	Crankshaft O.D.	25.98 mm (1.023 in)	25.92 mm (1.020 in)
Valves	Valve clearance IN	0.15±0.02 mm (0.006±0.001 in)	—
	EX	0.20±0.02 mm (0.008±0.001 in)	—
	Stem O.D. IN	5.48 mm (0.216 in)	5.318 mm (0.2094 in)
	EX	5.44 mm (0.214 in)	5.275 mm (0.2077 in)
	Guide I.D. IN/EX	5.50 mm (0.217 in)	5.572 mm (0.2194 in)
	Stem clearance IN	0.02–0.044 mm (0.0008–0.0017 in)	0.10 mm (0.004 in)
	EX	0.06–0.087 mm (0.0024–0.0034 in)	0.12 mm (0.005 in)
	Seat width	0.8 mm (0.03 in)	2.0 mm (0.08 in)
	Spring free length	30.5 mm (1.20 in)	29.5 mm (1.16 in)
Camshaft	Cam height IN	27.7 mm (1.09 in)	27.45 mm (1.081 in)
	EX	27.75 mm (1.093 in)	27.50 mm (1.083 in)
	Camshaft O.D.	13.984 mm (0.5506 in)	13.916 mm (0.5479 in)
Crankcase cover	Camshaft holder I.D.	14.0 mm (0.55 in)	14.048 mm (0.5531 in)
Carburetor	Main jet	[1]#60, [2]#62	—
	Float height	13.7 mm (0.54 in)	—
	Pilot screw opening	[1]2 turns out, [2]2-3/8 turns out	—
Spark plug	Gap	0.7–0.8 mm (0.028–0.031 in)	—
Spark plug cap	Resistance	7.5–12.5 kΩ	—
Ignition coil	Resistance Primary coil	0.8–1.0 Ω	—
	Secondary coil	5.9–7.1 kΩ	—
	Air gap (at flywheel)	0.4±0.2 mm (0.016±0.008 in)	—
Starter motor	Brush length	11.0 mm (0.43 in)	6.0 mm (0.24 in)
	Mica depth	1.6 mm (0.06 in)	1.1 mm (0.04 in)
1/2 Reduction (centrifugal clutch type)	Friction disc thickness	3.5 mm (0.14 in)	3.0 mm (0.12 in)
	Clutch plate warpage	—	0.10 mm (0.004 in)

1: Externally vented carburetor bowl (all types except QXC). 2: Internally vented carburetor bowl (QXC type only).
Refer to P. 6-4 for identification of the carburetor vent type.

Part	Item	GX160K1	
		Standard	Service limit
Engine	Maximum speed	3,850±150 rpm	—
	Maximum speed (DS type)	3,750±150 rpm	—
	Idle speed	1,400±150 rpm	—
	Cylinder compression	6.0–8.5 kg/cm²(85–121 psi)at 600 rpm	
Cylinder	Sleeve I.D.	68.0 mm (2.68 in)	68.165 mm (2.6837 in)
Cylinder head	Warpage	—	0.10 mm (0.004 in)
Piston	Skirt O.D.	67.985 mm (2.6766 in)	67.845 mm (2.6711 in)
	Piston-to-cylinder clearance	0.015–0.050 mm (0.0006–0.0020 in)	0.12 mm (0.005 in)
	Piston pin bore I.D.	18.002 mm (0.7087 in)	18.048 mm (0.7105 in)
	Pin O.D.	18.0 mm (0.71 in)	17.954 mm (0.7068 in)
	Piston to piston pin bore clearance	0.002–0.014 mm (0.0001–00006 in)	0.06 mm (0.002 in)
Piston rings	Ring side clearance: Top/second/oil	0.015–0.045 mm (0.0006–0.0018 in)	0.15 mm (0.006 in)
	Ring end gap: Top/second	0.2–0.4 mm (0.008–0.016 in)	1.0 mm (0.04 in)
	Oil	0.15–0.35 mm (0.006–0.014 in)	1.0 mm (0.04 in)
	Ring width: Top/second	1.5 mm (0.06 in)	1.37 mm (0.054 in)
	Oil	2.5 mm (0.10 in)	2.37 mm (0.093 in)
Connecting rod	Small end I.D.	18.002 mm (0.7087 in)	18.07 mm (0.711 in)
	Big end I.D.	30.02 mm (1.182 in)	30.066 mm (1.1837 in)
	Big end oil clearance	0.040–0.063 mm (0.0016–0.0025 in)	0.12 mm (0.005 in)
	Big end side clearance	0.1–0.7 mm (0.004–0.028 in)	1.1 mm (0.043 in)
Crankshaft	Crankshaft O.D.	29.98 mm (1.180 in)	29.92 mm (1.178 in)
