

SERVICE DATA

10-02-07

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	33 (1.3)	—
	EX.	28 (1.1)	—
Valve clearance (when cold)	IN.	0.05 – 0.10 (0.002 – 0.004)	—
	EX.	0.08 – 0.13 (0.003 – 0.005)	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037 (0.0004 – 0.0015)	—
	EX.	0.030 – 0.057 (0.0012 – 0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.500 – 5.512 (0.2165 – 0.2170)	—
Valve stem O.D.	IN.	5.475 – 5.490 (0.2146 – 0.2161)	—
	EX.	5.455 – 5.470 (0.2148 – 0.2154)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	2.6 (0.1)
Valve seat width	IN. & EX.	0.9 – 1.1 (0.04 – 0.05)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.1 (1.38)
	OUTER	—	40.6 (1.60)
Valve spring tension (IN. & EX.)	INNER	70 – 90 N (7.1 – 9.2 kgf, 15.7 – 20.3 lbs) at length 32.5 mm (1.28 in)	—
	OUTER	170 – 209 N (17.3 – 21.3 kgf, 38.1 – 47.0 lbs) at length 36.0 mm (1.42 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	34.174 – 34.218 (1.3454 – 1.3472)	33.870 (1.3335)
	EX.	33.804 – 33.848 (1.3309 – 1.3326)	33.500 (1.3189)
Camshaft journal oil clearance	IN. & EX.	0.032 – 0.066 (0.0013 – 0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012 – 22.025 (0.8666 – 0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959 – 21.980 (0.8645 – 0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000 – 12.018 (0.4724 – 0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.977 – 11.995 (0.4715 – 0.4722)	—
Cylinder head distortion	—		0.05 (0.002)
Cylinder head cover distortion	—		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Compression pressure	1 400 kPa (14 kgf/cm ² , 199 psi)		980 kPa (9.8 kgf/cm ² , 139 psi)
Piston to cylinder clearance	0.020 – 0.030 (0.0008 – 0.0012)		0.120 (0.0047)
Cylinder bore	65.980 – 65.995 (2.5976 – 2.5982)		66.115 (2.6030)
Piston diam.	65.955 – 65.970 (2.5966 – 2.5972) Measure at 15 mm (0.59 in) from the skirt end.		65.835 (2.5919)
Cylinder distortion	—		0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 8.7 (0.34)
	2nd	R	Approx. 8.1 (0.32)
Piston ring end gap	1st	0.10 – 0.25 (0.004 – 0.010)	
	2nd	0.10 – 0.25 (0.004 – 0.010)	
Piston ring to groove clearance	1st	—	
	2nd	—	

ITEM	STANDARD		LIMIT
Piston ring groove width	1st	1.01 – 1.04 (0.040 – 0.041)	
	2nd	1.21 – 1.23 (0.047 – 0.048)	
	Oil	2.01 – 2.03 (0.079 – 0.080)	
Piston ring thickness	1st	0.970 – 0.990 (0.038 – 0.039)	—
	2nd	1.170 – 1.190 (0.046 – 0.047)	—
Piston pin bore	16.002 – 16.008 (0.6300 – 0.6302)		16.030 (0.6311)
Piston pin O.D.	15.996 – 16.000 (0.6298 – 0.6299)		15.980 (0.6291)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	16.006 – 16.016 (0.6302 – 0.6306)	16.040 (0.6315)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10 – 0.45 (0.004 – 0.018)	1.00 (0.039)
Conrod big end width	17.95 – 18.00 (0.707 – 0.709)	—
Crank web to web width	53.0 ± 0.1 (2.09 ± 0.004)	—
Crankshaft runout	—	0.08 (0.003)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	2.000 (30/15)	—
Oil pressure (at 60 °C, 140 °F)	Above 15 kPa (0.15 kgf/cm ² , 2.1 psi) Below 35 kPa (0.35 kgf/cm ² , 4.9 psi) at 3 000 r/min	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10 – 15 (0.4 – 0.6)	—
Clutch release screw	1/4 turn back	—
Clutch plate thickness	2.9 – 3.1 (0.114 – 0.122)	2.6 (0.10)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	31.0 (1.22)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.157 (60/19)		—
Final reduction ratio		3.000 (45/15)		—
Gear ratios	Low	3.000 (33/11)		—
	2nd	1.933 (29/15)		—
	3rd	1.437 (23/16)		—
	4th	1.095 (23/21)		—
	Top	0.913 (21/23)		—
Shift fork to groove clearance		0.10 – 0.30 (0.004 – 0.012)		—
Shift fork groove width		No.1, 2, 3	5.0 – 5.1 (0.20 – 0.21)	—
Shift fork thickness		No.1, 2, 3	4.8 – 4.9 (0.18 – 0.19)	—
Drive chain	Type	D.I.D. 520V5		—
	Links	112 links		—
	20-pitch length	—		319.4 (12.57)
Drive chain slack		25 – 40 (1.0 – 1.6)		—

