

TECHNICAL DATA

SI* METRIC INFORMATION GUIDE

BASE UNITS			
DESCRIPTION		UNIT	SYMBOL
length		meter	m
mass		kilogram	kg
force		newton	N
liquid		liter	L
temperature		Celsius	°C
pressure		kilopascal	kPa
torque		newton•meter	N•m
speed		kilometer per hour	km/h
PREFIXES			
PREFIX	SYMBOL	MEANING	VALUE
kilo	k	one thousand	1 000
centi	c	one hundredth	0.01
milli	m	one thousandth	0.001
micro	μ	one millionth	0.000001
CONVERSION FACTORS			
TO CONVERT		TO †	MULTIPLY BY
in		mm	25.4
in		cm	2.54
in ²		cm ²	6.45
in ³		cm ³	16.39
ft		m	0.3
oz		g	28.35
lb		kg	0.45
lbf		N	4.4
lbf•in		N•m	0.11
lbf•ft		N•m	1.36
lbf•ft		lbf•in	12
PSI (lbf/in ²)		kPa	6.89
imp. oz		U.S. oz	0.96
imp. oz		mL	28.41
imp. gal		U.S. gal	1.2
imp. gal		L	4.55
U.S. oz		mL	29.57
U.S. gal		L	3.79
MPH		km/h	1.61
Fahrenheit		Celsius	(°F - 32) ÷ 1.8
Celsius		Fahrenheit	(°C x 1.8) + 32

* The international system of units abbreviates SI in all languages.

† To obtain the inverse sequence, divide by the given factor. To convert "mm" to "in", divide by 25.4.

NOTE: Conversion factors are rounded off to 2 decimals for easier use.

Section 11 TECHNICAL DATA
Subsection 02 (ENGINE AND VEHICLE)

ENGINE AND VEHICLE

VEHICLE MODEL			7449
ENGINE	Engine Type		BOMBARDIER-ROTAX 654,4 Stroke, Double Overhead Camshaft, Bush Chain Drive, Liquid Cooled
	Starting System		Electric (start in any gear with clutch applied or on neutral)
	Number of Cylinder(s)		1
	Number of Valves		4 Bucket Tappet-Operated Valves
	Decompressor Type		Automatic
	Bore	Standard mm (in)	100 (3.94)
	Stroke	mm (in)	83 (3.27)
	Displacement	cm ³ (in ³)	652 (39.7)
	Compression Ratio		9.7: 1
	Calibration Engine Speed	100 RPM	13 + 1
	Intake Valve Opening		17° BTDC
	Intake Valve Closing		45° ABDC
	Exhaust Valve Opening		47° BBDC
	Exhaust Valve Closing		15° ATDC
	Valve Clearance When Engine Cold (maximum 35°C/95°F)	Exhaust/Intake mm (in)	0.1 to 0.15 (0.004 to 0.006)
	Valve Length	Intake mm (in)	90.91 and 90.76 (3.579 and 3.573)
		Exhaust mm (in)	90.65 and 90.05 (3.568 and 3.545)
	Plate Diameter	Intake mm (in)	36 (1.42)
		Exhaust mm (in)	31 (1.22)
	Shaft Diameter	Intake mm (in)	5.95 (0.24)
		Exhaust mm (in)	5.935 (0.23)
	Valve Seat Angle	Intake mm (in)	45°
		Exhaust mm (in)	30°
	Piston Ring End Gap	New Minimum mm (in)	0.2 (0.008)
		New Maximum mm (in)	0.4 (0.016)
		Wear Limit mm (in)	1 (0.04)
	Ring/Piston Groove Clearance	New Minimum mm (in)	0.03 (0.0012)
		New Maximum mm (in)	0.065 (0.0026)
		Wear Limit mm (in)	0.15 (0.006)
	Piston/Cylinder Clearance	Wear Limit mm (in)	0.09 (0.004)
	Cylinder	New Minimum mm (in)	100 (3.9371)
		New Maximum mm (in)	100.012 (3.9376)
		Wear Limit mm (in)	100.03 (3.9382)
	Crankshaft Balance Factor		% 47 ± 3
	Crankshaft Deflection		mm (in) 0.1 (0.004)
	Connecting Rod Big End Axial Play	Wear Limit mm (in)	0.8 (0.794)
	Connecting Rod Small End I.D.	Wear Limit mm (in)	22.04 (0.868)
	Connecting Rod/Piston Pin Clearance	Wear Limit mm (in)	0.06 (0.002)
	Camshaft (intake and exhaust)	Bearing Point Ø mm (in)	21.95 (0.864)
		Cam Height mm (in)	39.7 (1.56)
	Timing Chain (gap from sealing face to piston of chain tensioner)		mm (in) 9.5 (0.374)
	Lubrication		Dry Sump Lubrication by Oil Pump Replaceable Oil Filter
	Oil Filter		Main-Flow Type
	Air Filter Type		Cleanable Synthetic Panelette/Foam
	Exhaust System	Type	Bombardier, Stainless Header Pipe Painted Steel Muffler
		Spark Arrester	USFS Approved

