2013 Product and Information Guide

Performance Parts Built for Racers…By Racers

MADE IN U.S.A

LIFETIME WARRANTY!

AFR Cylinder heads only

For Every Racing & Street Performance Application

Our mission is to manufacture the highest quality, best performing cylinder heads and intake manifolds while providing customer service beyond expectations and valuing every employee as our most important asset.










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Note: Unless specified, no product in this catalog is legal for sale or use on pollution controlled motor vehicles in the United States.

A Company Built On Performance

For over forty years Airflow Research has been defining technological leadership in cylinder head manufacturing and flow dynamics. This complete commitment to performance has enabled Airflow Research products to find themselves on the fastest race cars and the most powerful street machines in the country. As every engine builder will attest to, the secret to increasing horsepower and performance lies in the cylinder head. Airflow Research's cylinder heads outflow and out horsepower everything in their league.

Street CNC Ported Chevy Head

• Early Years - Innovation (1970-1980)

Airflow Research early years were defined by their high-powered porting of cylinder heads, innovative porting techniques such as fast burning chambers, D-shaped big block Chevy exhaust ports, Hurricane chambers, and their CNC ported heads. In 1979, AFR pioneered CNC porting with their then revolutionary tape fed CNC machine. Airflow Research quickly established itself as a premiere supplier to the fastest race teams in the country. Names like Bill Jenkins' Grumpies Toy, Bob Glidden's Fords and Chryslers, Warren Johnson, and Frank Iaconio were getting their power from AFR.

• AFR's Technological Revolution (1980-1990)

Airflow Research became a key consultant to General Motors, designing cast iron and aluminum heads for the still-popular phase 3, 4, 5, and 6 Bowtie Small Block Chevy. AFR designed the big block D port aluminum pro-stock racing head, at that time the state-of-the-art. AFR had also branched out into NASCAR, porting heads for top drivers like Darrel Waltrip, Cale Yarbrough, Richard Childress, Junior Johnson, Richard Petty, AJ Foyt, Harry Gant, and Neil Bonnet, to name a few. Airflow Research's pioneering use of wet-flow technology was allowing AFR cylinder heads to obtain unequaled flow and power.

One of Twelve Haas 5 Axis CNC Porting Machines

• Total Manufacturing (1990-Present)

Airflow Research advanced to full production of cylinder heads in the early 90's by incorporating advanced high density Cast Billet technology into their southern California facility. Now able to maintain full control of design and porting technology, AFR combined their 30 years of high performance racing experience into making heads available to a much broader customer base. For the first time, racers were able to obtain full 5-axis CNC ported racing heads at an affordable price. In the mid-90's, Airflow Research was the first to offer heads for the popular Gen-2 Small Block Chevy LT-1 and LT-4 engine programs and the The first to receive a CARB EO number for emission legal street heads. AFR also introduced the patented "Hydra Rev" to eliminate Hydraulic Roller valve float. In 2004 AFR was the first to introduce the popular Gen-3 LS1 aftermarket cylinder head.

• Into The Future

Airflow Research's design, engineering, and manufacturing technology never rests. A leader today, Airflow Research is investing in the horsepower of tomorrow with new manufacturing technology, complex dyno testing, and proprietary flow testing methods. And to assure a long standing tradition to performance, AFR is bringing up a new generation of racers and engineers to meet the demands of tomorrow's engine builders.

CAD/CAM Computer Engineered Designs

What Makes AFR Special

While Airflow Research has a great history of success in racing, it has been their ability to bring sophisticated porting technology to their wide assortment of cylinder heads that makes them truly special. Airflow Research pioneered the tooling and machinery necessary for true 5-axis CNC port machining, which allows total flow consistency from head to head once the optimal port design has been established. No other manufacturer incorporates this complete machining technology into their heads.

ESTABLISHED 1970 AIRFLOW RESEARCH

Research & Development

Cylinder head technology starts with research. That includes hundreds of hours designing and hand porting intake and exhaust ports to experiment and compare flow and horsepower characteristics. Airflow Research has tested thousands of cylinder heads over the years, for every application from top fuel dragsters to Saturday night street rods. Understanding the application and performance requirements is where AFR starts its design criteria.

Dyno & Flow Testing

To accurately evaluate port designs, AFR spends thousands of hours on engine dynos and flow rates are all compared to determine the optimal port design for specific applications. Testing does not stop in the lab; real life testing is also required. AFR has spent more than their share of time at drag strips and circle tracks to carefully measure performance results.

