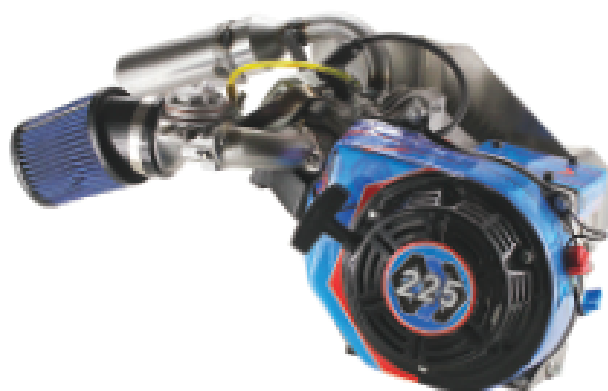


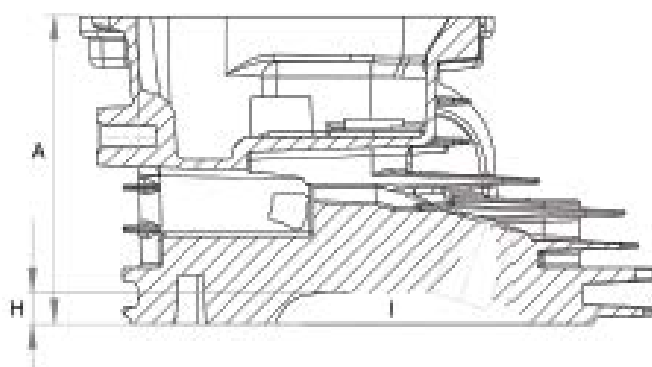
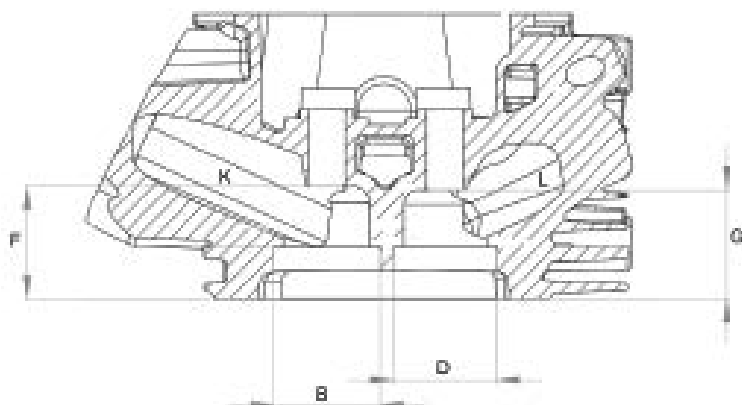


## RACE SPEC 4-Stroke - 225cc



Feature	Specification
Engine Type	2 Valve 4-Stroke
Fuel Type	Unleaded Petrol
Cylinder	Single/35° Heavy Reinforced Aluminum Block w/Cast Iron Sleeve
Cylinder Volume	225cc
Bore	72mm/2.834 in
Theoretical Bore	72.1mm/2.838 in
Stroke	58mm/2.204 in
Cooling System	Air
Carburetor	Tillotson HW-225 20mm Venturi
Cylinder Head	Aluminum Alloy 2-Valve Over Head Valve
Combustion Chamber Shape	26cc Factory Designed
Compression Ratio	9:1
PVL Ignition	4 Poles Digital Built in Limiter 6500RPMS (Coil Gap 0.9mm)
Flywheel	Digital Ignition Billet Aluminum 31° Advance Timing
Connecting Rod	Billet Aluminum w/Bearing Inserts
Rod Length	88mm/3.4646 in
Camshaft	.265 Max Lift Race Cam with Built in Compression Release
Engine Oil Volume	500mL minimum

Engines must conform to the technical data provided with no modification or machining allowed. Parts must be original as supplied by the manufacturer.



