Features & Specifications
2018 QuadSport Z90

LT-Z90L8

GY8: Champion Yellow No. 2 / Solid Black

New Features

- New, competition-inspired Solid Black and Championship Yellow color scheme.
- Seat has new black cover that complements the ATV's graphics package.

Key Features

- Child-size (Y-12) controls for easy operation.
- QuadSport Z90 is designed for adult-supervised riders age 12 and older - includes many features that make learning to ride a safe and fun experience.
- A keyed ignition switch lets grown-ups decide when the action begins and ends.
- Simple screw-type throttle limiter allows adult supervisors to limit the maximum power delivery to suit the rider's ability.
- Speed-limiter collar in the automatic clutch limits top speed to 15 MPH. Can be removed to increase top speed as the rider gains ability.
- Easy electric starting system plus standard backup recoil starter.
- Smooth-running CVT automatic transmission provides easy operation and allows the rider to focus on riding instead of shifting.

Engine Features

- Compact 90cc 4-stroke, single-cylinder, air-cooled engine has been designed for durability and low maintenance.
- Suzuki Composite Electrochemical Material (SCEM) cylinder, derived from Suzuki's high-performance, high-mileage GSX-R sportbikes, provides durability, weight reduction and superior heat dissipation.
- Smooth running, multi-plate cam chain lets the engine operate quietly. Easy-access oil filter and oil strainer cap reduces service time.
- Clean-burning four-stroke engine easily achieves Environmental Protection Act (EPA) emissions regulations.
- Also meets California Air Resources Board (CARB) emissions standards for red-sticker, off-road registration.
- Spark-arrester equipped muffler is environmentally friendly, yet has a pleasant exhaust note.
- Large 1.6-gallon (6.0 L) fuel tank for long operating range combined with vacuum fuel petcock that automatically stops fuel flow when the engine's not running.

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Chassis Features

- Single A-arm front suspension with twin independent shock absorbers and single-shock rear suspension provide long wheel travel for a smooth, comfortable ride.
- Rear axle shaft has double oil seals for long-life performance and reliability.
- Headlamp style front piece is detachable to achieve the sporty look of the QuadSport Z400.
- Large diameter semi-sealed front drum brakes and single fully sealed rear drum brake provide strong braking performance.
- Modern styling with full floorboards and a big Quad look, plus black and yellow bodywork with co-ordinated graphics.
- One-piece 8-inch wheels with tubeless tires provide a smooth comfortable ride.
- Strong, high-rigidity steel frame is sturdy and compact.
- Low seat height of just 25.6 inches makes for easy mounting and confidence-inspiring operation.
- Suzuki T-shaped seat similar to the QuadSport Z400 for smooth weight transition and a comfortable ride, and is easy to remove to simplify maintenance.

Additional Features

- 12-month limited warranty is double the length of most other youth ATVs.
- A variety of Genuine Suzuki Accessories for QuadSport owners are available including a large selection of Suzuki logo apparel.
- Minimum Age: 12 Years Old
- For more details, please visit www.suzukicycles.com.

Specifications LT-Z90L8
P-03: USA, P-33: California

DIMENSIONS AND CURB MASS

Overall length	1 505 mm (59.3 in)
Overall width	875 mm (34.4 in)
Overall height	915 mm (36.0 in)
Wheelbase	1 005 mm (39.6 in)
Ground clearance	150 mm (5.9 in)
Seat height	650 mm (25.6 in)
Front track	700 mm (27.6 in)
Rear track	700 mm (27.6 in)
Curb mass	127 kg (280 lbs)

ENGINE

Type	4-stroke, air-cooled
Number of cylinders	1
Bore	45.5 mm (1.791 in)
Stroke	55.2 mm (2.173 in)
Displacement	90 cm^3 (5.5 cu. in)
Corrected compression ratio	9.5 : 1
Carburetor	MIKUNI VM16, single
Air cleaner	Polyurethane foam element
Starter system	Electric and recoil
Idle speed	1 800 ± 100 r/min

DRIVE TRAIN

Clutch	Dry shoe, automatic, centrifugal type
Gearshift pattern	Automatic
Primary reduction ratio (Automatic drive)	2.645 – 1.621 (Variable change)
Secondary reduction ratio	8.294 (45/17 × 47/15)
Final reduction ratio	2.181 (24/11)
Drive chain	RK530, 60 links