Superflow 600 Flow Bench

1 of 3 Mazak Twin Pallet CNC Machines

Specialized Manufacturing / Automation

Air Flow Research uses the latest in metrology technology to bring you the finest cylinder heads available today. During the manufacturing process, cylinder head castings are mounted in the machining centers and then searched for and located using optical work coordinate probing systems. This insures the most accurate location possible to begin the machining process. This eliminates the "stacked tolerance/human error" from the equation when loading and unloading cylinder heads at each work station.

Mori Seiki 32 Pallet Shuttle Cell

One of two Newen CNC Controlled Valve and Seat Machine

Quality Control

AFR uses state of the art metrology such as Browne & Sharp's Coordinate Measuring Machine (CMM). First and last articles are checked on all new set ups and breakdowns to ensure quality. We also use air gages to hold tight tolerances on all boring and honing operations, measuring down to tenths. Additionally, we practice in process lean principles throughout the facility to create a culture of each employee being responsible for the quality and visual appearance of his/her work, not just passing their work to the next department with little or no accountability. As well, we inspect all components we receive from vendors to complete the quality control loop. Lastly, there is complete documentation with SPA reports on all inspection processes.

AFR High Performance Cylinder Heads

Street Cylinder Heads

AFR offers a complete selection of street cylinder heads for Small Block Chevy and Small Block Ford engines. Whatever your application, emissions legal, street/strip trophy machine, or off-road stump puller, AFR has the perfect cylinder head for your ride. Street Heads are shipped completely assembled, 100% CNC ported intake ports, exhaust port and combustion chambers and are ready to bolt on without further modifications.

Race Ready Cylinder Heads

AFR Race Ready Cylinder heads offer outstanding performance on the track at a reasonable cost. Typically, Race Ready Heads give you 100% CNC ported exhaust ports, combustion chambers and intake ports with coarser machine levels than the competition package to provide terrific flow characteristics for big power gains. Of course, Race Ready Heads come complete and ready to run with AFR's proven components for maximum reliability.

Competition Package Cylinder Heads

AFR Competition Package Cylinder heads provide the next step up in power production for just a few extra dollars. In the Competition Heads, intake ports, exhaust ports and combustion chambers are all 100% CNC ported with finer machine levels and improved port shape details over the race ready for flow characteristics that can give the power you need to win. Competition Package Heads come complete and ready to run with AFR's proven components for maximum power and reliability.

See below what factory OEM head AFR used for CAD/CAM modeling.
Please see footnotes on page 47 and the specific product page you're researching for specific variances from OEM heads.

AFR LS1 - Was modeled after the GM LS6 #243 aluminum head.
AFR Small Block Chevy 23° - Was modeled after the GM L-98 aluminum head.
AFR Small Block Chevy 15° - Was modeled after the GM 18° aluminum head.
AFR Big Block Chevy 24° - Was modeled after the GM LS6 open chamberrectangle port castings.
AFR Renegade Small Block Ford 20° - Was modeled after the Ford GT 5.0 cast iron head.
AFR Renegade Big Block Ford 14° - Was modeled after the SCJ aluminum head.

Porters castings are availalbe upon request, please call for more information.

AFR Cylinder Heads FAQ

Competition Porting | Street/Race Ready Porting

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. Mismatch does not affect engine output.*

SBF Emissions

- 5/8"- 11 Through Hole
- Used for connecting emissions equipment (firewall side)
- Requires supplied thermactor reducer (x2) to mount alternator/accessory brackets.
- Confrim orientation of plug prior to installing cylinder head.

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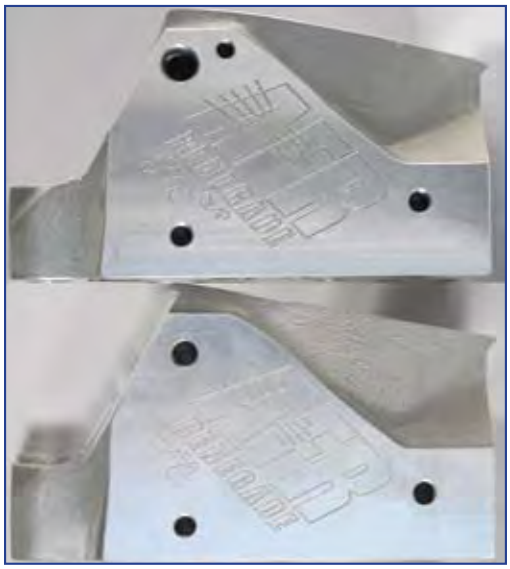