**Cylinder Head**

A. Overall Height	74.05mm Min
B. Intake Seat ID	24.75mm $\pm$ 0.1mm
C. Intake Seat Angle	60-45-30
D. Exhaust Seat ID	22.6 $\pm$ 0.1mm
E. Exhaust Seat Angle	60-45-30
F. Bowl Depth Intake	29.2 $\pm$ 0.1mm
G. Bowl Depth Exhaust	28.3 $\pm$ 0.1mm
H. Combustion Chamber Depth	7.5mm $\pm$ 0.1mm
I. Combustion Chamber Vol	20.9cc
J. Valve Head Height from Gasket Surface	6.5mm $\pm$ 0.1mm
K. Intake Port Volume	31cc Max
L. Exhaust Port Volume	24.3cc Max



**Cylinder Head Gasket**

Material	Composite
Thickness	1.26mm $\pm$ .1
Fire Ring	Steel



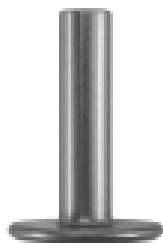
**Rocker Arm**

Material	Steel
Ratio	1:1 max
Length	55mm min
Tip Shape	Rectangular



**Guide Plate**

Material	Steel
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Valve Lifter/Tappet

Material	Mild Steel
Overall Length	34.7mm
Stem Diameter	8mm
Head Diameter	23.6mm
Weight	20.5g min



Valve Spring

Material	Steel
Relaxed Height	30.5mm
Install Height	20.7mm min
Wire Diameter	2.2mm
Overall O.D.	10.8mm
Spring Pressure	115.7N



Valve Spring Retainer & Lock

Material	Steel
Overall Height	8mm min
Overall O.D.	20.7mm
Retainer Weight	6.5g min
Lock Weight	2.3g min



Push Rod

Material	Steel
Overall Length	134mm min
Ball End Diameter	5mm min
Rod Diameter	4mm min
Weight	11g min



Intake Valve

Material	Alloy Steel
Overall Length	64mm min
Stem Diameter	5mm min
Head Diameter	27mm max
Valve Margin	3mm ±.1mm
Valve Angle	45°
Weight	21g min
Valve Marking	IN Z81 YF



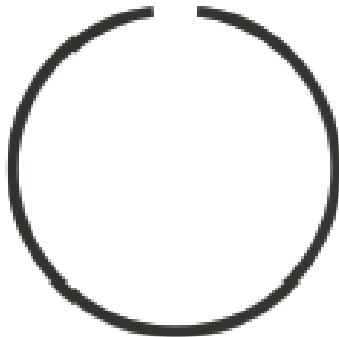
Sparkplug

Model	BPR6ES
Brand	NGK



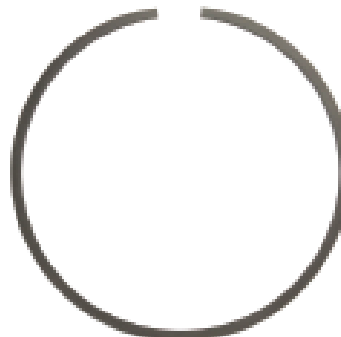
Exhaust Valve

Material	Alloy Steel
Overall Length	64mm min
Stem Diameter	5mm min
Head Diameter	25mm max
Valve Margin	2.3mm ±.1mm
Valve Angle	45°
Weight	20g min
Valve Marking	EX Z81 YF



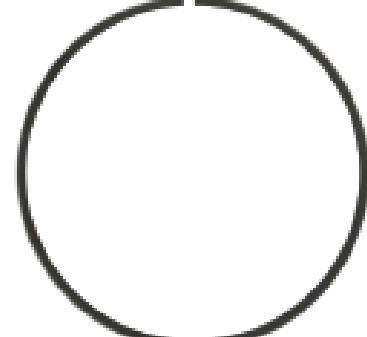
Piston Top Ring

Material	Steel
Thickness	1mm±.02



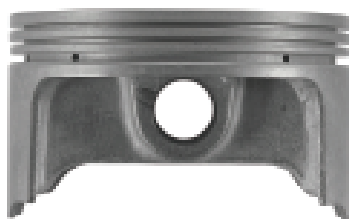
Piston Second Ring

Material	Steel
Thickness	1mm±.02



Piston Oil Scraper Ring

Material	Steel
Thickness	.40mm±.02



Piston

Material	Aluminum
Diameter	72mm
Compression Height	19.55mm
Wrist Pin Diameter	13mm ± .01
Top Ring Landing	2.5mm
Second Ring Landing	2mm
Oil Ring Landing	1.5mm
Piston Top	Flat
Weight w/o Rings	132g ± .5g



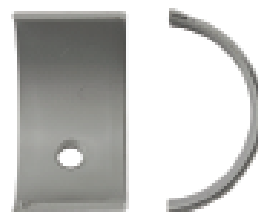
Piston Oil Compression Ring

Material	Steel
Thickness	1.72mm±.02 (800 p0-)