Valves	Valve clearance IN	0.15±0.02 mm (0.006±0.001 in)	—
	EX	0.20±0.02 mm (0.008±0.001 in)	—
	Stem O.D. IN	5.48 mm (0.216 in)	5.318 mm (0.2094 in)
	EX	5.44 mm (0.214 in)	5.275 mm (0.2077 in)
	Guide I.D. IN/EX	5.50 mm (0.217 in)	5.572 mm (0.2194 in)
	Stem clearance IN	0.02–0.044 mm (0.0008–0.0017 in)	0.10 mm (0.004 in)
	EX	0.06–0.087 mm (0.0024–0.0034 in)	0.12 mm (0.005 in)
	Seat width	0.8 mm (0.03 in)	2.0 mm (0.08 in)
	Spring free length	**30.5 mm (1.20 in)**	**29.5 mm (1.16 in)**
Camshaft	Cam height IN	27.7 mm (1.09 in)	27.45 mm (1.081 in)
	EX	27.75 mm (1.093 in)	27.50 mm (1.083 in)
	Camshaft O.D.	13.984 mm (0.5506 in)	13.916 mm (0.5479 in)
Crankcase cover	Camshaft holder I.D.	14.0 mm (0.55 in)	14.048 mm (0.5531 in)
Carburetor	Main jet	[1]#72, [2]#68	—
	Float height	13.7 mm (0.54 in)	—
	Pilot screw opening	[1]3 turns out, [2]2-1/8 turns out	—
Spark plug	Gap	0.7–0.8 mm (0.028–0.031 in)	—
Spark plug cap	Resistance	7.5–12.5 kΩ	—
Ignition coil	Resistance Primary coil	0.8–1.0 Ω	—
	Secondary coil	5.9–7.1 kΩ	—
	Air gap (at flywheel)	0.4±0.2 mm (0.016±0.008 in)	—
Starter motor	Brush length	11.0 mm (0.43 in)	6.0 mm (0.24 in)
	Mica depth	1.6 mm (0.06 in)	1.1 mm (0.04 in)
1/2 Reduction (centrifugal clutch type)	Friction disc thickness	3.5 mm (0.14 in)	3.0 mm (0.12 in)
	Clutch plate warpage	—	0.10 mm (0.004 in)

1: Externally vented carburetor bowl (all types except QXC). 2: Internally vented carburetor bowl (QXC type only).
Refer to P. 6-4 for identification of the carburetor vent type.

MAINTENANCE STANDARDS

Part	Item	GX240K1		GX270	
		Standard	Service limit	Standard	Service limit
Engine	Maximum speed Idle speed Cylinder compression	3,850 ± 150 rpm 1,400 ± 150 rpm 6.0–8.5 kg/cm² (85–121 psi) at 600 rpm	– – –	3,850 ± 150 rpm 1,400 ± 150 rpm 6.0–8.5 kg/cm² (85–121 psi) at 600 rpm	– – –
Cylinder	Sleeve I.D.	73.00 mm (2.874 in)	73.17 mm (2.881 in)	77.00 mm (3.031 in)	77.17 mm (3.038 in)
Cylinder head	Warpage	–	0.10 mm (0.004 in)	–	0.10 mm (0.004 in)
Piston	Skirt O.D. Piston-to-cylinder clearance Piston pin bore I.D. Pin O.D. Piston-to-piston pin bore clearance	72.985 mm (2.8734 in) 0.015–0.052 mm (0.0006–0.0020 in) 18.002 mm (0.7087 in) 18.00 mm (0.709 in) 0.002–0.014 mm (0.0001–0.0006 in)	72.62 mm (2.859 in) 0.12 mm (0.005 in) 18.042 mm (0.7103 in) 17.95 mm (0.707 in) 0.08 mm (0.003 in)	76.985 mm (3.0309 in) 0.015–0.052 mm (0.0006–0.0020 in) 18.002 mm (0.7087 in) 18.00 mm (0.709 in) 0.002–0.014 mm (0.0001–0.0006 in)	76.85 mm (3.026 in) 0.12 mm (0.005 in) 18.042 mm (0.7103 in) 17.95 mm (0.707 in) 0.08 mm (0.003 in)
Piston rings	Ring side clearance: Top/second/oil Ring end gap: Top/second Oil Ring width: Top/second Oil	0.015–0.045 mm (0.0006–0.0018 in) 0.2–0.4 mm (0.01–0.02 in) 0.2–0.4 mm (0.01–0.02 in) 2.0 mm (0.08 in) 2.8 mm (0.110 in)	0.15 mm (0.006 in) 1.0 mm (0.04 in) 1.0 mm (0.04 in) 1.75 mm (0.069 in) 2.7 mm (0.106 in)	*1 0.015–0.045 mm (0.0006–0.0018 in) 0.2–0.4 mm (0.01–0.02 in) 0.2–0.7 mm (0.01–0.03 in) 2.0 mm (0.08 in) –	0.15 mm (0.006 in) 1.0 mm (0.04 in) 1.0 mm (0.04 in) 1.75 mm (0.069 in) –