◀ ***Part #'s***
1402,1422,1420,
1426,1428,1472,
1492

▲

SBF Non-Emissions

-7/16" Blind Hole

-Used for Mounting Alternator/Accessory Brackets

SBF 195cc Competition/205cc/220cc

-Standard 2" spacing and 3" spacing for larger O.D. headers

-Factory and Aftermarket Headers

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SBF Street 165cc/185cc Exhaust Pattern

-Standard 2" spacing

-Factory and Aftermarket headers

AFR 2013
New and Upcoming Products

New Products

SBF Cylinder Head

AFR's new approach to in-line SBF heads averages 20 CFM over previous AFR models.
Pages 31-35

BBC 300cc Oval Port

Page 25

Upcoming Products

Pro Line 15° SBC

Pro Line 13.5° SBC

BBF Cylinder Head

AFR DPR Street Manifold

180cc SBC Eliminator 23° Street Head

The Small Port,High Velocity Torque Monster

The AFR Emissions Legal (versions from 1969-94 with heat riser, CARB EO #D-250-2), 180cc intake port small block Chevy cylinder heads are available in your choice of straight, or L98 angle plug versions. These heads feature a 75cc or 65cc combustion chamber with a 64cc exhaust port and a 3/4" thick head deck (ideal for nitrous or blower applications.) Standard valves are lightweight 8mm 2.020 intake and 1.600 exhaust with AFR's hardened ductile iron interlocking valve seats. The exceptional flow characteristics, ideal operating range of idle to 5500 rpm (higher rpm ranges possible depending on combination of parts), 23º valve angle, and standard valve spacing make this the perfect street head for 327 cid to 350 cid engines from 1955-86. Also available for 1987 to present engines with center bolt valve covers and 2 center intake bolts at 72º angle (AFR #0919). No special parts are required (See footnotes page 47). Dual valve cover bolt pattern is standard. Exhaust port and bolt pattern are raised .100 (3/32") over GM L98 Heads. This rarely affects header or chassis fitment.

Note: Hydraulic roller cams typically experience valve float at 6200-6400 rpm because of their fast ramp rates. AFR suggest you upgrade your springs to AFR part #8605, 1.270 O.D. with higher spring pressures and use our Patented "Hydra Rev Kit" to reduce chances of valve float associated with rpm 6200 or higher.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports, Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.020" x 4.903 O.A.L.	AFR #7251
Bead Lock Exhaust Valve, 1.600" x 4.955 O.A.L.	AFR #7250
PAC Racing Springs 1.290" OD Hydraulic Roller Dual Valve Spring, 135 lbs. on seat, .600" maximum lift Max RPM 6300-6500 (upgrades available)	AFR #8017
Manley 7º 4140 Chrome Moly Retainers	AFR #8514
7° Bead Locks Valve Keepers	AFR #9007
3/8" Rocker Studs	AFR #6410
Adjustable Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

*Only models with heat riser (marked by an asterisk) are emissions legal, all others are not legal for sale or use on pollution controlled motor vehicles in the United States.

Specifications, Features, and Optional Supporting Components

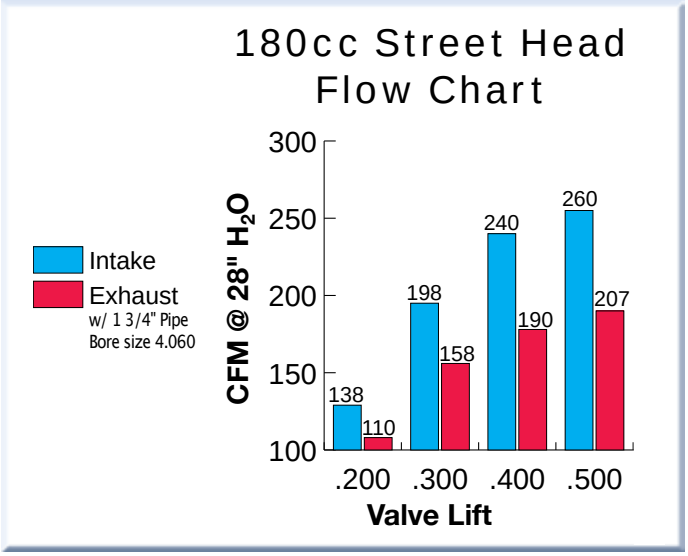
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket, 1.230" x 1.990" with 3/8" radius ---------- AFR #6817
---------- Fel-Pro #1256

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- Fel Pro #1404, AFR #6834
Head Gasket ---------- 350cid Fel Pro #1003, AFR #6800
---------- 400cid Fel Pro #1014, AFR #6802
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle GM L98 ---------- AFR #6200
Suggested Manifold ---------- Edelbrock #3701,
Spark Plug Starting Range ---------- AC FR3LS or 41629
Combustion Chambers ---------- 75cc or 65cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing ---------- Standard GM L98
Rocker Arms ---------- Standard GM L98
Valve Angle ---------- 23º
Angle Mill (milling options available) ---------- .008" per cc
Flat Mill (milling options available) ---------- .006" per cc

Note: Milling Head Deck Will Affect Flow Numbers. Angle mills might require a .120 thick intake gasket.

