Motorcycle
2012 Model: TU250XL2
Date: May 2011

MSRP $4,099

Black / Gray (HBV)

Key Features

1. 249cc, air-cooled four-stroke, single-cylinder, SOHC engine with Suzuki's industry leading fuel injection system is tuned for strong low-end torque well-suited for city riding.

2. Suzuki Composite Electrochemical Material (SCEM) Plated cylinder for improved durability, weight reduction and superior heat transfer.

3. Effective engine management and emissions control systems working together with Suzuki Dual Throttle Valve (SDTV) fuel injection system, featuring 32mm throttle body, provides superb throttle response, smooth power delivery and reduced emissions.

4. Digital ignition provides optimum ignition timing for increased efficiency and crisp throttle response.

5. Contemporary styling thanks to chrome-plated front and rear wheels, headlight case, speedometer cover, tail lamp housing, front suspension outer tube and polished crank side case produce a beautiful, high quality look.

6. Low 30.3 inch seat height and compact chassis provide confidence-inspiring performance for beginning riders.

7. Smooth-shifting 5-speed transmission has gear ratios suitable for a wide variety of riding conditions.

8. Diamond-shaped steel tube frame is lightweight and strong, producing confident and agile handling.

9. Exhaust system is outfitted with a catalytic converter and oxygen sensor feedback system reducing exhaust emission.

10. 3.2-gallon fuel tank and fuel-efficient engine provide excellent riding range.

11. Front disc brake with dual-piston caliper and rear drum brakes offer strong braking capabilities.

SPECIFICATIONS MODEL: TU250XL2 (E03)

DIMENSIONS AND CURB MASS

Overall length..... 2070 mm (81.5 in)
Overall width..... 750 mm (29.5 in)
Overall height..... 1075 mm (42.3 in)
Wheelbase..... 1375 mm (54.1 in)
Ground clearance..... 165 mm (6.5 in)
Seat height..... 770 mm (30.3 in)
Curb mass..... 148 kg (326 lbs)

ENGINE

Type..... 4-stroke, air-cooled, OHC
Number of cylinders..... 1
Bore..... 72.0 mm (2.835 in)
Stroke..... 61.2 mm (2.409 in)
Displacement..... 249 cm3 (15.19 cu. in)
Compression ratio..... 9.2 : 1
Fuel system ..... Fuel injection
Air cleaner..... Polyurethane foam element
Starter system..... Electric
Lubrication system..... Wet sump
Idle speed..... 1300 ± 100 r/min

DRIVE TRAIN

Clutch..... Wet multi-plate type
Transmission..... 5-speed constant mesh
Gearshift pattern..... 1-down, 4-up
Primary reduction ratio..... 3.238 (68/21)
Gear ratios, Low..... 2.636 (29/11)
2nd..... 1.687 (27/16)
3rd..... 1.200 (24/20)
4th..... 0.952 (20/21)
Top..... 0.818 (18/22)
Final reduction ratio..... 2.866 (43/15)
Drive chain..... DID520V, 108 links

CHASSIS

Front suspension..... Telescopic, coil spring, oil damped
Rear suspension..... Swingarm type, coil spring, oil damped
Front suspension stroke..... 120 mm (4.7 in)
Rear wheel travel..... 95 mm (3.7 in)
Caster..... 25° 55’
Trail..... 92 mm (3.62 in)
Steering angle..... 40° (right & left)
Turning radius..... 2.4 m (7.9 ft)
Front brake..... Disc brake
Rear brake..... Drum brake
Front tire..... 90/90-18M/C 51S, tube type
Rear tire..... 110/90-18M/C 61S, tube type

ELECTRICAL

Ignition type..... Electronic ignition (Transistorized)
Ignition timing..... 5° B.T.D.C. at 1300 r/min
Spark plug..... NGK DR8EA or DENSO X24ESR-U
Battery..... 12V 21.6 kC (6 Ah)/10 HR
Generator..... Three-phase A.C. generator
Main fuse..... 30A
Fuse..... 10/10/10/10/10A
Headlight..... 12V 60/55W (H4)
Brake/Tail light..... 12V 21/5W
Turn signal light..... 12V 21W
License plate light..... 12V 5W
Speedometer light..... 12V 1.7W
Neutral indicator light..... 12V 3.4W
High beam indicator light..... 12V 1.7W
Turn signal indicator light..... 12V 1.7W
Fuel level indicator light..... 12V 3.4W
Fuel injection indicator light..... 12V 3W