CARBURETOR

ITEM	SPECIFICATION	
	E-03, 28	E-33
Carburetor type	MIKUNI BST31SS	←
Bore size	31 mm	←
I.D. No.	42AC	42AE
Idle r/min	1 500 ± 100 r/min	←
Float height	13.0 ± 1.0 mm (0.51 ± 0.04 in)	←
Main jet (M.J.)	#125	←
Jet needle (J.N.)	5D77	←
Needle jet (N.J.)	P-5M	←
Throttle valve (Th.V.)	#125	←
Pilot jet (P.J.)	#35	←
Starter jet (G.S.)	#25	←
Pilot screw (P.S.)	PRE-SET	←
Throttle cable play	2 – 4 mm (0.08 – 0.16 in)	←

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION	NOTE
Spark plug	Type	DENSO: X24ESR-U NGK: DR8EA	
	Gap	0.6 – 0.7 (0.024 – 0.028)	
Spark performance		Over 8 mm (0.3) at 1 atm.	
Signal coil resistance		100 – 140 Ω	G – BI
Ignition coil resistance	Primary	2 – 6 Ω	Terminal – Terminal
	Secondary	20 – 30 k Ω	Plug cap – Terminal
Generator coil resistance		Charging 0.1 – 1.5 Ω	
Generator no-load voltage		More than 60 V (AC) at 5 000 r/min	
Generator Max. output		150 W at 5 000 r/min	
Regulated voltage		13.0 – 16.0 V at 5 000 r/min	
Starter relay resistance		2 – 6 Ω	
Battery	Type designation	YTX7L-BS	
	Capacity	12 V 21.6 kC (6 Ah)/10 HR	
Fuse size		20 A	

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Brake light/Taillight		21/5
Turn signal light		21
Speedometer light		3.4
Turn signal indicator light		3.4
High beam indicator light		1.7
Neutral indicator light		3.4

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Brake lever play	0.1 – 0.3 (0.004 – 0.010)		—
Rear brake pedal free travel	20 – 30 (0.8 – 1.2)		—
Rear brake pedal height	2.5 (0.10)		—
Brake drum I.D.	Rear	—	130.7 (5.15)
Brake lining thickness	Rear	—	1.5 (0.06)
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.12)
Brake disc runout	Front	—	0.30 (0.012)
Master cylinder bore	Front	12.700 – 12.743 (0.5000 – 0.5017)	—
Master cylinder piston diam.	Front	12.657 – 12.684 (0.4983 – 0.4994)	—
Brake caliper cylinder bore	Front	33.960 – 34.010 (1.3370 – 1.3390)	—
Brake caliper piston diam.	Front	33.878 – 33.928 (1.3338 – 1.3357)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Wheel rim size	Front	J21 × 1.60	—
	Rear	J18 × 2.15	—
Tire size	Front	70/100-21 M/C 44P	—
	Rear	100/90-18 M/C 56P	—
Tire tread depth	Front	—	3.0 (0.12)
	Rear	—	3.0 (0.12)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	205 (8.1)	—	
Front fork spring free length	—	561 (22.1)	
Front fork oil level	179.5 (7.07)	—	
Rear shock absorber spring pre-set length	231 (9.1)	—	
Rear wheel travel	205 (8.1)	—	
Swingarm pivot shaft runout	—	0.6 (0.02)	