CHASSIS

Front suspension	Independent, swing axle, coil spring, oil damped
Rear suspension	Swingarm type, coil spring, oil damped
Front wheel travel	62 mm (2.4 in)
Rear wheel travel	61 mm (2.4 in)
Caster	3 °
Trail	11 mm (0.43 in)
Toe-in	4.5 mm (0.18 in)
Camber	0.6 °
Steering angle	37.5 ° (right & left)
Turning radius	2.5 m (8.2 ft)
Front brake	Drum brake
Rear brake	Drum brake
Front tire	AT19 × 7-8☆, tubeless
Rear tire	AT19 × 7-8☆, tubeless

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ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	10 ° B.T.D.C. at 1 800 r/min
Spark plug	NGK CR6HSA or DENSO U20FSR-U
Battery	12 V 21.6 kC (6 Ah) /10 HR
Fuse	10 A

CAPACITIES

Fuel tank	6.0 L (1.6/1.3 US/Imp gal)
Engine oil, oil change	950 ml (1.0/0.8 US/Imp qt)
with filter change	1 050 ml (1.1/0.9 US/Imp qt)
overhaul	1 100 ml (1.2/1.0 US/Imp qt)
Transmission oil, oil change	90 ml (3.0/3.2 US/Imp oz)
overhaul	100 ml (3.4/3.5 US/Imp oz)

VALVE + VALVE GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	22.5 (0.89)	—
	EX.	19 (0.75)	—
Valve clearance (when cold)	IN.	0.05 – 0.10 (0.002 – 0.004)	—
	EX.	0.10 – 0.15 (0.004 – 0.006)	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037 (0.0004 – 0.0015)	—
	EX.	0.030 – 0.057 (0.0018 – 0.0022)	—
Valve guide I.D.	IN. & EX.	5.500 – 5.512 (0.2165 – 0.2170)	—
Valve stem O.D.	IN.	4.975 – 4.990 (0.1958 – 0.1964)	—
	EX.	4.955 – 4.970 (0.1950 – 0.1956)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve stem end length	IN. & EX.	—	3.0 (0.12)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve seat width	IN. & EX.	—	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length	IN. & EX.	—	32.8 (1.29)
Valve spring tension	IN. & EX.	110 – 126 N (11.0 – 12.6 kgf, 79.5 – 91.1 lbs) at length 26.8 mm (1.05 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	27.92 – 27.97 (1.099 – 1.101)	27.62 (1.087)
	EX.	27.80 – 27.85 (1.094 – 1.096)	27.50 (1.082)
Rocker arm I.D.	IN. & EX.	10.003 – 10.018 (0.393 – 0.394)	—
Rocker arm shaft O.D.	IN. & EX.	9.981 – 9.990 (0.3929 – 0.3933)	—
Cylinder head distortion	—		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Compression pressure	1 500 kPa (15 kgf/cm², 213 psi)		1 300 kPa (13 kgf/cm², 185 psi)
Piston-to-cylinder clearance	0.020 – 0.030 (0.0008 – 0.0012)		0.120 (0.0047)
Cylinder bore	45.500 – 45.515 (1.7913 – 1.7919)		Nicks or Scratches
Piston diam.	45.490 – 45.475 (1.7909 – 1.7903) Measure at 10 mm (0.4 in) from the skirt end.		45.380 (1.7860)
Cylinder distortion	—		0.05 (0.002)
Piston ring free end gap	1st	Approx. 5.5 (0.22)	—
	2nd	Approx. 5.3 (0.21)	—
Piston ring end gap	1st	0.10 – 0.25 (0.003 – 0.009)	0.80 (0.031)
	2nd	0.10 – 0.25 (0.003 – 0.009)	0.80 (0.031)
Piston ring to groove clearance	1st	—	0.180 (0.0071)
	2nd	—	0.150 (0.0059)