CAPACITIES

Fuel tank, including reserve..... 12.0 L (3.2/2.6 US/Imp gal)
Engine oil, oil change..... 1400 ml (1.5/1.2 US/Imp qt)
with filter change..... 1500 ml (1.6/1.3 US/Imp qt)
overhaul..... 1900 ml (2.0/1.7 US/Imp qt)

SERVICE DATA

VALVE + VALVE GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	34 (1.3)	—
	EX.	29 (1.1)	—
Valve clearance (when cold)	IN.	0.03 – 0.08 (0.001 – 0.003)	—
	EX.	0.08 – 0.13 (0.003 – 0.005)	—
Valve guide to valve stem clearance	IN.	0.025 – 0.052 (0.0010 – 0.0020)	—
	EX.	0.040 – 0.067 (0.0016 – 0.0026)	—
Valve guide I.D.	IN. & EX.	5.500 – 5.512 (0.2165 – 0.2170)	—
Valve stem O.D.	IN.	5.460 – 5.475 (0.2150 – 0.2156)	—
	EX.	5.445 – 5.460 (0.2144 – 0.2150)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	2.1 (0.08)
Valve seat width	IN. & EX.	0.9 – 1.1 (0.035 – 0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length	IN. & EX.	—	39.3 (1.55)
Valve spring tension	IN. & EX.	185 – 219 N (18.9 – 22.3 kgf, 41.7 – 49.2 lbs) at length 36.0 mm (1.42 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.84 – 33.89 (1.332 – 1.334)	33.54 (1.320)
	EX.	33.30 – 33.35 (1.311 – 1.313)	33.00 (1.299)
Camshaft runout	—		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.	11.983 – 11.994 (0.4718 – 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	1 200 – 1 400 kPa (12 – 14 kgf/cm², 171 – 199 psi)			850 kPa (8.5 kgf/cm², 121 psi)
Piston to cylinder clearance	0.020 – 0.030 (0.0008 – 0.0012)			0.120 (0.0047)
Cylinder bore	72.000 – 72.015 (2.8346 – 2.8352)			Nicks or Scratches
Piston diam.	71.975 – 71.990 (2.8337 – 2.8342) Measure at 10 mm (0.4 in) from the skirt end.			71.880 (2.8299)
Cylinder distortion	—			0.05 (0.002)
Piston ring free end gap	1st	N	Approx. 10.0 (0.39)	8.0 (0.31)
	2nd	N	Approx. 11.0 (0.31)	8.8 (0.35)
Piston ring end gap	1st	N	0.10 – 0.22 (0.004 – 0.009)	0.50 (0.020)
	2nd	N	0.22 – 0.34 (0.009 – 0.013)	0.70 (0.028)
Piston ring to groove clearance	1st		—	0.180 (0.0071)
	2nd		—	0.150 (0.0059)
Piston ring groove width	1st		1.01 – 1.03 (0.0398 – 0.0406)	—
	2nd		1.21 – 1.23 (0.0476 – 0.0484)	—
	Oil		2.51 – 2.53 (0.0988 – 0.0996)	—

