

# SERVICE DATA

Model: GSR600AK9 E-19, 24  
GSR600UAK9 E-19

Date: December 4, 2008

## 4 STROKE

### VALVE + VALVE GUIDE

Unit: mm

ITEM	STANDARD		LIMIT
Valve diam.	IN.	27.2	—
	EX.	22.0	—
Tappet clearance (when cold)	IN.	0.10 – 0.20	—
	EX.	0.20 – 0.30	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037	—
	EX.	0.030 – 0.057	—
Valve guide I.D.	IN. & EX.	4.000 – 4.012	—
Valve stem O.D.	IN.	3.975 – 3.990	—
	EX.	3.955 – 3.970	—
Valve stem deflection	IN. & EX.	—	0.35
Valve stem runout	IN. & EX.	—	0.05
Valve head thickness	IN. & EX.	—	0.5
Valve seat width	IN. & EX.	0.9 – 1.1	—
Valve head radial runout	IN. & EX.	—	0.03
Valve spring free length	IN.	—	36.2
	EX.	—	36.0
Valve spring tension	IN.	155 – 179 N (15.8 – 18.3 kgf) at length 32.55 mm	—
	EX.	146 – 168 N (14.9 – 17.1 kgf) at length 32.55 mm	—

### CAMSHAFT + CYLINDER HEAD

Unit: mm

ITEM	STANDARD		LIMIT
Cam height	IN.	35.78 – 35.83	35.48
	EX.	34.98 – 35.03	34.68
Camshaft journal oil clearance	IN. & EX.	0.032 – 0.066	0.150
Camshaft journal holder I.D.	IN. & EX.	24.012 – 24.025	—
Camshaft journal O.D.	IN. & EX.	23.959 – 23.980	—
Camshaft runout	—		0.10
Cam chain pin (at arrow "3")	12th pin		—
Cylinder head distortion	—		0.20

**CYLINDER + PISTON + PISTON RING**

Unit: mm

ITEM	STANDARD			LIMIT
Compression pressure	1 100 – 1 500 kPa (11 – 15 kgf/cm <sup>2</sup> )			900 kPa (9 kgf/cm <sup>2</sup> )
Compression pressure difference	—			200 kPa (2 kgf/cm <sup>2</sup> )
Piston to cylinder clearance	0.030 – 0.040			0.120
Cylinder bore	67.000 – 67.015			Nicks or Scratches
Piston diam.	66.965 – 66.980 Measure at 15 mm from the skirt end.			66.845
Cylinder distortion	—			0.20
Piston ring free end gap	1st	T	Approx. 5.5	4.4
	2nd	2T	Approx. 7.5	6.0
Piston ring end gap	1st	T	0.06 – 0.21	0.50
	2nd	2T	0.06 – 0.21	0.50
Piston ring to groove clearance	1st	—		0.180
	2nd	—		0.150
Piston ring groove width	1st	1.01 – 1.03		—
	2nd	0.81 – 0.83		—
	Oil	1.51 – 1.53		—
Piston ring thickness	1st	0.97 – 0.99		—
	2nd	0.77 – 0.79		—
Piston pin bore I.D.	14.002 – 14.008			14.030
Piston pin O.D.	13.995 – 14.000			13.980

**CONROD + CRANKSHAFT**

Unit: mm

ITEM	STANDARD		LIMIT
Conrod small end I.D.	14.010 – 14.018		14.040
Conrod big end side clearance	0.10 – 0.20		0.30
Conrod big end width	19.95 – 20.00		—
Crank pin width	20.10 – 20.15		—
Conrod big end oil clearance	0.032 – 0.056		0.080
Crank pin O.D.	30.976 – 31.000		—
Crankshaft journal oil clearance	0.016 – 0.040		0.080
Crankshaft journal O.D.	29.976 – 30.000		—
Crankshaft thrust bearing thickness	RH	2.425 – 2.450	—
	LH	2.350 – 2.500	—
Crankshaft thrust clearance	0.055 – 0.110		—
Crankshaft runout	—		0.05

## OIL PUMP

ITEM	STANDARD	LIMIT
Oil pressure (at 60 °C)	200 – 500 kPa (2.0 – 5.0 kgf/cm <sup>2</sup> ) at 3 000 r/min	—

## CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Clutch lever play	10 – 15	—
Clutch release screw	1/4 turn out	—
Drive plate thickness	No. 1, 2 and 3 2.92 – 3.08	2.62
Drive plate claw width	No. 1, 2 and 3 13.70 – 13.80	12.90
Driven plate distortion	—	0.10
Clutch spring free length	55.11	52.4