ITEM	STANDARD		LIMIT
Piston ring groove width	1st	1.01 – 1.03 (0.0397 – 0.0405)	—
	2nd	1.04 – 1.03 (0.0397 – 0.0405)	—
	Oil	2.01 – 2.03 (0.0791 – 0.0799)	—
Piston ring thickness	1st	0.97 – 0.99 (0.0382 – 0.0390)	—
	2nd	0.97 – 0.99 (0.0382 – 0.0390)	—
Piston pin bore I.D.	14.002 – 14.008 (0.5512 – 0.5514)		14.030 (0.5523)
Piston pin O.D.	13.986 – 14.000 (0.5506 – 0.5511)		13.980 (0.5503)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.006 – 14.024 (0.5514 – 0.5521)	14.040 (0.5527)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10 – 0.45 (0.006 – 0.019)	1.0 (0.04)
Conrod big end width	16.95 – 17.00 (0.67 – 0.669)	—
Crank web to web width	49.0 ± 1 (1.9291 ± 0.004)	—
Crankshaft runout	—	0.08 (0.003)

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch housing I.D.	110.00 – 110.15 (4.331 – 4.337)	110.50 (4.350)
Clutch shoe thickness	4.0 (0.16)	2.5
Clutch engagement	2 800 – 3 400 r/min.	—
Clutch lock-up	5 400 – 6 000 r/min.	—

REDUCTION GEAR + DRIVE BELT + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM	STANDARD		LIMIT
Reduction ratio	Variable change (2.645 – 1.621)		—
Reduction gear ratio	8.294 (47/17 × 47/15)		—
Final reduction ratio	2.181 (24/11)		—
Drive belt width	19.9 (0.78)		18.9 (0.74)
Movable driven face spring free length	105.0 (4.13)		99.8 (3.92)
Drive chain	Type	RK 530	—
	Links	60	—
	20-pitch length	—	319.4 (12.57)
Drive chain slack	15 – 25 (0.6 – 1.0)		—

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI VM16H
Bore size		16 mm
I.D.No.		08H0
Idle r/min		1 800 ± 100 r/min.
Float height		16 ± 1.0 mm (0.6 ± 0.04 in)
Main jet	(M.J.)	#80
Jet needle	(J.N.)	4LA43-1
Needle jet	(N.J)	E-1M
Pilot jet	(P.J)	#17.5
Air screw	(A.S.)	PRE-SET (1, ¾)
Throttle cable play		3 – 5 mm (0.12 – 0.20 in)

ELECTRICAL

Unit: mm (in)

ITEM		STANDARD/SPECIFICATION		LIMIT	NOTE
Spark plug		Type	NGK: CR6HSA DENSO: U20FSR-U	—	
		Gap	0.7 – 0.8 (0.028 – 0.031)	—	
Spark performance		Over 8 (0.3) at 1 atm.		—	
Ignition coil resistance		Primary	0.1 – 0.7 Ω	—	Terminal – Terminal
		Secondary	14 – 20 kΩ	—	Plug cap – Terminal
Ignition coil primary peak voltage		150 V and more		—	⊕: Ground ⊖: B
CKP sensor peak voltage		1.5 V and more		—	⊕: Br ⊖: Ground
Generator coil resistance		Charging	0.5 – 2.0 Ω	—	W/R – Ground
		CKP sensor	150 – 230 Ω	—	Br – Ground
Generator no-load voltage (when engine is cold)		20 V (AC) and more at 2 800 r/min.		—	
Generator output		70 W at 5 000 r/min.		—	
Regulated voltage		13.5 – 15.2 V		—	
Starter relay resistance		3 – 6 Ω		—	
Battery	Type designation	YTX7A-BS		—	
	Capacity	12 V 21.6 kC (6 Ah)/10 HR		—	
Fuse size	Main	10 A		—	
Starter motor brush length		7.0 (0.27)		5.0 (0.19)	

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Front brake lever play	4 – 6 (0.16 – 0.24)		—
Rear brake lever play	3 – 5 (0.12 – 0.26)		—
Brake drum I.D.	Front	—	110.7 (4.35)
	Rear	—	130.7 (5.14)
Rear axle runout	Rear	—	6.0 (0.23)
Wheel rim size	Front & Rear	AT19 × 7 – 8 ☆	—
Toe-in (with 63 kg)	4.5 ± 3 (0.17 ± 0.1)		—
Turning radius	2.5 m (8.2 ft)		—
Camber	+0.6		—
Caster	3°		—
Trail	11 (0.4)		—
Steering angle	37.5° (Right & Left)		—

