

POLARIS RZ 700, Tuning World

Engine Basic Spec

Bore	70mm
Stroke	60mm
Con-Rod	112mm
Total cc	692.59cc
Bore/Stroke Ratio	1.166
Rpm Peak HP	9700rpm
HP,max	150.2hp
Rpm Peak Torque	9600rpm
Torque,max	82.3lb-ft
BMEP Hp Peak	143psi
BMEP Hp peak	9.86bar
Piston Speed	19.32m/s
Piston Speed	38.03ft/min

Head Basic Spec

Geometric CR/1	14.19
Trapped CR/1	6.78
Used Head Gasket	1.1mm
Head Gasket Bore	72.8mm
Deck Clearance	0.2mm
Head Step Cut	1-1.3mm
Total Squish Clea.	2.2mm
Head Bore	70.3mm
Used Cylinder gasket	mm
Crank Press.	114 psi
Est. Crank Press.	149 psi
Est. Octan R+M/2	103

Head Volume

Gasket Volume	4.58
Deck Volume	0.77
Port Closed Vol.	101.27
Head cc Flat Plate	21.1
Head cc Installed	17.5

Head Design

Type	central
Bowl Width + ble. rad.	49.8mm
Squish Width	9.5mm
Squish Angle	11°
SAR	0.493
Total deep	10.6mm
Head width	46.7mm

Head Squish Action

Squish Velocity	13.9m/s
Squish Pressure Ratio	1.040
At deg btdc	12.46°
Kinetic Energy	1.4mj

M.Performance Tel: 0250-71321

Std. Piston Spec

Skirt Length	mm
Pin c. to up length	mm
Pin c. to down length	mm
Pin c. to trans inlet	mm
Wrist-Pin diameter	mm
Thickness of Rings	2 *
Dome Height	
Dome average Radius	
Dome Ang under Sq.band	9.5°
Dome volyme,cc	8.94
Weight Pist. + Ring	g
Weight wrist pin	g

Cylinder Reed Intake Spec.

Petal Material	Carbon
Petal thickness	0.40
Reed natural frequency,Hz	201
Engine natural frequency,Hz	162
Required flow area, mm ²	1977
Designed flow area,mm ²	1654
Est. Carb size on area	40.3
Est. Carb size on cc/rpm	39
Intake gas velocity now est.	199
Estimated HP	120.15
Estimated BMEP,Psi	116

Transfers Spec

Main port roof to top	46.5mm
M-port liner width	27.4mm
M-port chordal width	27.4mm
M-port angle up	14°
5-Port roof to top	46.5mm
5-port liner width	26mm
5-port chordal width	26mm
5-port angle up	18°
Boost Port roof to topp	45.8mm
Boost Port width	14.4*2 = 28.8
Boost angle up	31°
Total area	1744mm ²
Time-Area	11.21
S-sg mm	2.59
Good to hp	250hp
Opens	115.6°
Duration	128.7°
TAW T/B ratio (ch)	1.82
TAW T/B ratio liner	1.94

Exhaust Spec.

Dist. to top	26.5mm
Upper radius	^ 11
Lower radius	^ 13.2
Max width	50mm
Blowdown width	47.2mm
% of bore width	71.1%
Port Opens	75.46°
Duration	209.07°
Blowdown deg.	40.2°
Total Area	1501mm ²
Blowdown Area	925.3mm ²
Lower Area	576mm ²
Time-Area	15.19
Time-Area,blowdown	11.24
S-sg mm	3.50
Angle-Area	8.90
Estimated HP	149.7hp
Estimated BMEP	144.8psi
Est. Blowdown HP	164.7hp
Est. Blowdown BMEP	159psi
Length of port	mm
I.D of port	42mm
Estimated port i.d	43.7mm
Exh. gas velocity est.	177fps

Carburetor Spec

Typ	TM 39.6
Main Jet	
Mj based on sae Rad	1.00 %
Mj based on air temp,c	5+
Jet Needle	
Needle Jet	
Throttle valve cut.	
Pilot Jet	
Air Screw	

Ignition Spec

Btdc at 3000 rpm,mm	
Btdc at 3000 rpm,deg	°
Btdc at 7500 rpm,mm	
Btdc at 7500 rpm,deg	°
Spark plug	B9EV
Spark plug gap	
Cdi box id. #	12178
Alternator output	watt

MULLE Tuesday 28 May 1996