Connecting Rod

Material	Billet Aluminum 7075-T6
Rod Length	88mm/3.4646 ± .02mm
Width	23.75 ± .1mm
Weight	102g ± 5g



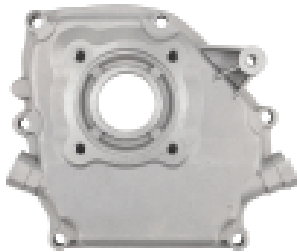
Connecting Rod Bearing Insert

Material	Babbitt
Thickness	1.5mm -.1 for wear
Width	19.1mm
Weight	21.5g min



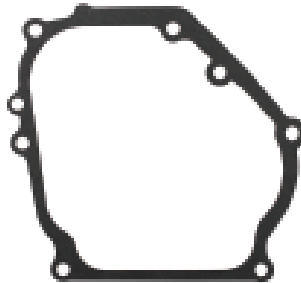
Piston Wrist Pin

Material	Steel
Overall Length	40.3mm ±.02mm
Outside Diameter	13mm ±.02mm
Inside Diameter	9mm ±.02
Weight	21.7g min



Crankcase Side Cover

Material	Cast Aluminum
Bearing OD	52mm
Bearing ID	25mm
Dowel Material	steel



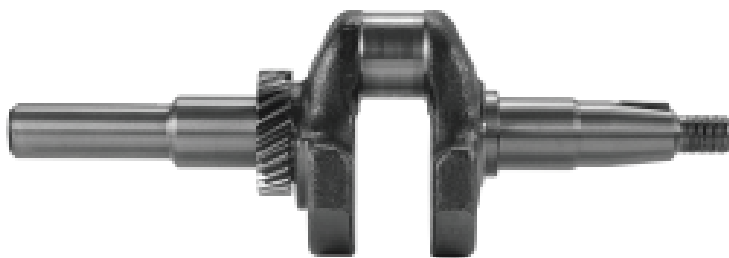
Crankcase Side Cover Gasket

Material	Paper
Thickness	0.5mm
Color	Black



Crankcase Bearing

Material	Steel
Ball Material	Steel
Retainer Material	Steel
Bearing OD	52mm
Bearing ID	25mm



Crankshaft

Material	Forged Steel
Crank Pin Diameter	88mm/3.4646 -.15mm/-.059mm for wear
PTO Shaft Diameter	19.05mm
Weight	1824g ±5g

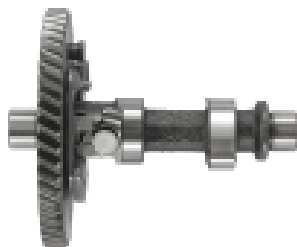


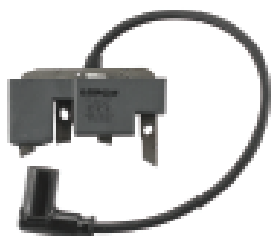
Crankcase Seal

Material	Fluoropolymer - Red
Outside Dia	41.25
Inside Dia	23.6mm

Camshaft Specs

Compression Release	Stock/ unmodified
Base Circle	.865" ±.05"
Intake Duration	235.5 @.050
Exhaust Duration	234.5 @.050
Intake Cam Lift	.264
Max Intake Valve Lift	.265
Exhaust Cam Lift	.265
Max Exhaust Valve Lift	.265
Intake Centerline	107
Exhaust Centerline	111.5





**Ignition Coil**

RPM Limit	6500
Brand	PVL
Type	Digital



**Flywheel**

Material	Billet Aluminum
Diameter	165mm
Weight	1.45kg
Timing	31°

**Clutch**

Brand	Max Torque
Type	Drum



**Exhaust Header/Muffler**

Model	
Brand	RLV

Fastener Torque Specs		
Description	Wrench/ Socket Size	Torque
Blower Housing	8mm	10N.m
Carburetor to Manifold	10mm	10N.m
Connecting Rod	1/4" 12 Point	13N.m
Cylinder Head Bolts	12mm	30N.m
Exhaust Brace Screw	13mm	28N.m
Exhaust Stud	8mm	10N.m
Flywheel Fan	21mm	40N.m
Intake to Cylinder Head	5mm	10N.m
Oil Drain Plug	10mm	22N.m
Rocker Arm Stud	12mm	24N.m
Rocker Arm Set Screw	10mm	10N.m
Sparkplug	21mm	24N.m
Side Cover	10mm	28N.m
Valve Cover	8mm	7N.m