Connecting rod	Small end I.D. Big end I.D. Big end oil clearance Big end side clearance	18.005 mm (0.7089 in) 33.025 mm (1.3002 in) 0.040–0.066 mm (0.0016–0.0026 in) 0.1–0.7 mm (0.004–0.028 in)	18.07 mm (0.711 in) 33.07 mm (1.302 in) 0.12 mm (0.005 in) 1.0mm (0.04 in)	18.005 mm (0.7089 in) 33.025 mm (1.3002 in) 0.040–0.066 mm (0.0016–0.0026 in) 0.1–0.7 mm (0.004–0.028 in)	18.07 mm (0.711 in) 33.07 mm (1.302 in) 0.12 mm (0.005 in) 1.0 mm (0.04 in)
Crankshaft	Crankshaft O.D.	32.985 mm (1.2986 in)	32.92 mm (1.296 in)	32.985 mm (1.2986 in)	32.92 mm (1.296 in)
Valves	Valve clearance IN EX Stem O.D. IN EX Guide I.D. IN/EX Stem clearance IN EX Seat width Spring free length	0.15 ± 0.02 mm (0.006 ± 0.001 in) 0.20 ± 0.02 mm (0.008 ± 0.001 in) 6.59 mm (0.259 in) 6.55 mm (0.258 in) 6.60 mm (0.260 in) 0.010–0.037 mm (0.0004–0.0015 in) 0.050–0.077 mm (0.0020–0.0030 in) 1.1 mm (0.04 in) 39.0 mm (1.54 in)	– – 6.44 mm (0.254 in) 6.40 mm (0.252 in) 6.66 mm (0.262 in) 0.10 mm (0.004 in) 0.12 mm (0.005 in) 2.0 mm (0.08 in) 37.5 mm (1.48 in)	0.15 ± 0.02 mm (0.006 ± 0.001 in) 0.20 ± 0.02 mm (0.008 ± 0.001 in) 6.59 mm (0.259 in) 6.55 mm (0.258 in) 6.60 mm (0.260 in) 0.010–0.037 mm (0.0004–0.0015 in) 0.050–0.077 mm (0.0020–0.0030 in) 1.1 mm (0.04 in) 39.0 mm (1.54 in)	– – 6.44 mm (0.254 in) 6.40 mm (0.252 in) 6.66 mm (0.262 in) 0.10 mm (0.004 in) 0.12 mm (0.005 in) 2.0 mm (0.08 in) 37.5 mm (1.48 in)
Camshaft	Cam height IN EX Camshaft O.D.	31.52–31.92 mm (1.241–1.257 in) 31.56–31.96 mm (1.243–1.258 in) 15.984 mm (0.6293 in)	31.35 mm (1.234 in) 31.35 mm (1.234 in) 15.92 mm (0.627 in)	31.52–31.92 mm (1.241–1.257 in) 31.56–31.96 mm (1.243–1.258 in) 15.984 mm (0.6293 in)	31.35 mm (1.234 in) 31.35 mm (1.234 in) 15.92 mm (0.627 in)
Crankcase cover	Camshaft holder I.D.	16.0 mm (0.63 in)	16.05 mm (0.632 in)	16.0 mm (0.63 in)	16.05 mm (0.632 in)
Carburetor	Main jet Float height Pilot screw opening	*2 #85, *3 #92 13.2 mm (0.52 in) 2	– – –	*2 #88, *3 #95 13.2 mm (0.52 in) *2 2-7/8, *3 2	– – –
Spark plug	Gap	0.7–0.8 mm (0.028–0.031 in)	–	0.7–0.8 mm (0.028–0.031 in)	–
Spark plug cap	Resistance	7.5–12.5 kΩ	–	7.5–12.5 kΩ	–
Ignition coil	Resistance Primary coil Secondary coil Air gap (at flywheel)	0.8–1.0 Ω 5.9–7.1 kΩ 0.4 ± 0.2 mm (0.016 ± 0.008 in)	– – –	0.8–1.0 Ω 5.9–7.1 kΩ 0.4 ± 0.2 mm (0.016 ± 0.008 in)	– – –
Starter motor	Brush length Mica depth	7.0 mm (0.28 in) 1.0 mm (0.04 in)	3.5 mm (0.14 in) 0.2 mm (0.01 in)	7.0 mm (0.28 in) 1.0 mm (0.04 in)	3.5 mm (0.14 in) 0.2 mm (0.01 in)
1/2 Reduction (Centrifugal clutch type)	Friction disc thickness Clutch plate warpage	3.5 mm (0.14 in) –	3.0 mm (0.12 in) 0.10 mm (0.004 in)	3.5 mm (0.14 in) –	3.0 mm (0.12 in) 0.10 mm (0.004 in)

*1: Top/second ring only.
