

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 10 TECHNICAL DATA

Subsection 02 (ENGINES)

VEHICLE MODEL			GRAND TOURING SE	MACH Z STD	MACH Z TECH PLUS
ENGINE TYPE			809	809	809
	Number of Cylinders		3	3	3
	Bore	mm (in)	70.5 (2.776)	70.50 (2.776)	70.50 (2.776)
	Stroke	mm (in)	68.0 (2.677)	68.0 (2.677)	68.0 (2.677)
	Displacement	cm ³ (in ³)	796.3 (48.59)	796.3 (48.59)	796.3 (48.59)
	Compression Ratio (corrected)		6.8	6.8	6.8
	Maximum Power Engine Speed ①		± 100 RPM	8300	8300
	Piston Ring Type		1 st /2 nd	ST/R	ST/R
	Ring End Gap	New	mm (in)	0.2 (.008)	0.2 (.008)
		Wear Limit	mm (in)	1.0 (.039)	1.0 (.039)
	Ring/Piston Groove Clearance	New	mm (in)	0.03 (.0012)	0.03 (.0012)
		Wear Limit	mm (in)	0.2 (.0079)	0.2 (.0079)
	Piston/Cylinder Wall Clearance	New	± 0.016 mm (± .0006 in)	0.095 (.0037)	0.095 (.0037)
		Wear Limit	mm (in)	0.20 (.0079)	0.20 (.0079)
	Connecting Rod Big End Axial Play	New	mm (in)	0.39 (.0154)	0.39 (.0154)
		Wear Limit	mm (in)	1.2 (.0472)	1.2 (.0472)
	Maximum Crankshaft End-play ②		mm (in)	0.3 (.012)	0.3 (.012)
	Maximum Crankshaft Deflection at PTO		mm (in)	0.06 (.0024)	0.06 (.0024)
	Magnet Generator Output		W	360	290
	Ignition Type			CDI	CDI
	Spark Plug Make and Type			NGK BR8ES	NGK BR9ES
	Spark Plug Gap		mm (in)	0.45 (.018)	0.45 (.018)
	Ignition Timing BTDC ③		mm (in)	2.59 (.102)	1.94 (.076)
	Trigger Coil ④		Ω	190 – 300	190 – 300
	Generating Coil ④	Low Speed	Ω	N.A.	25 – 56
		High Speed	Ω	N.A.	3.5 – 8.1
	Lighting Coil ④		Ω	0.0 – 0.05	0.15 – 0.35
	High Tension Coil ④	Primary	Ω	0.2 – 0.5	0.2 – 0.5
		Secondary	kΩ	6 – 13	6 – 13
	Carburetor Type		PTO/CTR/MAG	TM 38 C321	TM 38 C317
	Main Jet		PTO/CTR/MAG	450/470/470	290
	Needle Jet			876 0-2	327 0-2
	Pilot Jet			15	50
	Needle Identification — clip position			8BCY01-42-4	8ADY1-41-3
	Slide Cut-Away			2.0	2.0
	Float Adjustment		± 1 mm (± .040 in)	21.0 (.83)	21.0 (.83)
	Air Screw Adjustment		± 1/16 Turn	Closed	4-1/2
	Idle Speed		± 200 RPM	2000	2000
	Gas Type/Pump Octane Number			Super Unleaded/91	Super Unleaded/91
	Gas/Oil Ratio			Injection	Injection
	Type			Liquid	Liquid
	Axial Fan Belt Adjustment	Deflection	mm (in)	N.A.	N.A.
		Force	kg (lbf)	N.A.	N.A.
	Thermostat Opening Temperature		°C (°F)	N.A.	N.A.
	Radiator Cap Opening Pressure		kPa (PSI)	N.A.	N.A.
	ENGINE COLD N·m (lb·ft)	Drive Pulley Retaining Screw		⑤	⑤
		Exhaust Manifold Nuts or Bolts		21 (16)	21 (16)
		Magnet Ring Nut		125 (92)	125 (92)
		Crankcase Nuts or Screws	M6	11 (8)	11 (8)
			M8	29 (21)	29 (21)
		Crankcase/Engine Support Nuts or Screws		40 (29)	40 (29)
		Cylinder Head Nuts		29 (21)	29 (21)
		Crankcase/Cylinder Nuts or Screws		29 (21)	29 (21)
	Axial Fan Shaft Nut			N.A.	N.A.

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Subsection 03 (VEHICLES)