ITEM	STANDARD		LIMIT
Piston ring thickness	1st	0.975 – 0.990 (0.0384 – 0.0390)	—
	2nd	1.170 – 1.190 (0.0461 – 0.0469)	—
Piston pin bore I.D.	18.002 – 18.008 (0.7087 – 0.7090)		18.030 (0.7098)
Piston pin O.D.	17.992 – 18.000 (0.7083 – 0.7087)		17.980 (0.7079)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	18.006 – 18.016 (0.7089 – 0.7093)	18.040 (0.7102)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10 – 0.65 (0.004 – 0.026)	1.0 (0.04)
Conrod big end width	20.95 – 21.00 (0.825 – 0.827)	—
Crank web to web width	59.9 – 60.1 (2.36 – 2.37)	—
Crankshaft runout	—	0.080 (0.0031)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pressure (at 60 °C, 140 °F)	30 – 70 kPa (0.3 – 0.7 kgf/cm², 4.3 – 10.0 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		—
Drive plate thickness	No. 1	2.92 – 3.08 (0.115 – 0.121)	2.62 (0.103)
	No. 2	3.42 – 3.58 (0.135 – 0.141)	3.12 (0.123)
Drive plate claw width	No. 1 and 2	15.9 – 16.0 (0.626 – 0.630)	15.1 (0.59)
Driven plate distortion	—		0.10 (0.004)
Clutch spring free length	43.0 (1.69)		40.9 (1.61)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.238 (68/21)		—
Final reduction ratio		2.866 (43/15)		—
Gear ratios	Low	2.636 (29/11)		—
	2nd	1.687 (27/16)		—
	3rd	1.200 (24/20)		—
	4th	0.952 (20/21)		—
	Top	0.818 (18/22)		—
Shift fork to groove clearance		No. 1, 2 and 3	0.20 – 0.40 (0.008 – 0.016)	0.60 (0.024)
Shift fork groove width		No. 1, 2 and 3	4.25 – 4.35 (0.167 – 0.171)	—
Shift fork thickness		No. 1, 2 and 3	3.95 – 4.05 (0.156 – 0.159)	—
Drive chain		Type	DID520V	—
		Links	108 links	—
		20-pitch length	—	323.8 (12.75)
Drive chain slack (on side-stand)		10 – 20 (0.4 – 0.8)		—

INJECTOR + FUEL PUMP + FUEL PRESSURE REGULATOR

ITEM	SPECIFICATION	NOTE
Injector resistance	Approx. 10.5 Ω at 20 °C (68 °F)	
Fuel pump discharge amount	Approx. 33.3 ml (1.13 US oz) and more/10 sec.	
Fuel pressure regulator operating set pressure	Approx. 294 kPa (2.94 kgf/cm², 41.8 psi)	

FI SENSORS

ITEM	SPECIFICATION		NOTE
CKP sensor resistance	420 – 620 Ω		Bl – G
CKP sensor peak voltage	2.0 V and more (When cranking)		⊕: G – ⊖: Bl
IAP sensor input voltage	4.5 – 5.5 V		
IAP sensor output voltage	1.5 – 3.5 V at idle speed		⊕: W/Bl – ⊖: B/Br
TP sensor input voltage	4.5 – 5.5 V		
TP sensor output voltage	Closed	Approx. 0.6 V	⊕: V – ⊖: B/Br
	Opened	Approx. 3.8 V	
ET sensor input voltage	4.5 – 5.5 V		
ET sensor output voltage	0.1 – 4.6 V		⊕: B/Bl – ⊖: Ground
ET sensor resistance	1.95 – 4.18 kΩ at 20 – 40 °C (68 – 104 °F)		
IAT sensor input voltage	4.5 – 5.5 V		
IAT sensor output voltage	0.15 – 4.84 V		⊕: Y/R – ⊖: Ground
IAT sensor resistance	Approx. 2.45 kΩ at 20 °C (68 °F)		
TO sensor resistance	16.5 – 22.3 kΩ		
TO sensor voltage	Normal	0.4 – 1.4 V	⊕: Br – ⊖: B/Br
	Leaning 65°	3.7 – 4.4 V	
Fuel injector voltage	Battery voltage		
Ignition coil primary peak voltage	200 V and more (When cranking)		⊕: B – ⊖: Ground
STP sensor input voltage	4.5 – 5.5 V		
STP sensor output voltage	Closed	Approx. 0.5 V	⊕: Y – ⊖: B
	Opened	Approx. 3.9 V	
STV actuator resistance	Approx. 6.5 Ω		
PAIR control solenoid valve resistance	Approx. 22 Ω at 20 °C (68 °F)		
HO2 sensor output voltage	0.3 V and less at idle speed		⊕: B – ⊖: Gr
	0.6 V and more at 5 000 r/min		
HO2 sensor resistance	Approx. 8.0 Ω at 23 °C (73 °F)		W – W

THROTTLE BODY

ITEM	SPECIFICATION
Bore size	32 mm
I.D. No.	26GA
Fast idle r/min	1 800 – 2 300 r/min
Idle r/min	1 300 ± 100 r/min
Throttle cable play	2.0 – 4.0 mm (0.08 – 0.16 in)

