

Polaris Indy 650 01 style Stock

Engine Basic Spec

Bore	67.75mm
Stroke	60mm
Con-Rod	112mm
Total cc	648.78cc
Bore/Stroke Ratio	1.129
Rpm Peak HP	7750rpm
HP,max	94hp
Rpm Peak Torque	7250rpm
Torque,max	66.4lb-ft
BMEP Hp Peak	119.6psi
BMEP Hp peak	8.24bar
Piston Speed	15.43m/s
Piston Speed	3038ft/min
Fuel Flow	67.9
Air Flow	155.4
A/F	10.5
BSFC	0.73

Head Basic Spec

Geometric CR/1	11.30
Trapped CR/1	6.37
Used Head Gasket	1.45mm
Head Gasket Bore	69.95mm
Deck Clearance	0.5mm
Head Step Cut	2.00mm
Total Squish Clea.	3.95mm
Head Bore	67.65mm
Used Cylinder gasket	0.45mm
Est. Crank Press.	140psi
Est. Octan R+M/2	

Head Volume

Gasket Volume	5.57
Deck Volume	1.80
Port Closed Vol.	112.84
Head cc Flat Plate	21.5
Head cc Installed	21.0

Head Design

Type	central
Bowl Width + ble. rad.	46.2mm
Squish Width	11.4mm
Squish Angle	15°
SAR	0.533
Total deep	12.06mm
Head width	48mm

Head Squish Action

Squish Velocity	5.2m/s
Squish Pressure Ratio	1.020
At deg btdc	15.73°
Kinetic Energy	0.16mj

Std. Piston Spec

Skirt Length	67.71mm
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	°
Dome volyme,cc	7.37
Weight Pist. + Ring	g
Weight wrist pin	g

Intake Port Spec

Carb flange diam.	mm
Port intake diam.	39.7mm
Dist. to top	66.75mm
Dist. to bottom	98.6mm
Port open mm	31.4mm
Number of ports	2
Width of each	25.3mm
Width total	49.8mm
Upper right radius	R 7
Lower right radius	R 7.25
Port area	15.20mm ²
Time-Area	16.53
Angle-Area	7.69
Duration	167.96°
A.T.D.C	83.98°
% of bore width	73.5%
Est. Carb size on area	41.7mm
Est. carb size on cc/rpm	37.4mm
Intake gas velocity est.	161fps
Estimated HP	126.6hp
Estimated Bmep	163psi

Transfers Spec

Main port roof to top	48.2mm
M-port liner width	26.6mm
M-port chordal width	23.2mm
M-port angle up	16°
5-Port roof to top	48.2mm
5-port liner width	23.5mm
5-port chordal width	18.3mm
5-port angle up	28°
Total area	946mm ²
Time-Area	7.64
S-sg mm	1.64
Good to bmep/hp	126 / 97.2 hp
Opens	119.1°
Duration	121.8°
TAW T/B ratio (ch)	1.14
TAW T/B ratio liner	1.48

Exhaust Spec.

Dist. to top	31.8mm
Upper radius	8
Lower radius	10
Max width	44.65mm
Blowdown width	42.6mm
% of bore width	66.1%
Port type	Trapezoid
Port Opens	84.73°
Duration	190.55°
Blowdown deg.	34.3°
Total Area	1173mm ²
Blowdown Area	691mm ²
Lower Area	482mm ²
Time-Area	14.63
Time-Area,blowdown	9.64
S-sg mm	3.15
Angle-Area	6.8
Estimated HP	105hp
Estimated BMEP	136psi
Est. Blowdown HP	108hp
Est. Blowdown BMEP	140psi
Length of port	41mm
I.D of port	39.7mm
I.D of port good to rpm.	97-10500
Estimated port i.d	38.7mm
Exh. gas velocity est.	147fps

Carburetor Spec

Typ	VM38
Main Jet	240
Mj based on vapor pres.	0.40
Mj based on air temp,c	+13
Jet Needle	6DH4-3
Needle Jet	P-8-166
Throttle valve cut.	3.0
Pilot Jet	50
Air Screw	1.0

Ignition Spec

Btdc at 3000 rpm,mm	3.95
Btdc at 3000 rpm,deg	26.5°
Btdc at 7500 rpm,mm	1.21
Btdc at 7500 rpm,deg	14.5°
Spark plug	BR9ES
Spark plug gap	0.63
Cdi box id. #	CU1559
Alternator output	120watt

M.PERFORMANCE

MULLE Wednesday 11 October
1995