				VEHICLE MODEL	GRAND TOURING SE	MACH Z STD	MACH Z TECH PLUS	
				ENGINE TYPE	809	809	809	
	Chain Drive Ratio				24/43	26/43	26/43	
	Chain	Pitch in			3/8	3/8	3/8	
		Type/Links Qty/Plates Qty			Silent 72/13	Silent 72/13	Silent 72/13	
	Drive Pulley	Type of Drive Pulley			TRA	TRA	TRA	
		Ramp Identification and Roller Pin Type			299 ⑤	295 ⑤	295 ⑤	
		Calibration Screw Position or Calibration Disc Quantity			3	3	3	
		Spring Color			Violet/Yellow	Green/Blue	Green/Blue	
		Spring Length ± 1.5 mm (± .060 in)			157.9 (6.22)	147.4 (5.80)	147.4 (5.80)	
		Clutch Engagement ± 200 RPM			3300	4200	4200	
	Driven Pulley	Type			HPV27	Formula	HPV27	
		Spring Preload ± 0.7 kg (± 1.5 lb)			N.A.	7.0 (15.4)	N.A.	
		Cam Angle Degree			47 – 44	53 – 44	47 – 44	
	Pulley Distance	Z	± 0.5 mm (± .020 in)			121.0 (4.764)	121.0 (4.764)	121.0 (4.764)
	Offset	X	± 0.5 mm (± .020 in)			35.5 (1.398)	35.5 (1.398)	35.5 (1.398)
		Y – X	MIN. – MAX.	mm (in)		0.5 – 1.5 (.020 – .060)	1.0 – 2.0 (.039 – .079)	1.0 – 2.0 (.039 – .079)
	Drive Belt Part Number (P/N)				417 300 066	417 300 066	417 300 066	
	Drive Belt Width (new) ① mm (in)				35.1 (1.382)	35.1 (1.382)	35.1 (1.382)	
	Drive Belt Adjustment		Deflection ± 5 mm (± .197 in)		38 (1.496)	38 (1.496)	38 (1.496)	
			Force ② kg (lbf)		11.5 (25)	11.5 (25)	11.5 (25)	
	Track	Width		cm (in)		38.1 (15.0)	38.1 (15.0)	38.1 (15.0)
		Length		cm (in)		345.5 (136)	307.4 (121)	307.4 (121)
		Profile Height		mm (in)		22.3 (.878)	22.3 (.878)	22.3 (.878)
		Adjustment	Deflection mm (in)		30 – 35 (1-3/16 – 1-3/8)	30 – 35 (1-3/16 – 1-3/8)	30 – 35 (1-3/16 – 1-3/8)	
			Force ③ kg (lbf)		7.3 (16)	7.3 (16)	7.3 (16)	
	Suspension Type		Track		SC-10 II	SC-10 II	SC-10 II	
			Ski		ADSA	ADSA	ADSA	
	Length cm (in)				303.5 (119.5)	277.5 (109.3)	277.5 (109.3)	
	Width cm (in)				117.4 (46.2)	117.4 (46.2)	117.4 (46.2)	
	Height cm (in)				130.0 (51.2)	114.3 (45.0)	114.3 (45.0)	
	Ski Stance cm (in)				104.1 (41)	104.1 (41)	104.1 (41)	
	Toe-out and Camber mm (in) degree				12 (1/2) - 4.5	16 (5/8) - 2.5	16 (5/8) - 2.5	
	Mass (dry) kg (lb)				279 (614)	254 (559)	254 (559)	
	Ground Contact Area cm² (in²)				7356.7 (1140.3)	6670.9 (1034)	6670.9 (1034)	
	Ground Contact Pressure kPa (PSI)				3.72 (.539)	3.74 (.542)	3.74 (.542)	
	Frame Material				Aluminum	Aluminum	Aluminum	
	Bottom Pan Material				Impact Copolymer	Impact Copolymer	Impact Copolymer	
	Hood Material				TPO	TPO	TPO	
	Battery V (A•h)				12/20	N.A.	N.A.	
	Headlight W				H4 60/55	H4 60/55	H4 60/55	
	Taillight and Stoplight W				8/27	8/27	8/27	
	Tachometer and Speedometer Bulbs W				3	3	3	
	Fuel and Temperature Gauge Bulbs W				3	3	3	
	Fuse	Starter Solenoid A			30	N.A.	N.A.	
		Fuel Level Sensor A			0.25	0.25	0.25	
	Fuel Tank L (U.S. gal)				42 (11.1)	42 (11.1)	42 (11.1)	
	Chaincase/Gearbox mL (U.S. oz)				250 (8.5)	250 (8.5)	250 (8.5)	
	Cooling System ④ L (U.S. oz)				5.1 (172.5)	5.0 (169)	5.0 (169)	
	Injection Oil Reservoir L (U.S. oz)				4.1 (138.7)	4.1 (138.7)	4.1 (138.7)	

ENGINE LEGEND

BTDC: Before Top Dead Center
CDI: Capacitor Discharge Ignition
CTR: Center
K: Kilo (x 1000)
MAG: Magneto Side
N.A.: Not Applicable
PTO: Power Take Off Side
R: Rectangular
ST: Semi-Trapezoidal

- ① The maximum horsepower RPM applicable on the vehicle. It may be different under certain circumstances and BOMBARDIER INC. reserves the right to modify it without obligation.
- ② Crankshaft end-play is not adjustable on these models. Specification is given for verification purposes only.
- ③ At 3500 RPM with headlamp turned on.
- ④ All resistance measurements must be performed with parts at room temperature (approx. 20°C (68°F)). Temperature greatly affects resistance measurements.
- ⑤ Drive pulley retaining screw: torque to 90 to 100 N•m (66 to 74 lbf•ft), install drive belt, accelerate the vehicle at low speed (maximum 30 km/h (20 MPH)) and apply the brake; repeat 5 times. Recheck the torque of 90 to 100 N•m (66 to 74 lbf•ft).

VEHICLE LEGEND

ADSA: Advanced Direct Shock Action
TPO: Thermo Plastic Olefin
TRA: Total Range Adjustable
N.A.: Not Applicable

- ① Minimum allowable width may not be less than 3.0 mm (1/8 in) of new drive belt.
- ② Force applied midway between pulleys to obtain specified tension deflection.
- ③ Force or downward pull applied to track to obtain specified tension deflection.
- ④ Coolant mixture: 60% antifreeze/40% water.
- ⑤ Lever with roller pin (P/N 417 004 308) (solid).