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: DR8EA DENSO: X24ESR-U	
		Gap	0.6 – 0.7 (0.024 – 0.028)	
Spark performance		Over 8 (0.3) at 1 atm.		
CKP sensor resistance		420 – 620 Ω		Bl – G
CKP sensor peak voltage		2.0 V and more (When cranking)		⊕: G – ⊖: Bl
Ignition coil resistance		Primary	2.9 – 4.1 Ω	⊕ Terminal – ⊖ Terminal
		Secondary	24.0 – 36.2 kΩ	⊕ Terminal – Plug cap
Ignition coil primary peak voltage		200 V and more		⊕: B – ⊖: Ground
Generator coil resistance		0.1 – 1.5 Ω		B – B
Generator no-load voltage (When engine is cold)		60 V (AC) and more at 5 000 r/min		
Starter motor brush length		Standard	12 (0.47)	
		Limit	8.5 (0.33)	
Regulated voltage		13.5 – 15.5 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	Headlight	10 A		
	Horn	10 A		
	Ignition	10 A		
	Signal	10 A		
	ECM	10 A		
	Main	30 A		

WATTAGE

Unit: W

ITEM		STANDARD/SPECIFICATION
Headlight	HI	60
	LO	55
Brake light/Taillight		21/5
Turn signal light		21
Speedometer light		1.7
High beam indicator light		1.7
Neutral indicator light		3.4
Turn signal indicator light		1.7
Fuel injection indicator light		3
Fuel level indicator light		3.4

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal free travel	20 – 30 (0.8 – 1.2)		—
Rear brake pedal height	20 – 30 (0.8 – 1.2)		—
Brake disc thickness	Front	4.8 – 5.2 (0.19 – 0.20)	4.5 (0.18)
Brake disc runout	Front	—	0.30 (0.012)
Brake drum I.D.	Rear	—	130.7 (5.15)
Brake master cylinder bore	Front	12.700 – 12.743 (0.5000 – 0.5017)	—
Brake master cylinder piston diam.	Front	12.657 – 12.684 (0.4983 – 0.4994)	—
Brake caliper cylinder bore	Front	30.230 – 30.306 (1.1902 – 1.1931)	—
Brake caliper piston diam.	Front	30.150 – 30.200 (1.1870 – 1.1890)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel rim size	Front	18 × 1.85	—
	Rear	18 M/C × MT 2.50	—
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)

TIRE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cold inflation tire pressure (Solo riding)	Front	175 kPa (1.75 kgf/cm², 25 psi)	—
	Rear	200 kPa (2.00 kgf/cm², 29 psi)	—
Cold inflation tire pressure (Dual riding)	Front	175 kPa (1.75 kgf/cm², 25 psi)	—
	Rear	225 kPa (2.25 kgf/cm², 33 psi)	—
Tire size	Front	90/90-18 M/C 51S	—
	Rear	110/90-18 M/C 61S	—
Tire type	Front	CHENG SHIN C-6009	—
	Rear	CHENG SHIN C-822	—
Tire tread depth (Recommended depth)	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT
Front fork stroke	120 (4.7)	—
Front fork spring free length	345.2 (13.59)	338 (13.3)
Front fork oil level (without spring, outer tube fully compressed)	72 (2.8)	—
Front fork oil type	SUZUKI FORK OIL SS-08 or an equivalent fork oil	—
Front fork oil capacity (each leg)	411 ml (13.9 US oz)	—
Front fork inner tube O.D.	37 (1.5)	—
Rear shock absorber spring adjuster	3/5 position	—
Rear wheel travel	95 (3.7)	—
Swingarm pivot shaft runout	—	0.6 (0.02)

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane (R/2 + M/2). 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	12.0 L (3.2 US gal)	
	Fuel level indicator light lighting	Approx. 2.5 L (0.7 US gal)	
Engine oil type	SAE 10W-40, API SF/SG or SH/SJ with JASO MA		
Engine oil capacity	Change	1 400 ml (1.5 US qt)	
	Filter change	1 500 ml (1.6 US qt)	
	Overhaul	1 900 ml (2.0 US qt)	