TIRE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cold inflation tire pressure (Solo riding)	Front	22.5 kPa (0.225 kgf/cm², 3.3 psi)	—
	Rear	20 kPa (0.20 kgf/cm², 2.9 psi)	—
Tire size	Front	AT 19 × 7-8 ☆, tubeless	—
	Rear	AT 19 × 7-8 ☆, tubeless	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT
Front wheel travel	62 (2.4)	—
Rear wheel travel	61 (2.4)	—
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) 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	6.0 L (0.7/0.6 US/Imp gal)		
Engine oil type	SAE 10W-40, API SF/SG or SH/SJ with JASO MA		
Engine oil capacity	Change	950 ml (1.6/1.3 US/Imp qt)	
	Filter charge	1 050 ml (2.21/1.84 US/Imp qt)	
	Overhaul	1 100 ml (1.2/1.0 US/Imp qt)	
Final reduction gear box oil type	SAE 10W-40, API SF/SG or SH/SJ with JASO MA		
Final reduction gear box oil capacity	Change	90 ml (3.0/3.2 US/Imp oz)	
	Overhaul	100 ml (3.4/3.5 US/Imp oz)	

TIGHTENING TORQUE
ENGINE

ITEM		N·m	kgf-m	lb-ft
Cylinder head cover bolt	Initial	10	1.0	7.0
	Final	14	1.4	10.0
Cylinder head nut	M12	25	2.5	18.0
	M10	10	1.0	7.0
Valve clearance adjuster locknut		10	1.0	7.0
Cam sprocket bolt		11	1.1	8
Cam chain guide mounting bolt		10	1.0	7.0
Cam shaft retainer screw		5.5	0.55	4.0
Cam chain tension adjuster mounting bolt		10	1.0	7.0
Generator rotor nut		80	8.0	58.0
Limit clutch nut		75	7.5	54
Clutch shoe nut		60	6.0	43.5
Fixed drive face nut		50	5.0	36.0
Starter clutch bolt		10	1.0	7.0
Generator coil mounting bolt		10	1.0	7.0
CKP sensor mounting bolt		6	0.6	4.5
Crankcase bolt		10	1.0	7.0
Generator rotor cover bolt		10	1.0	7.0
Generator cover cap		15	1.5	11.0
Valve timing inspection plug		17.5	1.75	12.5
Crank case cover bolt		10	1.0	7.0
Engine oil drain plug		17.5	1.75	12.5
Final reduction gear box cover bolt		10	1.0	7.0
Final reduction gear box drain		10	1.0	7.0
Engine mounting nut	(Front)	100	10	72.5
	(under and rear)	60	6.0	43.5
Engine mounting upper bracket		35	3.5	25.5
Muffler mounting bolt		23	2.3	16.5
Muffler clamp bolt		12	1.2	8.5
Exhaust pipe nut		23	2.3	16.5
Recoil starter friction plate bolt		5	0.5	3.5
Spark plug		11	1.1	8.0
Carburetor mounting bolt		6	0.6	4.5
Intake pipe bolt		6	0.6	4.5
Main oil gallery plug		12	1.2	8.5
Starter motor lead wire mounting bolt		4	0.4	3.0
Starter relay lead wire mounting bolts		4.5	0.45	3.0
Rear axle housing bolt		60	6.0	43.5

FUEL

ITEM	N·m	kgf-m	lb-ft
Fuel valve bolt	4.5	0.45	3.0

CHASSIS

ITEM		N·m	kgf-m	lb-ft
Front suspension arm pivot nut		65	6.5	47.0
Steering knuckle arm nut		60	6.0	43.5
Tie-rod end nut		50	5.0	36.0
Tie-rod locknut		29	2.9	21.0
Steering shaft lower nut		35	3.5	25.5
Steering shaft holder bolt		23	2.3	17.0
Handlebar clamp bolt		25	2.5	18.0
Front shock absorber bolt	(upper and lower)	50	5.0	36.0
Front hub nut		65	6.5	47.0
Wheel set nut (front and rear)		55	5.5	40.0
Front brake cable equalizer bolt		8	0.8	6.0
Front brake cam lever nut		8	0.8	5.8
Swingarm pivot nut		102	10.2	74.0
Rear shock absorber bolt	(upper)	29	2.9	21.0
	(lower)	94	9.4	68.0
Rear hub nut		75	7.5	54.0
Rear brake cam lever nut		8	0.8	6.0
Rear axle housing set bolt		110	11.0	79.0
Rear sprocket nut		28	2.8	20.0
Footrest mounting bolt		55	5.5	40.0
Rear axle nut		180	18.0	130.0