## TRANSMISSION + DRIVE CHAIN

Unit: mm Except ratio

ITEM	STANDARD	LIMIT
Primary reduction ratio	1.926 (79/41)	—
Final reduction ratio	3.000 (48/16)	—
Gear ratios	Low	2.785 (39/14)
	2nd	2.000 (32/16)
	3rd	1.600 (32/20)
	4th	1.363 (30/22)
	5th	1.208 (29/24)
	Top	1.086 (25/23)
Shift fork-to-groove clearance	0.10 – 0.30	0.50
Shift fork groove width	5.0 – 5.1	—
Shift fork thickness	4.8 – 4.9	—
Drive chain	Type	RK525SMOZ7Y
	Links	114 links
	20-pitch length	—
Drive chain slack (on side-stand)	20 – 30	—
Gearshift lever height	35 – 45	—

## THERMOSTAT + RADIATOR + FAN + COOLANT

ITEM	STANDARD/SPECIFICATION		NOTE
Thermostat valve opening temperature	Approx. 82 °C		—
Thermostat valve lift	8 mm and over at 95 °C		—
ECT sensor resistance	20 °C	Approx. 2.45 kΩ	—
	50 °C	Approx. 0.811 kΩ	—
	80 °C	Approx. 0.318 kΩ	—
	110 °C	Approx. 0.142 kΩ	—
Radiator cap valve opening pressure	93 – 123 kPa (0.93 – 1.23 kgf/cm <sup>2</sup> )		—
Cooling fan operating temperature	OFF→ON	Approx. 105 °C	—
	ON→OFF	Approx. 100 °C	—
Engine coolant type	Use an antifreeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.		—
Engine coolant	Approx. 2 800 ml		—

## INJECTOR + FUEL PUMP + FUEL PRESSURE REGULATOR

ITEM	SPECIFICATION	NOTE
Injector resistance	Approx. 12 Ω at 20 °C	
Fuel discharge amount	167 ml and more/10 sec.	
Fuel pressure regulator operating set pressure	Approx. 300 kPa (3.0 kgf/cm <sup>2</sup> )	

## FI SENSORS + SECONDARY THROTTLE VALVE ACTUATOR

ITEM	SPECIFICATION		NOTE
CMP sensor resistance	0.9 – 1.7 k $\Omega$		
CMP sensor peak voltage	0.7 V and more		When cranking
CKP sensor resistance	142 – 194 $\Omega$		
CKP sensor peak voltage	0.5 V and more		When cranking
IAP sensor input voltage	4.5 – 5.5 V		
IAP sensor output voltage	Approx. 2.7 V at idle speed		
TP sensor input voltage	4.5 – 5.5 V		
TP sensor resistance	Closed	Approx. 1.1 k $\Omega$	
	Opened	Approx. 4.4 k $\Omega$	
TP sensor output voltage	Closed	Approx. 1.1 V	
	Opened	Approx. 4.4 V	
ECT sensor input voltage	4.5 – 5.5 V		
ECT sensor resistance	Approx. 2.45 k $\Omega$ at 20 °C		
IAT sensor input voltage	4.5 – 5.5 V		
IAT sensor resistance	Approx. 2.45 k $\Omega$ at 20 °C		
AP sensor input voltage	4.5 – 5.5 V		
AP sensor output voltage	Approx. 3.6 V at 760 mmHg (100 kPa)		
TO sensor resistance	16.5 – 22.3 k $\Omega$		
TO sensor voltage	Normal	0.4 – 1.4 V	
	Leaning	3.7 – 4.4 V	When leaning 65°
GP switch voltage	0.6 V and more		From 1st to Top
Injector voltage	Battery voltage		
Ignition coil primary peak voltage	80 V and more		When cranking
STP sensor input voltage	4.5 – 5.5 V		
STP sensor resistance	Closed	Approx. 0.6 k $\Omega$	
	Opened	Approx. 4.5 k $\Omega$	
STP sensor output voltage	Closed	Approx. 0.6 V	
	Opened	Approx. 4.5 V	
STV actuator resistance	Approx. 7 $\Omega$		
PAIR control solenoid valve resistance	20 – 24 $\Omega$ (at 20 – 30 °C)		
HO2 sensor output voltage	0.4 V and less at idle speed		
	0.6 V and more at 5 000 r/min		
HO2 sensor resistance	4 – 5 $\Omega$ at 23 °C		

## THROTTLE BODY

ITEM	SPECIFICATION
Bore size	38 mm
I.D. No.	44G1
Idle r/min.	1 350 ± 100 r/min.
Fast idle r/min.	1 500 – 2 000 r/min. When cold engine
Throttle cable play	2.0 – 4.0 mm