*2: Externally vented carburator bowl (all types except QXC).
*3: Internally vented carburetor bowl (QXC type only).
Refer to P.6-4 for identification of the carburetor vent type.

Part	Item	GX340K1		GX390K1	
		Standard	Service limit	Standard	Service limit
Engine	Maximum speed	3,850 ± 150 rpm	—	3,850 ± 150 rpm	—
	Idle speed	1,400 ± 150 rpm	—	1,400 ± 150 rpm	—
	Cylinder compression	6.0–8.5 kg/cm² (85–121 psi) at 600 rpm	—	6.0–8.5 kg/cm² (85–121 psi) at 600 rpm	—
Cylinder	Sleeve I.D.	82.00 mm (3.228 in)	82.17 mm (3.235 in)	88.00 mm (3.465 in)	88.17 mm (3.471 in)
Cylinder head	Warpage	—	0.10 mm (0.004 in)	—	0.10 mm (0.004 in)
Piston	Skirt O.D.	81.985 mm (3.2277 in)	81.85 mm (3.222 in)	87.985 mm (3.4640 in)	87.85 mm (3.459 in)
	Piston-to-cylinder clearance	0.015–0.052 mm (0.0006–0.0020 in)	0.12 mm (0.005 in)	0.015–0.052 mm (0.0006–0.0020 in)	0.12 mm (0.005 in)
	Piston pin bore I.D.	20.002 mm (0.7875 in)	20.042 mm (0.7891 in)	20.002 mm (0.7875 in)	20.042 mm (0.7891 in)
	Pin O.D.	20.00 mm (0.787 in)	19.95 mm (0.785 in)	20.00 mm (0.787 in)	19.95 mm (0.785 in)
	Piston-to-piston pin bore clearance	0.002–0.014 mm (0.0001–0.0006 in)	0.08 mm (0.003 in)	0.002–0.014 mm (0.0001–0.0006 in)	0.08 mm (0.003 in)
Piston rings	Ring side clearance: Top/second	0.030–0.060 mm (0.0012–0.0024 in)	0.15 mm (0.006 in)	0.030–0.060 mm (0.0012–0.0024 in)	0.15 mm (0.006 in)
	Ring end gap: Top/second	0.2–0.4 mm (0.01–0.02 in)	1.0 mm (0.04 in)	0.2–0.4 mm (0.01–0.02 in)	1.0 mm (0.04 in)
	Oil	0.2–0.7 mm (0.01–0.03 in)	1.0 mm (0.04 in)	0.2–0.7 mm (0.01–0.03 in)	1.0 mm (0.04 in)
	Ring width: Top/second	2.0 mm (0.08 in)	1.75 mm (0.069 in)	2.0 mm (0.08 in)	1.75 mm (0.069 in)
Connecting rod	Small end I.D.	20.005 mm (0.7876 in)	20.07 mm (0.790 in)	20.005 mm (0.7876 in)	20.07 mm (0.790 in)
	Big end I.D.	36.025 mm (1.4183 in)	36.07 mm (1.420 in)	36.025 mm (1.4183 in)	36.07 mm (1.420 in)
	Big end oil clearance	0.040–0.066 mm (0.0016–0.0026 in)	0.12 mm (0.005 in)	0.040–0.066 mm (0.0016–0.0026 in)	0.12 mm (0.005 in)
	Big end side clearance	0.1–0.7 mm (0.004–0.028 in)	1.0mm (0.04 in)	0.1–0.7 mm (0.004–0.028 in)	1.0 mm (0.04 in)
Crankshaft	Crankshaft O.D.	35.985 mm (1.4167 in)	35.93 mm (1.415 in)	35.985 mm (1.4167 in)	35.93 mm (1.415 in)