TIGHTENING TORQUE
ENGINE

ITEM		N·m	kgf-m	lbf-ft
Engine mounting bolt		41	4.1	29.5
Engine mounting upper plate nut		40	4.0	29.0
Engine mounting lower plate nut		28	2.8	20.0
Exhaust pipe bolt		23	2.3	16.5
Muffler mounting bolt	Front	23	2.3	16.5
	Rear	50	5.0	36.0
Muffler connecting bolt		23	2.3	16.5
Exhaust pipe cover screw		4	0.4	3.0
Cylinder head cover bolt/nut		11	1.1	8.0
Cylinder head nut		37	3.7	27.0
Camshaft sprocket bolt		10	1.0	7.0
Primary drive gear nut		100	10.0	72.5
Crank balancer bolt		40	4.0	29.0
Cam chain tension adjuster bolt		10	1.0	7.0
Cam chain tensioner bolt		10	1.0	7.0
Generator rotor nut		160	16.0	115.5
Starter clutch bolt		26	2.6	19.0
TDC plug		21	2.1	15.0
Generator cover plug		15	1.5	11.0
Valve clearance adjusting screw lock-nut		15	1.5	11.0
Oil gallery plug		23	2.3	16.5
Oil drain plug		23	2.3	16.5
Engine sprocket nut		90	9.0	65.0
Clutch sleeve hub nut		55	5.5	40.0
Clutch spring set bolt		10	1.0	7.0
Clutch cover bolt		11	1.1	8.0
Crankcase bolt		11	1.1	8.0
Generator cover bolt	(M6)	11	1.1	8.0
	(M5)	6	0.6	4.5
PAIR pipe bolt/nut		10	1.0	7.0
Oil pump mounting bolt		10	1.0	7.0
Spark plug		18	1.8	13.0
Gearshift cam stopper plug		23	2.3	16.5
Gearshift arm stopper		19	1.9	13.5
Gearshift lever mounting bolt		10	1.0	7.0

FI SYSTEM AND INTAKE AIR SYSTEM

ITEM	N·m	kgf-m	lbf-ft
Air cleaner box mounting bolt	10	1.0	7.0
Air cleaner box lower mounting bolt	6	0.6	4.5
Fuel pump mounting bolt	10	1.0	7.0
TP sensor mounting screw	3.5	0.35	2.5
STP sensor mounting screw	3.5	0.35	2.5
ET sensor	18	1.8	13.0
HO2 sensor	25	2.5	18.0

CHASSIS

ITEM		N·m	kgf-m	lbf-ft
Steering stem head bolt		65	6.5	47.0
Steering stem nut		45 N·m (4.5 kgf-m, 32.5 lbf-ft) then turn back 1/4 – 1/2		
Front fork cap bolt		23	2.3	16.5
Front fork upper clamp bolt		23	2.3	16.5
Front fork lower clamp bolt		33	3.3	24.0
Front axle		65	6.5	47.0
Front axle pinch bolt		23	2.3	16.5
Handlebar clamp bolt		16	1.6	11.5
Front brake hose union bolt		23	2.3	16.5
Front brake caliper air bleeder valve		7.5	0.75	5.5
Front brake caliper mounting bolt		39	3.9	28.0
Front brake disc bolt		23	2.3	16.5
Front brake master cylinder holder bolt		10	1.0	7.0
Front brake lever pivot bolt		6	0.6	4.5
Front brake lever pivot bolt lock-nut		6	0.6	4.5
Rear brake cam lever nut		10	1.0	7.0
Clutch lever holder bolt		10	1.0	7.0
Rear sprocket nut		60	6.0	43.5
Rear axle nut		65	6.5	47.0
Swingarm pivot nut		65	6.5	47.0
Torque link nut (Front & Rear)		16	1.6	11.5
Damper rod bolt		20	2.0	14.5
Rear shock absorber nut (Upper and Lower)		29	2.9	21.0
Front footrest bolt		39	3.9	28.0
Side-stand nut		55	5.5	40.0
Side-stand bolt		50	5.0	36.0
Side-stand switch mounting bolt		8	0.8	6.0
Seat rail bolt	(M8)	26	2.6	19.0
	(M12)	85	8.5	61.5
Spoke nipple		3	0.3	2.0
Regulator/rectifier mounting bolt		10	1.0	7.0
Turn signal light mounting nut (Front & Rear)		13	1.3	9.5
Rear turn signal bracket mounting bolt		15	1.5	11.0