## ELECTRICAL

Unit: mm

ITEM		SPECIFICATION	NOTE
Firing order		1.2.4.3	
Spark plug	Type	NGK: CR9E DENSO: U27ESR-N	
	Gap	0.7 – 0.8	
Spark performance		Over 8 at 1 atm.	
CKP sensor resistance		142 – 194 Ω	
CKP sensor peak voltage		0.5 V and more	
Ignition coil resistance	Primary	1.1 – 1.9 Ω	Terminal – Terminal
	Secondary	6.4 – 9.6 kΩ	Plug cap – Terminal
Ignition coil primary peak voltage		80 V and more	
Generator coil resistance		0.2 – 0.9 Ω	
Generator no-load performance (When engine is cold)		65 V and more at 5 000 r/min.	
Starter motor brush length		10	6.5
Regulated voltage (charging output)		14.0 – 15.5 V at 5 000 r/min.	
Starter relay resistance		3 – 6 Ω	
GP switch voltage		0.6 V and more (From 1st to top without neutral)	
Battery	Type designation	FTX9-BS	
	Capacity	12 V 28.8 kC (8 Ah)/10 HR	
Fuse size	Headlight	HI	10 A
		LO	10 A
	Ignition	15 A	
	Signal	10 A	
	Fuel	10 A	
	Fan	15 A	
	Main	30 A	

**WATTAGE**

Unit: W

ITEM		STANDARD/SPECIFICATION
Headlight	HI	60
	LO	55
Position light		5 × 2
Brake light/Taillight		LED
Turn signal light		10 × 4
License plate light		5
Speedometer light		LED
Tachometer light		LED
Neutral indicator light		LED
High beam indicator light		LED
Turn signal indicator light		LED
Oil pressure/ Engine coolant temp. indicator light		LED
FI warning indicator light		LED
Immobilizer indicator light		LED
ABS indicator light		LED

**BRAKE + WHEEL**

Unit: mm

ITEM	STANDARD		LIMIT
Rear brake pedal height	45 – 55		—
Brake disc thickness	Front	4.8 – 5.2	4.5
	Rear	4.8 – 5.2	4.5
Brake disc runout	—		0.30
Master cylinder bore	Front	14.000 – 14.043	—
	Rear	12.700 – 12.743	—
Master cylinder piston diam	Front	13.957 – 13.984	—
	Rear	12.657 – 12.684	—
Brake caliper cylinder bore	Front	Leading	27.050 – 27.126
		Trailing	30.280 – 30.356
	Rear	38.180 – 38.256	
Brake caliper piston diam	Front	Leading	26.920 – 26.970
		Trailing	30.150 – 30.200
	Rear	38.098 – 38.148	
Brake fluid type	DOT 4		—
Wheel rim runout	Axial	—	2.0
	Radial	—	2.0
Wheel rim size	Front	17 M/C × MT 3.50	—
	Rear	17 M/C × MT 5.50	—
Wheel axle runout	Front	—	0.25
	Rear	—	0.25
Wheel speed sensor to sensor rotor clearance	Front & Rear	0.3 – 1.5	—

## TIRE

ITEM	STANDARD		LIMIT
Cold inflation tire pressure (Solo riding)	Front	250 kPa (2.50 kgf/cm <sup>2</sup> )	—
	Rear	250 kPa (2.50 kgf/cm <sup>2</sup> )	—
Cold inflation tire pressure (Dual riding)	Front	250 kPa (2.50 kgf/cm <sup>2</sup> )	—
	Rear	290 kPa (2.90 kgf/cm <sup>2</sup> )	—
Tire size	Front	120/70 ZR17 M/C (58 W)	—
	Rear	180/55 ZR17 M/C (73 W)	—
Tire type	Front	BRIDGESTONE: BT014F SN	—
	Rear	BRIDGESTONE: BT014R N	—
Tire tread depth (Recommended depth)	Front	—	1.6
	Rear	—	2.0

## SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT
Front fork stroke	130	—
Front fork spring free length	334.6	327
Front fork oil level (without spring, outer tube fully compressed)	110	—
Front fork oil type	SUZUKI FORK OIL G-10 or an equivalent fork oil	—
Front fork oil capacity (each leg)	512 ml	—
Front fork inner tube outside diam.	43	—
Front fork spring adjuster	3rd groove from top	—
Rear shock absorber spring pre-set length	201.4	—
Rear shock absorber spring adjuster	4th/7 positions	—
Rear shock absorber damping force adjuster	1 turn out from stiffest position	—
Rear wheel travel	134	—
Swingarm pivot shaft runout	—	0.3

## FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	16.5 L	
Engine oil type	SAE 10W-40, API SF/SG or SH/SJ with JASO MA	
Engine oil capacity	Change	3.2 L
	Filter change	3.6 L
	Overhaul	3.9 L