

WAKE PRO 215

MODEL			WAKE PRO 215
ENGINE			
Engine type			ROTAX® 1503 4-TEC™, 4-stroke, Single Over Head Camshaft (SOHC)
Induction			Supercharged intercooled
Number of cylinders			3
Number of valves			12 valves with hydraulic lifters (no adjustment)
Bore			100 mm (3.9 in)
Stroke			63.4 mm (2.5 in)
Displacement			1 493.8 cm³ (91 in³)
Compression ratio			8.4:1
Maximum RPM			8000 RPM
Lubrication	Type		Dry sump (2 oil pumps). Replaceable oil filter. Water-cooled oil cooler
	Oil type		XPS synthetic blend oil (summer grade) (P/N 293 600 121). Refer to <i>LUBRICATION SYSTEM</i> subsection
	Capacity		3 L (3.2 qt (U.S. liq.)) oil change w/filter 4.5 L (4.8 qt (U.S. liq.)) total
Intake valve opening			0° BTDC
Intake valve closing			50° ABDC
Exhaust valve opening			50° BBDC
Exhaust valve closing			0° ATDC
Valve stem diameter	Intake	New	5.961 mm to 5.975 mm (.2347 in to .2352 in)
		Wear limit	5.930 mm (.233 in)
	Exhaust	New	5.946 mm to 5.960 mm (.2341 in to .2346 in)
		Wear limit	5.930 mm (.233 in)
Valve guide diameter		New	5.994 mm to 6.018 mm (.236 in to .2369 in)
		Wear limit	6.060 mm (.2386 in)
Valve spring free length	Inner	New	41.02 mm (1.615 in)
		Wear limit	38.80 mm (1.528 in)
	Outer	New	45.45 mm (1.789 in)
		Wear limit	43.00 mm (1.693 in)
Valve seat contact width	Intake	New	1.10 mm to 1.30 mm (.043 in to .051 in)
		Wear limit	1.60 mm (.063 in)
	Exhaust	New	1.25 mm to 1.55 mm (.049 in to .061 in)
		Wear limit	1.80 mm (.071 in)
Rocker arm inner diameter		New	20.007 mm to 20.020 mm (.7877 in to .7882 in)
		Wear limit	20.050 mm (.7894 in)
Rocker arm shaft diameter		New	19.980 mm to 19.993 mm (.7866 in to .7871 in)
		Wear limit	19.970 mm (.7862 in)
Cylinder head maximum warpage		Service limit	0.15 mm (.006 in)

Subsection XX (WAKE PRO 215)

