



Port Flow Analyzer v3.0 Performance World
 Test: PW SBF 58185A-2 www.performance-world.com
 Folder: Ford Page: 1

Head #: Bore Adapter Diameter: 4.00"
 Customer: Int Port Adapter: Radiused Inlet
 Operator: Exh Port Adapter: Short "stub stack"

Test Comments:
 PW 58185A-2 SB Ford aluminum head as cast. Note:

Report of:	Tested at	Corr to	# Vlvs	Vlv Dia	Stem Dia	Port Area
Comparing	28"	28.0"	1	2.02"	8mm	0.00 sq in
1 Cylinders	Exh: 28"	28.0"	1	1.60"	8mm	0.00 sq in

Port	Lift	L/D	Avg CFM	Cyl 1 CFM
Intake	0.100	0.050	64.0	64.0
Intake	0.200	0.099	127.2	127.2
Intake	0.300	0.149	184.5	184.5
Intake	0.400	0.198	230.5	230.5
Intake	0.500	0.248	264.2	264.2
Intake	0.600	0.297	281.9	281.9
Intake	0.700	0.347	279.2	279.2
Exhaust	0.100	0.063	55.5	55.5
Exhaust	0.200	0.125	102.6	102.6
Exhaust	0.300	0.188	142.5	142.5
Exhaust	0.400	0.250	166.2	166.2
Exhaust	0.500	0.313	177.9	177.9
Exhaust	0.600	0.375	185.5	185.5
Exhaust	0.700	0.438	188.6	188.6

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: 58185A-2
 Head Comments:
 PW 58185A-2 SB Ford aluminum head as cast.

Head Number	Customer
Intake	Exhaust
Layout: 1 valve & 1 port	Layout: 1 valve & 1 port
Valve Diameter, in 2.02"	Valve Diameter, in 1.60"
Stem Diameter, in 8mm	Stem Diameter, in 8mm
Throat Diameter, in	Throat Diameter, in
Avg Seat Angle, deg 45	Avg Seat Angle, deg 45
Port Shape: Rectangular	Port Shape: Square
Port Volume, ccs 190cc	Port Volume, ccs 63cc
Avg Port Diameter, in	Avg Port Diameter, in
Avg Port Height, in	Avg Port Height, in
Port Length, in	Port Length, in

Specifications 58185A-2

Material	A356 Aluminum
Combustion Chamber CC	58cc
Intake Port Volume CC	190cc
Intake Port Dimension	2.10" x 1.25"
Exhaust Port Volume CC	63cc
Exhaust Port Dimension	1.35" x 1.35"
Spark Plug Location	OEM
Intake Valve Diameter	2.02"
Exhaust Valve Diameter	1.60"
Valve Stem Diameter	8mm
Valve Spring Pocket I.D.	1.50"
Valve Guide Material	Manganese Bronze
Valve Guide O.D.	0.500" (.560" at base)
Rocker Stud Thread Size	7/16"x14
Valve Cover Mounting	OEM
Valve Angle	20 Degree
Valve Seat Machining	Multi-Angle
Oiling	Through Pushrod

Hydraulic Roller Cams (up to .625" lift) (Check Cam Manufacturer Recommendation)

Installed Components	Size	Brand
Intake Valves	2.02" x 4.90" x 8mm	PW #360040
Exhaust Valves	1.60" x 4.95" x 8mm	PW #360046
Valve Springs	1.47" Dual Spring	Howards #98445-1 (16pcs)
Valve Retainers	10-Degree	Comp Cams #740-16
Valve Locks	10-Degree 8mm	PW #360408
Valve Seals	8mm x .502" Viton	PW #360488
Valve Spring Locators		Comp Cams #4776-16
Rocker Arm Studs	7/16"-14 x 7/16"-24	PW #360376

Suggested Components

Head Gaskets		Fel-Pro #1011-1
Intake Gasket		Fel-Pro #1262
Exhaust Gasket		Fel-Pro #1415
Head Bolts	(7/16")	ARP #154-3605
Head Bolts	(1/2")	ARP #154-3603
Head Studs	(1/2")	ARP #154-4003
Pushrod Guide Plates	5/16" Flat	Comp #4835-8 (Adjustable)

Valves Lapped & Checked**Valve Spring Installed Height & Pressure Checked****Vacuum Tested****Spark Plugs** **Autolite 3924 (or equivalent)**

NOTE: Assembled cylinder heads are supplied without the pushrod guideplates and rocker studs installed as they require adjusting for proper rocker alignment and pushrod clearance. Use thread sealant where required.



PW Heads Installation Instructions

Thank you for purchasing PW Heads!

Please read these instructions BEFORE attempting to install your new heads. Improper installation or undue care will void your warranty and potentially cause engine damage. Ensure you have the correct tools, gaskets, fasteners and mechanical knowledge to give you a trouble-free installation. Any questions can usually be answered by the place of purchase, or at www.performance-world.com. You can also contact us directly at sales@performance-world.com.