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	VEHICLE MODEL			7449
ELECTRICAL	Magneto/Generator			280 W @ 6000 RPM
	Ignition System Type			CDI (Capacitor Discharge Ignition)
	Spark Plug	Make and Type		NGK DR8EA
		Gap	mm (in)	0.65 (.026)
	Trigger Coil			Ω 190 - 300
	Battery Charging Coil			Ω 0.2 @ 0.5
	Ignition Coil	Primary		Ω 0.2 to 0.5 @ 20°C (68°F)
		Secondary		KΩ 6 @ 13
	Engine RPM Limiter			7700 (any gear in forward)
	Battery	Type		Dry Battery Type
		Voltage		12 Volts
		Nominal Rating		13 A•h
		Power Starter Output		0.9 KW
	Head Light			60/55 W, H4
	Taillight and Brake Light			8/27 W, 1157
Fuse	Fan		15 A	
	Main		25 A	
CARBURETION	Carburetor	Type		Mikuni Constant Depression Type with Manual Choke
		Model		BSR42
	Idle Engine Speed			RPM 1300 ± 100
	Main Jet			165
	Needle Jet			00
	Jet Needle			6BCY22-60-4
	Needle Valve and Seat			3.0 Hi Flow
	Pilot Jet			40
	Starter Jet No. 1 And No. 2			mm (in) 45 - Ø 1 (1.77 - Ø 0.039)
	Main Air Jet			120
	Pilot Air Jet No. 1			110
	Pilot Air Jet No. 2			mm (in) 1.3 (0.05)
	Clip Position Number			4
	Choke Plunger Position			2
	Adjustment	Preliminary Pilot Screw Turn		Position for Maximum Speed at Idle
		Idle Speed Preliminary Adjustment		At Least 1 Turn
		Float Level	± 0.5 mm	10
			± 0.020 in	0.394
	Fuel	Type		Super Unleaded Gasoline
Octane No.		91 (Ron + Mon)/2		
COOLING	Cooling Type			Liquid Cooled with Integrated Water Pump
	Radiator			Front Mounted
	Fan			Thermostatic
	Fan Thermostat	Opening Temperature		90°C (205°F)
		Closing Temperature		95°C (221°F)
	Engine Thermostat	Opening Temperature		85°C (185°F)
		Closing Temperature		75°C (167°F)
	Radiator Cap Opening Pressure			110 kPa (16 PSI)
TRANSMISSION	Transmission	Type		Integrated 5-Speed Constant Mesh Transmission
	Clutch			1 Multi-Disc
	Clutch Drum I.D.			mm (in) 145 (5.71)
	Friction Plate			mm (in) 3.45 (0.1358)
	Warpage (fall through a slot)			mm (in) 3.75 (0.1476)
	Wear Limit of the Whole Package			mm (in) 27.5 (1.0827)
	Steel Driven Plate			mm (in) 1.45 (0.0571)
	Warpage (fall through a slot)			mm (in) 1.63 (0.0642)
	Wear Limit of the Whole Package			mm (in) 11.5 (0.4528)
	Clutch Spring Minimum Rate			27.4 mm @ 210 N (1.0787 in @ 47 lbf)
	Clutch Spring Minimum Length			mm (in) 43 (1.69)

