

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 × 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	MACH Z SPORT	MACH Z TECH PLUS		
	ENGINE TYPE	809			
	Number of Cylinders	3			
	Bore	mm (in)	70.50 (2.776)		
	Stroke	mm (in)	68.0 (2.677)		
	Displacement	cm ³ (in ³)	796.3 (48.59)		
	Compression Ratio	± 0.5	12.0		
	Maximum Power Engine Speed ①	± 100 RPM	8300		
	Piston Ring Type	1 st /2 nd	ST/R		
	Ring End Gap	New	mm (in)	0.2 (.008)	
		Wear Limit	mm (in)	1.0 (.039)	
	Ring/Piston Groove Clearance	New	mm (in)	0.03 (.0012)	
		Wear Limit	mm (in)	0.2 (.0079)	
	Piston/Cylinder Wall Clearance	New	± 0.013 mm (± .0005 in)	0.095 (.0037)	
		Wear Limit	mm (in)	0.20 (.0079)	
	Connecting Rod Big End Axial Play	New	mm (in)	0.39 (.0154)	
Wear Limit		mm (in)	1.2 (.0472)		
Maximum Crankshaft End-play ②	mm (in)	0.3 (.012)			
Maximum Crankshaft Deflection at PTO	mm (in)	0.06 (.0024)			
	Magneto Generator Output	W	290		
	Ignition Type	CDI			
	Spark Plug Make and Type	NGK BR9ES			
	Spark Plug Gap	± 0.05 mm (± .002 in)	0.45 (.018)		
	Ignition Timing BTDC ③	mm (in)	1.94 (.076)	2.59 (.102)	
	Trigger Coil ④	Ω	190 – 300		
	Generating Coil ④	Low Speed	Ω	25 – 56	
		High Speed	Ω	3.5 – 8.1	
	Lighting Coil ④	Ω	0.15 – 0.35		
	High Tension Coil ④	Primary	Ω	0.2 – 0.5	
		Secondary	kΩ	6 – 13	
	Carburetor Type	PTO/CTR/MAG	TM 38 C317		
	Main Jet	PTO/CTR/MAG	290		
	Needle Jet	327 O-2			
	Pilot Jet	50			
	Needle Identification — Clip Position	8ADY1-41-3			
	Slide Cut-Away	2.0			
	Float Adjustment	± 1 mm (± .040 in)	21.0 (.83)		
	Air Screw Adjustment	± 1/16 Turn	4-1/2		
	Idle Speed	± 200 RPM	2000		
	Gas Type/Pump Octane Number	Super Unleaded/91			
	Gas/Oil Ratio	Injection			
	Type	Liquid			
	Axial Fan Belt Adjustment	Deflection	mm (in)	N.A.	
		Force	kg (lbf)	N.A.	
	Thermostat Opening Temperature	°C (°F)	N.A.		
	Radiator Cap Opening Pressure	kPa (PSI)	N.A.		
	ENGINE COLD N·m (lb·ft)	Drive Pulley Retaining Screw	⑤		
		Exhaust Manifold Nuts or Bolts	21 (16)		
		Magneto Ring Nut	125 (92)		
		Crankcase Nuts or Screws	M6	11 (8)	
			M8	29 (21)	
		Crankcase/Engine Support Nuts or Screws	40 (29)		
		Cylinder Head Nuts	29 (21)		
		Crankcase/Cylinder Nuts or Screws	29 (21)		
Axial Fan Shaft Nut	N.A.				

Section 10 TECHNICAL DATA

Subsection 03 (VEHICLES)

VEHICLE MODEL		MACH Z SPORT	MACH Z TECH PLUS	
ENGINE TYPE		809		
Chain Drive Ratio		26/43		
Chain	Pitch	in 3/8		
	Type/Links Qty/Plates Qty	Silent 72/13		
Drive Pulley	Type of Drive Pulley	TRA		
	Ramp Identification and Roller Pin Type	295 ⑤		
	Calibration Screw Position or Calibration Disc Quantity	3		
	Spring Color	Green/Blue		
	Spring Length	± 1.5 mm (± .060 in)	147.4 (5.80)	
	Clutch Engagement	± 200 RPM	4200	
Driven Pulley	Type	Formula	HPV27	
	Spring Preload	± 0.7 kg (± 1.5 lb)	N.A.	
	Cam Angle	Degree 53 – 44	47 – 44	
Pulley Distance	Z	± 0.5 mm (± .020 in)	121.0 (4.764)	
Offset	X	± 0.5 mm (± .020 in)	35.5 (1.398)	
	Y – X	MIN. – MAX. ± 0.75 mm (± .030 in)	1.5 (.059)	
Drive Belt Part Number (P/N)		417 300 066		
Drive Belt Width (new) ①		mm (in) 35.1 (1.382)		
Drive Belt Adjustment	Deflection	± 5 mm (± .197 in)	38 (1.496)	
	Force ②	kg (lbf)	11.5 (25)	
Track	Width	cm (in) 38.1 (15.0)		
	Length	cm (in) 307.4 (121)		
	Profile Height	mm (in) 22.3 (.878)		
	Adjustment	Deflection	mm (in) 30 – 35 (1-3/16 – 1-3/8)	
		Force ③	kg (lbf) 7.3 (16)	
Suspension Type	Track	SC-10 II		
	Ski	ADSA		
	Length	cm (in) 277.5 (109.3)		
	Width	cm (in) 117.4 (46.2)		
	Height	cm (in) 114.3 (45.0)		
	Ski Stance	cm (in) 104.1 (41)		
	Toe-out and Camber	mm (in)	16 (5/8)	
		degree	- 2.5	
	Mass (dry)	kg (lb) 254 (559)		
	Ground Contact Area	cm ² (in ²) 6670.9 (1034)		
	Ground Contact Pressure	kPa (PSI) 3.74 (.542)		
	Frame Material	Aluminum		
	Bottom Pan Material	Impact Copolymer		
	Hood Material	TPO		
	Battery	V (A•h)	N.A.	
	Headlight	W	H4 60/55	
	Taillight and Stoplight	W	8/27	
	Tachometer and Speedometer Bulbs	W	3	
	Fuel and Temperature Gauge Bulbs	W	3	
	Fuse	Starter Solenoid	A	N.A.
		Fuel Level Sensor	A	0.25
	Fuel Tank	L (U.S. gal)	42 (11.1)	
	Chaincase/Gearbox	mL (U.S. oz)	250 (8.5)	
	Cooling System ④	L (U.S. oz)	5.0 (169)	
	Injection Oil Reservoir	L (U.S. oz)	4.1 (138.7)	

ENGINE TECHNICAL DATA 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 TECHNICAL DATA 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 Ethylene-glycol antifreeze for aluminum engines mixed with distilled water (1 part of antifreeze for 1 part of distilled water). Bombardier premixed coolant - 37°C (- 35°F) (16 x 1 L) (P/N 293 600 038).
- ⑤ Lever with roller pin (P/N 417 004 308) (solid).