PW Heads are available in a variety of configurations. Bare (ready for assembly) or assembled. If you purchased your heads assembled, **PLEASE ENSURE THEY ARE COMPATIBLE WITH YOUR APPLICATION.** (ie. camshaft (style and max lift), valve springs, piston to valve clearance, intake manifold, headers, etc.) It is your responsibility to check **PRIOR** to attempting installation. **Cylinder heads or components damaged due to improper application will void your warranty and potentially cause engine damage.**

Our “Assembled” heads are assembled with the components listed on the supplied Data Sheet. As specifications are subject to change, please refer to that sheet for correct information. It is recommended to keep the Data Sheet for future reference if required. Now let’s get started!

Before installation:

Gaskets: You will require head gaskets, intake manifold gaskets, exhaust gaskets and valve cover gaskets (among others) that may be specific to these heads (size etc.) Please refer to the port sizes and styles for a correct match. Head gaskets should be for aluminum head applications (Fel-Pro Performance for example) so minimal brinelling occurs.

Spark plugs:

14mm x 3/4” reach x 5/8” hex gasketed (eg. Champion #RC12YC or equivalent) Use anti-seize to prevent galling and do not overtighten (maximum 10 ft/lbs).

Rocker Arms:

PW Assembled Heads are designed for use with standard non self-aligning rocker arms. Factory style adjustable or aftermarket roller rockers are acceptable. Do not use self-aligning rocker arms (has a “guide” on the end which locates on the valve tip) as they are designed for heads without the use of guide plates.

Pushrods:

Check for correct length. Using a pushrod length checker, determine the correct length for your application. Rocker geometry **MUST** be checked to ensure the rocker contact point sits correctly on the valve tip. In many instances, a longer pushrod may be required.

Piston to Valve Clearance:

It is always recommended to check piston to valve clearance. Changes in piston design and head design can cause interference. Minimum clearance should be .100” at lift on the intake and .110” at lift on the exhaust. PW Heads for SB Ford 5.0L engines can only be used with aftermarket pistons. OE pistons can not be used with 2.02” diameter intake valves.

Piston to Dome Clearance:

PW Heads are designed for use with flat top pistons. If domed or pop-up pistons are used check to ensure there is at least .050” clearance.

Valve to Bore Clearance:

On small bore engines (engines with less than 4.00” cylinder bores), do not use a camshaft with more than .450” lift at the valve. Contact between the valve and cylinder bore may occur. If in doubt...CHECK! (this excludes LS engines with our 63240 and 69225 heads)

Valve Springs:

Our assembled heads come with valve springs intended for specific applications. Please pay attention to the notes on your Data Sheet regarding style (hydraulic flat tappet, hydraulic roller, etc.) and maximum lift. Check with the camshaft manufacturer for recommended valve springs if unsure.

Exhaust Headers:

Any OE port design style header will work with our heads. Check the Data Sheet for the port size and choose the gasket to match your application. Anti-seize is recommended on header bolts.

Head Bolts or Studs:

OE or aftermarket head bolts (as well as studs) can be used providing they are used in conjunction with hardened washers. This prevents galling on the heads. Check bolt lengths to ensure they are correct for your application. Lubricate threads and washers prior to installation.

Valve Covers:

PW Heads are designed for use with OE or aftermarket valve covers. Check rocker arm clearance as required. Some SB Chevrolet applications are equipped with both perimeter bolt or centerbolt patterns for use with early or late valve covers.

Installation:

Follow OE installation guidelines with the exception of the few notes listed.

Head gaskets with internal pre-flattened wire for aluminum heads are recommended. For any subsequent replacements, the same part number must be used to ensure a good seal.

SB Chevrolet 400 engine blocks - The drilling of "Steam holes" is entirely optional but not required. Changes in cylinder head design, and improved high flow water pumps and cooling systems negate the benefit of "steam holes". If you wish to do so, it is entirely your choice.

Apply thread sealer where required on rocker studs that intersect ports and head bolts that cross into water passages. Torque rocker studs to 45 ft/lbs.

Torque heads using the factory sequence and to the torque specified by the head bolt/stud manufacturer. Re-torque after initial start up.

Some valve spring cups may interfere with the #1 head bolt washer. You can relieve the washer where required, or remove the valve spring and cup, position the washer and re-install the valve spring and cup.

Guide Plate Alignment. Some assembled cylinder heads are supplied with the pushrod guideplates and/or rocker studs NOT installed as they do require adjusting for proper rocker to valve tip alignment and pushrod clearance. The pushrod guideplates are secured to the head with two rocker studs. The stud holes have enough clearance to adjust the guideplates for optimum alignment. Most engines will require the use of thread sealer on at least some ports - CHECK!

Install pushrods and rocker arms and adjust lash/preload according to your application.

Check for any pushrod to cylinder head clearance. Slowly rotate engine through a few revolutions to ensure the pushrods do not make any contact with the cylinder head at any point. Adjust guideplates as necessary. Re-torque any rocker stud that was adjusted to 45 ft/lbs making sure the guideplates do not move. Re-check for rocker to valve tip alignment.