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	VEHICLE MODEL			7449
DRIVE TRAIN	Drive Chain			D.I.D. 530 VM
	Engine Pinion	Teeth		16
	Axle Sprocket	Teeth		40
	Rear Axle			Shaft Driven/Solid Axle
	Rear Axle Ratio			3.6: 1
STEERING/ CONTROL	Turning Radius			2.4 m (8 ft)
	Total Toe-Out (vehicle on ground)			2.6 ± 0.5 mm (0.102 ± 0.0197 in)
	Camber Angle			0°
	Tie-Rod Maximum Length Unengaged	± 5 mm		20
		± 0.197 in		0.787
	Tie-Rod Maximum Length	± 5 mm		451.5
± 0.197 in			17.775	
SUSPENSION	FRONT			
	Suspension Type			Independent Suspension — Double A-Arm
	Suspension Travel			305 mm (12 in)
	Shock Absorber	Qty		2
		Type		Oil
	Spring Free Length			363 mm (14.29 in)
	Spring Color Code			Black/White/Black
	Front Preload Adjustment			Seat of Spring Threaded
	REAR			
	Suspension Type			Rigid Swing Arm
	Suspension Travel			292 mm (11.5 in)
	Shock Absorber	Qty		1
		Type		Nitrogen
	Spring Free Length	Short		52.7 mm (2.07 in)
		Long		251.5 mm (9.90 in)
Spring Color Code	Short		Blue/Yellow/Black	
	Long		Blue/Red/Red	
Rear Preload Adjustment			Seat of Spring Threaded	
BRAKES	Front Brake	Qty		2
		Type		Nissin Hydraulic
	Rear Brake	Qty		1
		Type		Nissin Hydraulic
	Parking Device			RH Brake Lever Includes a Lock on Front Wheels
	Lining Material			Metallic
	Minimum Pad Thickness			1 mm (0.04 in) or Refer to the Mark on the Pad
	Minimum Brake Disk Thickness			3.5 mm (0.138 in)
	Maximum Brake Disk Warpage			0.5 mm (0.0197 in)
Caliper			Fixed	
TIRES AND WHEELS	TIRE			
	Pressure	Front	Recommended	34 kPa (5 PSI)
			Minimum	21 kPa (3 PSI)
		Rear	Recommended	34 kPa (5 PSI)
			Minimum	21 kPa (3 PSI)
	Minimum Tire Thread Depth			4 mm (0.16 in)
	Size	Front		533 x 178 x 254 mm (21 x 7 x 10 in)
		Rear		508 x 279 x 229 mm (20 x 11 x 9 in)
	WHEELS			
Size	Front		254 x 152 mm (10 x 6 in)	
	Rear		229 x 229 mm (9 x 9 in)	