MODEL			WAKE PRO 215
ENGINE (cont'd)			
Piston ring type		1 st	Upper compression ring, rectangular
		2 nd	Lower compression ring, tapered face
		3 rd	Oil scraper ring
Ring end gap	Rectangular	New	0.30 mm to 0.50 mm (.012 in to .02 in)
	Taper-face	New	0.35 mm to 0.55 mm (.014 in to .022 in)
	Oil scraper ring	New	0.35 mm to 0.50 mm (.014 in to .02 in)
	All	Wear limit	1.50 mm (.059 in)
Ring/piston groove clearance	Rectangular	New	0.025 mm to 0.070 mm (.001 in to .003 in)
	Taper-face	New	0.015 mm to 0.06 mm (.0006 in to .0024 in)
	Oil scraper ring	New	0.020 mm to 0.055 mm (.001 in to .002 in)
	All	Wear limit	0.15 mm (.006 in)
Piston/cylinder wall clearance		New	0.04 mm to 0.08 mm (.0016 in to .0031 in)
		Wear limit	0.100 mm (.0039 in)
Cylinder taper		Wear limit	0.100 mm (.0039 in)
Cylinder out of round (maximum)			0.015 mm (.0006 in)
Camshaft bearing journal diameter	Front	New	24.939 mm to 24.960 mm (.9819 in to .9827 in)
		Wear limit	24.910 mm (.9807 in)
	PTO and center	New	39.892 mm to 39.905 mm (1.5706 in to 1.5711 in)
		Wear limit	39.880 mm (1.5701 in)
Camshaft bearing inner diameter	Front	New	25.000 mm to 25.013 mm (.9843 in to .9848 in)
		Wear limit	25.050 mm (.9862 in)
	PTO and center	New	40.000 mm to 40.020 mm (1.5748 in to 1.5756 in)
		Wear limit	40.050 mm (1.5768 in)
Cam lobe height	Intake	New	31.540 mm to 31.740 mm (1.2417 in to 1.2496 in)
		Wear limit	31.50 mm (1.2402 in)
	Exhaust	New	31.430 mm to 31.630 mm (1.2374 in to 1.2453 in)
		Wear limit	31.380 mm (1.2354 in)
Crankshaft deflection		Maximum	0.05 mm (.002 in)
Crankshaft axial clearance		New	0.080 mm to 0.220 mm (.0031 in to .0087 in)
		Wear limit	0.35 mm (.014 in)
Crankshaft bearing journal diameter		New	49.991 mm to 50.000 mm (1.9681 in to 1.9685 in)
		Wear limit	49.950 mm (1.9665 in)
Crankshaft radial clearance		Wear limit	0.07 mm (.0028 in)
Connecting rod big end diameter		Service limit	45.080 mm (1.7748 in)
Connecting rod big end radial play		Service limit	0.090 mm (.0035 in)
Connecting rod big end axial play		New	0.100 mm - 0.352 mm (.004 in - .014 in)
		Wear limit	0.500 mm (.0197 in)
Connecting rod small end diameter		New	23.010 mm to 23.020 mm (.9059 in to .9063 in)
		Wear limit	23.070 mm (.9083 in)

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ENGINE (cont'd)		
Connecting rod small end radial play	Wear limit	0.080 mm (.0031 in)
Piston pin diameter	New	22.996 mm to 23.000 mm (.9054 in to .9055 in)
	Wear limit	22.990 mm (.9051 in)
Balance shaft journal diameter	New	31.984 mm to 32.000 mm (1.2592 in to 1.2598 in)
	Wear limit	31.950 mm (1.2579 in)
Balance shaft radial clearance	Wear limit	0.070 mm (.0028 in)
Balance shaft axial clearance	New	0.020 mm to 0.250 mm (.0008 in to .0098 in)
Supercharger shaft driven plate journal depth	New	14.460 mm to 14.500 mm (.5693 in to .5709 in)
	Wear limit	14.600 mm (.5748 in)
Supercharger drive gear thickness	New	11.000 mm to 11.050 mm (.4331 in to .435 in)
	Wear limit	10.900 mm (.4291 in)
Supercharger lock washer thickness	New	4.050 mm to 4.150 mm (.1594 in to .1634 in)
	Wear limit	3.950 mm (.1555 in)
Supercharger spring washer package height (not compressed)	New	10.900 mm to 10.700 mm (.4291 in to .4213 in)
	Wear limit	10.200 mm (.4016 in)
AIR INTAKE SYSTEM		
Intake spark arrester		Tubular, wire screen
COOLING SYSTEM		
Type		Closed loop cooling system
Coolant		Ethylene-glycol and distilled water (50%/50%). Use premix coolant from BRP or a coolant specially formulated for aluminum engines
Cooling system capacity		5.5 L (5.8 qt (U.S. liq.)) total
Thermostat		87°C (189°F)
Monitoring beeper setting		100°C (212°F)
EXHAUST SYSTEM		
Type		D-Sea-Bel sound reduction system. Water cooled/water injected (open loop). Direct flow from jet pump
Water injection in muffler		3 x 3.5 mm (.138 in) on exhaust pipe and 1 x 3.5 mm (.138 in) on muffler
FUEL SYSTEM		
Fuel injection type		Multipoint fuel injection with iTC (intelligent Throttle Control). Single throttle body (62 mm) with an actuator
Fuel pressure		386 kPa to 414 kPa (56 PSI to 60 PSI)
Fuel injector	Quantity	3
Fuel type	Inside North America ((RON + MON)/2)	91 or higher
	Outside North America (RON)	95 or higher
Fuel tank (including reserve)		70 L (18 U.S. gal.)
Fuel tank reserve (from low level signal)		approx. 14 L (3.7 U.S. gal.)
Idle speed		1800 ± 50 RPM (not adjustable)