TIRE PRESSUER

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm ²	psi	kPa	kgf/cm ²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	175	1.75	25	200	2.00	29

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane (R/2 + M/2) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.	
Fuel tank capacity including reserve	13.0 L (3.4/2.9 US/Imp qt)	E-03, 28
	12.5 L (3.3/2.7 US/Imp qt)	E-33
reserve	2.5 L (0.7/0.5 US/Imp qt)	
Engine oil type	SAE 10W-40, API SF/SG or SH/SJ with JASO MA	
Engine oil capacity	Change 850 ml (0.90/0.75 US/Imp qt)	
	Filter change 950 ml (1.00/0.84 US/Imp qt)	
	Overhaul 1 100 ml (1.2/1.0 US/Imp qt)	
Front fork oil type	Fork oil #10	
Front fork oil capacity (each leg)	309 ml (10.4/10.9 US/Imp oz)	
Brake fluid type	DOT 4	

TIGHTENING TORQUE ENGINE

ITEM	N-m	kgf-m	lbf-ft
Cylinder head cover bolt	10	1.0	7.0
Camshaft sprocket bolt	11	1.1	8.0
Cylinder head nut 8 mm Diam.	27	2.7	19.5
Cylinder head nut 6 mm Diam.	10	1.0	7.0
Cylinder base nut	10	1.0	7.0
Starter clutch securing bolt	25	2.5	18.0
Cam drive chain tension adjuster bolt	7	0.7	5.0
Generator rotor nut	80	8.0	58
Crankcase bolt	11	1.1	8.0
Primary drive gear nut	50	5.0	36.0
Clutch cover bolt and generator cover bolt	10	1.0	7.0
Starter motor lead wire connecting bolt	25	0.25	1.8
Starter motor mounting bolt	10	1.0	7.0
Clutch sleeve hub nut	50	5.0	36.0
Gearshift arm stopper	19	1.9	13.5
Engine oil drain plug	28	2.8	2.0
Oil filter cap nut and oil pump filter cap bolt	7	0.7	5.0
Engine sprocket bolt	25	2.5	18.0
Engine mounting bolt (Top side)	41	4.1	29.5
Engine mounting bolt (Front side)	88	8.8	63.5
Engine mounting bolt (Rear side)	10	1.0	7.0
Engine mounting bracket bolt	41	4.1	29.5
Exhaust pipe nut	23	2.3	16.5
Muffler connection bolt	23	2.3	16.5
Muffler mounting bolt (Front side)	23	2.3	16.5
Muffler mounting bolt (Rear side)	44	4.4	32.0

CHASSIS

ITEM	N·m	kgf-m	lbf-ft
Front axle nut	48	4.8	34.5
Front fork damper rod bolt	20	2.0	14.5
Front fork lower clamp bolt	29	2.9	21.0
Front fork upper clamp bolt	29	2.9	21.0
Steering stem head nut	90	9.0	65.0
Handlebar clamp bolt	25	2.5	18.0
Handlebar holder nut	45	4.5	32.5
Front brake master cylinder mounting bolt	10	1.0	7.0
Front brake caliper mounting bolt	26	2.6	19.0
Front brake pad mounting bolt	18	1.8	13.0
Front brake caliper axle bolt	23	2.3	16.5
Front brake hose union bolt	23	2.3	16.5
Air bleeder valve	8	0.8	6.0
Front brake disc bolt	23	2.3	16.5
Front footrest nut	42	4.2	30.5
Swingarm pivot nut	65	6.5	47.0
Front footrest bolt	94	9.4	68.0
Rear torque link nut	13	1.3	9.5
Rear shock absorber nut (Upper & lower)	60	6.0	43.5
Rear cushion lever center nut	72	7.2	52.0
Rear cushion lever nut	78	7.8	56.5
Rear axle nut	65	6.5	47.0
Rear sprocket bolt	27	2.7	19.5
Rear brake cam lever bolt	11	1.1	8.0
Rear brake pedal nut	13	1.3	9.5
Spoke nipple	4.5	0.45	3.0