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	VEHICLE MODEL		7449
DIMENSION	Overall Length		1956 mm (77 in)
	Overall Width	Front	1219.2 mm (48 in)
		Rear	1270 mm (50 in)
	Overall Height		1181 mm (46.5 in)
	Dry Weight		209 kg (460 lb)
	Total Vehicle Load Allowed		125 kg (275.5 lb)
	Wheel Base		1321 mm (52 in)
	Wheel Track	Front	1048 mm (41 in)
		Rear	994 mm (34 in)
	Front and Under Engine Ground Clearance		317.5 mm (12.5 in)
	Rear Rigid Axle Ground Clearance		121 mm (4.75 in)
CAPACITIES	LIQUID		
	Fuel Tank		12.5 L (3.3 U.S. gal)
	Fuel Tank Reserve		2.4 L (0.6 U.S. gal)
	Engine/Transmission Oil	Capacity	3 L (0.8 U.S. gal)
		Recommended	SAE 10W40, 4 Stroke Mineral Based Oil SH or SJ. Do Not Use Synthetic or Synthetic Blend Oil
	Hydraulics Brakes	Capacity	200 mL (6.8 U.S. oz)
		Recommended	Brake Fluid DOT 4, ONLY
	Cooling System	Capacity	1.75 L (0.58 U.S. gal)
		Recommended	Use Coolant Specially Designed for Aluminum Engine
	Ethylene-Glycol Concentration		60%
MATERIAL	Frame	Material	Steel
		Color	Grey
	Front Bumper	Material	Steel
		Color	Grey
	Front/Rear Fender	Material	High Density Polyethylene
		Color	Yellow
	Fuel Tank Cover	Material	High Density Polyethylene
		Color	Black
	Steering Cover	Material	Foam And Vinyl
		Color	Yellow
	Front Facia	Material	High Density Polyethylene
		Color	Yellow
	Air Box and Cover	Material	Low Density Polyethylene
		Color	Black
	Mudguard	Material	Synprene
		Color	Black
	Seat Cover	Material	Vinyl
		Color	Yellow/Black

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TORQUE	ENGINE		
	Engine Support	M8	26 N•m (19 lbf•ft)
		M10	64 N•m (47 lbf•ft)
		M14	135 N•m (100 lbf•ft)
	Spark Plug		22 N•m (16 lbf•ft)
	Magnet Nut		180 N•m (133 lbf•ft)
	Starter		10 N•m (89 lbf•in)
	Starter Red (+) Cable		4 N•m (35 lbf•in)
	COOLING		
	Radiator Mount Screw/Nut		10 N•m (89 lbf•in)
	Radiator Protector		2.5 N•m (22 lbf•in)
	Temperature Sensor		35 N•m (26 lbf•ft)
	Water Pump Cover		10 N•m (89 lbf•in)
	Fan Mount Screw/Nut		3 N•m (27 lbf•in)
	Temperature Sender		35 N•m (26 lbf•ft)
	Oil Pressure Switch		15 N•m (133 lbf•in)
	EXHAUST		
	Exhaust Nut		11 N•m (97 lbf•in)
	Heat Shield Screws		10 N•m (89 lbf•in)
	FUEL		
	Carburetor Mounting Clamp		0.6 N•m (5.4 lbf•in)
	DRIVE TRAIN		
	Front Wheel Hub Nut		135 N•m (100 lbf•ft) (MINIMUM)
	Rear Wheel Hub Nut		235 N•m (173 lbf•ft) (MINIMUM)
	WHEEL		
	Wheel Nuts		52.5 N•m (39 lbf•ft)
	STEERING/CONTROL		
	Upper/Lower A-Arm Lock Nut		60 N•m (48 lbf•ft)
	Tie Rod Ends		75 N•m (55 lbf•ft)
	Steering Arm (castellated nut)		75 N•m (55 lbf•ft)
	Steering Column Support Screws		24 N•m (17 lbf•ft)
	Handlebar Screws		24 N•m (17 lbf•ft)
	Flanged Bearing Bolts		10 N•m (89 lbf•in)
	SUSPENSION		
	Shock Absorber Bolt	Front	48 N•m (35 lbf•ft)
		Rear	85 N•m (63 lbf•ft)
	Front Upper Swing Arm		67 N•m (49 lbf•ft)
	Front Lower Swing Arm		67 N•m (49 lbf•ft)
	Rear Swing Arm LH First Nut		100 N•m (74 lbf•ft), Unscrew Nut a Quarter Turn
	Rear Swing Arm LH Nut		100 N•m (74 lbf•ft)
	BRAKE		
	Caliper Brake Screws		24 N•m (17 lbf•ft)
	Brake Disk Screws		34 N•m (25 lbf•ft)
	BODY/FRAME		
	Front Bumper		24 N•m (17 lbf•ft)
	Rear Extension Frame		48 N•m (35 lbf•ft)
	Footrest		10 N•m (89 lbf•in)
	Skid Plate		4 N•m (35 lbf•in)