Valves	Valve clearance IN	0.15 ± 0.02 mm (0.006 ± 0.001 in)	—	0.15 ± 0.02 mm (0.006 ± 0.001 in)	—
	EX	0.20 ± 0.02 mm (0.008 ± 0.001 in)	—	0.20 ± 0.02 mm (0.008 ± 0.001 in)	—
	Stem O.D. IN	6.59 mm (0.259 in)	6.44 mm (0.254 in)	6.59 mm (0.259 in)	6.44 mm (0.254 in)
	EX	6.55 mm (0.258 in)	6.40 mm (0.252 in)	6.55 mm (0.258 in)	6.40 mm (0.252 in)
	Guide I.D. IN/EX	6.60 mm (0.260 in)	6.66 mm (0.262 in)	6.60 mm (0.260 in)	6.66 mm (0.262 in)
	Stem clearance IN	0.010–0.040 mm (0.0004–0.0016 in)	0.11 mm (0.004 in)	0.010–0.040 mm (0.0004–0.0016 in)	0.11 mm (0.004 in)
	EX	0.050–0.080 mm (0.0020–0.0031 in)	0.13 mm (0.005 in)	0.050–0.080 mm (0.0020–0.0031 in)	0.13 mm (0.005 in)
	Seat width	1.1 mm (0.04 in)	2.0 mm (0.08 in)	1.1 mm (0.04 in)	2.0 mm (0.08 in)
	Spring free length	39.0 mm (1.54 in)	37.5 mm (1.48 in)	39.0 mm (1.54 in)	37.5 mm (1.48 in)
Camshaft	Cam height IN	31.85–32.25 mm (1.254–1.270 in)	31.10 mm (1.224 in)	32.40–32.80 mm (1.276–1.291 in)	32.25 mm (1.270 in)
	EX	31.57–31.97 mm (1.243–1.259 in)	31.80 mm (1.252 in)	31.89–32.29 mm (1.256–1.271 in)	31.75 mm (1.250 in)
	Camshaft O.D.	15.984 mm (0.6293 in)	15.92 mm (0.627 in)	15.984 mm (0.6293 in)	15.92 mm (0.627 in)
Crankcase cover	Camshaft holder I.D.	16.0 mm (0.63 in)	16.05 mm (0.632 in)	16.0 mm (0.63 in)	16.05 mm (0.632 in)
Carburetor	Main jet	*1 #98, *2 #108	—	*1 #105, *2 #115	—
	Float height	13.2 mm (0.52 in)	—	13.2 mm (0.52 in)	—
	Pilot screw opening	*1 2-1/2, *2 3	—	*1 2-1/4 *2 2-1/4	—
Spark plug	Gap	0.7–0.8 mm (0.028–0.031 in)	—	0.7–0.8 mm (0.028–0.031 in)	—
Spark plug cap	Resistance	7.5–12.5 kΩ	—	7.5–12.5 kΩ	—
Ignition coil	Resistance Primary coil	0.8–1.0 Ω	—	0.8–1.0 Ω	—
	Secondary coil	5.9–7.1 kΩ	—	5.9–7.1 kΩ	—
	Air gap (at flywheel)	0.4 ± 0.2 mm (0.016 ± 0.008 in)	—	0.4 ± 0.2 mm (0.016 ± 0.008 in)	—
Starter motor	Brush length	7.0 mm (0.28 in)	3.5 mm (0.14 in)	7.0 mm (0.28 in)	3.5 mm (0.14 in)
	Mica depth	1.0 mm (0.04 in)	0.2 mm (0.01 in)	1.0 mm (0.04 in)	0.2 mm (0.01 in)

*1: Externally vented carburetor bowl (all types except QXC and QXE).
*2: Internally vented carburetor bowl (QXC and QXE types only).
Refer to P. 6-4 for identification of the carburetor vent type.