Port Flow Analyzer v3.0 Performance World

Test: PW BBC 90290 www.performance-world.com

Folder: Chevrolet

Head #: PW BBC 90290

Customer:

Operator:

Bore Adapter Diameter: 4.00"

Int Port Adapter: Radiused Inlet

Exh Port Adapter: Short "stub stack"

Test Comments:

PW 90290 BB Chevrolet aluminum head as cast. Note:

Report of:					Tested at	Corr to	# Vlvs	Vlv Dia	Stem Dia	Port Area
Comparing				Int:	28"	28.0"	1	2.25"	.341"	0.00 sq in
1 Cylinders				Exh:	28"	28.0"	1	1.88"	.341"	0.00 sq in

Port	Lift	L/D	Avg CFM	Cyl 1 CFM
Intake	0.100	0.044	81.8	81.8
Intake	0.200	0.089	160.0	160.0
Intake	0.300	0.133	231.5	231.5
Intake	0.400	0.178	289.2	289.2
Intake	0.500	0.222	325.8	325.8
Intake	0.600	0.267	340.3	340.3
Intake	0.700	0.311	343.3	343.3
Intake	0.800	0.356	348.1	348.1
Exhaust	0.100	0.053	60.4	60.4
Exhaust	0.200	0.106	121.7	121.7
Exhaust	0.300	0.160	172.8	172.8
Exhaust	0.400	0.213	204.0	204.0
Exhaust	0.500	0.266	232.6	232.6
Exhaust	0.600	0.319	255.6	255.6
Exhaust	0.700	0.372	263.2	263.2
Exhaust	0.800	0.426	267.2	267.2

NOTE: ALL FLOWBENCHES ARE NOT CREATED EQUAL!
Data from one bench to the next can be vastly different.
If you are modifying this head, it is important to "baseline" first to ensure accuracy.
The data on this sheet is for reference only.

Head File: 90290

Head Comments:

PW 90290 BB Chevrolet aluminum head as cast.

Head Number		Customer	
Intake		Exhaust	
Layout:	1 valve & 1 port	Layout:	1 valve & 1 port
Valve Diameter, in	2.25"	Valve Diameter, in	1.88"
Stem Diameter, in	.341"	Stem Diameter, in	.341"
Throat Diameter, in		Throat Diameter, in	
Avg Seat Angle, deg	45	Avg Seat Angle, deg	45
Port Shape:	Oval	Port Shape:	"D" .375" Raised
Port Volume, ccs	290cc	Port Volume, ccs	123cc
Avg Port Diameter, in		Avg Port Diameter, in	
Avg Port Height, in		Avg Port Height, in	
Port Length, in		Port Length, in	

Specifications 90290	
Material	A356 Aluminum
Combustion Chamber CC	112cc
Intake Port Volume CC	290cc
Intake Port Dimension	2.01" x 1.75" Oval Port
Exhaust Port Volume CC	123cc
Exhaust Port Design	1.75" x 2.00" D Shape .375" Raised
Spark Plug Location	Stock
Intake Valve Size	2.25" (+.250" Length)
Exhaust Valve Size	1.88" (Std. Length)
Valve Stem Diameter	11/32" (.341")
Valve Spring Pocket I.D.	1.735"
Valve Spring Installed Height	1.95" +/- (w/std retnrs/locks & locators)
Valve Guide Material	Manganese Bronze
Valve Guide O.D.	0.530" (.570" at base)
Rocker Stud Thread Size	7/16"x20 (.820"-1.30" u.h.l.)
Valve Cover Mounting	Perimeter
Valve Angle	24° Intake/15° Exhaust
Valve Seat Machining	Intake=4-Angle Exhaust=3-Angle
Oiling	Through Pushrod

Suggested Components	**Size**	**Brand**
Intake Valves	2.25" x 5.49" x 11/32"	PW 360025
Exhaust Valves	1.88" x 5.42" x 11/32"	PW 360019
Installed Height	Per Camshaft Manufacturer	
Valve Springs	Per Camshaft Manufacturer	
Valve Retainers	Per Camshaft Manufacturer	
Valve Locks	11/32"	
Valve Seals	11/32" x .530"	PW 360480
Valve Spring Locators	Per Camshaft Manufacturer	
Rocker Arm Studs	7/16"-14 x 7/16"-14	PW 360372
Pushrod Guide Plates	3/8" pushrod	Manley 42164-8
Spark Plugs	Autolite 3924 or equivalent	

Cylinder Head Checklist

All PWHEADS “bare” cylinder heads are sold ready for assembly.

What this means is the heads are ready for the assembly process, but still MUST be checked per the following list below. This includes a visual inspection. Check all cylinders and measurements as you normally would for any engine assembly.

It is the responsibility of the assembly technician/installer to:

1) Check valves for proper seating. Lap them and check surfaces.
2) Check guide to valve stem clearance. Clearance as required.
3) Check valve guide O.D. and ensure you have the correct seals.
4) Check valve springs for coil bind height and ensure they are correct for your camshaft.
5) Check for correct installed height on valve springs. Do this with inserts installed. Shim as necessary.
6) Check for retainer to top of guide clearance. Do this with inserts installed.
7) Use a non-hardening sealer on the rocker arm studs for applications where the threads run into a port such as the Small Block Chevrolet intake.
8) After setting the guideplates in place, torque the rocker studs down to 45 lb-ft in three stages.
9) Install sensors or pipe plugs in any open external water jacket holes if applicable.
10) Don’t forget to check for proper pushrod length after heads are installed.

Any questions, please contact your engine builder or e-mail sales@performance-world.com