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ELECTRICAL SYSTEM		
Magneto generator output		360 W @ 6000 RPM
Stator		0.1 to 1.0 Ω
Battery		12 V, 30 A•h
Anti-start system		D.E.S.S. (Digitally Encoded Security System) with selectable maximum vehicle speed settings for RK (rental key) and LK (learning key)
Ignition system type		IDI (Inductive Discharge Ignition)
Ignition timing		Variable (electronically controlled)
Spark plug	Make and type	NGK DCPR8E
	Gap	0.7 mm to 0.8 mm (.028 in to .031 in)
Ignition coil	Primary	0.85 to 1.15 Ω
	Secondary	9.5 to 13.5 K Ω
Engine speed limiter setting		8300 RPM
Fuse box	#2: Diagnostic connector	15 A
	#3: START/STOP	3 A
	#4:GPS (if so equipped)	3 A
	#5: iBR power	30 A
	#6: Voltage rectifier/regulator	30 A
	#8: Battery	30 A
	#11: Depth sounder	3 A
	#12 O.T.A.S., Gauge start up, CAPS	3 A
	#13: Inj/Ign cyl 1	10 A
	#14: Inj/Ign cyl 2	10 A
	#15: Inj/Ign cyl 3	10 A
	#16: Starter solenoid	5 A
	#17: iBR control	5 A
	#18: Fuel pump	10 A
	#19: ECM power	15 A
STEERING AND PROPULSION		
Steering		Adjustable 4 positions
Steering nozzle pivoting angle		26°
O.T.A.S. (Off-Throttle Assisted Steering)		Electronically-controlled. Achieved with the iBR gate and engine speed
Jet pump	Type	Axial flow single stage
	Grease type	Jet pump bearing grease (P/N 293 550 032)
Impeller	Rotation (seen from rear)	Counterclockwise
	Pitch	10°/21°
	Outside diameter	159 mm $\pm$ 0.06 mm (6.26 in $\pm$.002 in)
STEERING AND PROPULSION (cont'd)		
Impeller/wear ring clearance	New	0 mm to 0.23 mm (0 in to .009 in)
	Wear limit	0.35 mm (.0138 in)
Impeller shaft	End play (new)	0
	Side play	0

MODEL		WAKE PRO 215
Drive shaft	Coupling type	Crowned splines, direct drive
	Deflection (max.)	0.5 mm (.02 in)
Minimum required water level for propulsion system		90 cm (3 ft) underneath the lowest rear portion of hull
iBR and VTS		
Description		Intelligent Brake and Reverse activated by a LH lever. Electronically-controlled iBR gate to provide brake, reverse, neutral and forward position
Gate angle (from horizontal line of watercraft)	Forward	Approx. from +8° to -4°
	Neutral	Approx. -52°
	Braking	Approx. -70°
	Reverse	Approx. from -52° to -70°
VTS system		Electronically-controlled through the VTS control button
VTS range angle		8° up, -4° down
Actuator		12 V, 80 A max. capacity. Reversible PWM (pulse-width modulation) motor
WEIGHT AND LOADING CAPACITY		
Dry weight		379 kg (834 lb)
Number of passenger (driver incl.)		3
Load limit (passenger and 10 kg (22 lb) luggage)		272 kg (600 lb)
DIMENSIONS		
Overall length		354 cm (139 in)
Overall width		122 cm (48 in)
Overall height		116.6 cm (45.91 in)
MATERIALS		
Hull		Composite fiberglass
Inlet grate		Aluminum
Steering cover		Thermoplastic
Impeller material		Stainless steel
Impeller housing/stator		Aluminum/aluminum
Venturi		Aluminum
Nozzle		Aluminum
Fuel tank		Polyethylene
Seat		Polyurethane/foam