Pairs of Cylinder Heads			
Runner Volume	***Plug Type***	***Combustion Chamber***	***Part #***
CNC Street Porting			
*180cc	Straight	75cc	0911
*180cc	Straight	65cc	0916
*180cc	L98	75cc	0917
*180cc	L98	65cc	0918



180cc LT1 Eliminator 23° Street Head

The Small Port, High Velocity Torque Monster

The AFR Emissions Legal (CARB EO #D-250-2 for engines up to 1994), 180cc intake port LT1 small block Chevy cylinder heads are available in the LT1 angle plug version only. These heads feature a 55cc to 65cc combustion chamber with a 64cc exhaust port and a 3/4" thick head deck (ideal for nitrous or blower applications). Standard valves are lightweight 8mm 2.020 intake and 1.600 exhaust with AFR's hardened ductile iron interlocking valve seats. The exceptional flow characteristics, ideal operating range of idle to 6000 rpm (higher rpm ranges possible depending on combination of parts), 23º valve angle, and standard valve spacing make this the perfect street head for 350 cid to 383 cid engines and is specifically designed for 1992-95 Corvettes and 1993-97 Camaros. No special parts are required (See Footnotes page 47). Dual valve cover bolt pattern is standard. Exhaust port and bolt pattern are raised .100 (3/32") over GM L98 Heads. This rarely affects header or chassis fitment.

Note: Hydraulic roller cams typically experience valve float at 6200-6400 rpm because of their fast ramp rates. AFR suggests you upgrade your springs to AFR part #8605, 1.270 O.D. with higher spring pressures and use our Patented "Hydra Rev Kit" to reduce chances of valve float associated with rpm 6200 or higher.

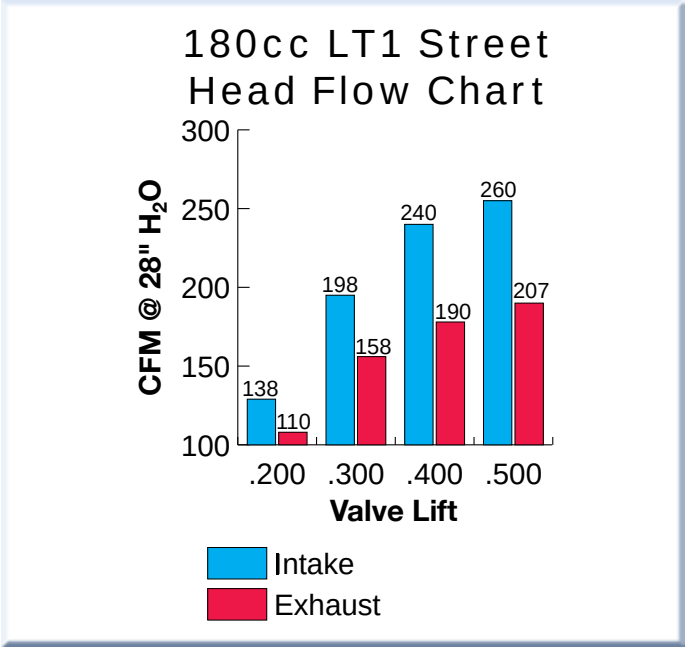
Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports, Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.020" x 4.903 O.A.L.	AFR #7251
Bead Lock Exhaust Valve, 1.600" x 4.955 O.A.L.	AFR #7250
PAC Racing Springs 1.290" OD Hydraulic Roller Dual Valve Spring 135 lbs. on seat, .600" maximum lift Max RPM 6300-6500 (upgrades available)	AFR #8017
7º Titanium Retainers	AFR #8515
7° Bead Locks Valve Keepers	AFR #9007
3/8" Rocker Studs (if using non-self aligning rockers)	AFR #6410
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

*Only models marked with an asterisk are emissions legal, all others are not legal for sale or use on pollution controlled motor vehicles in the United States.

Specifications, Features, and Optional Supporting Components

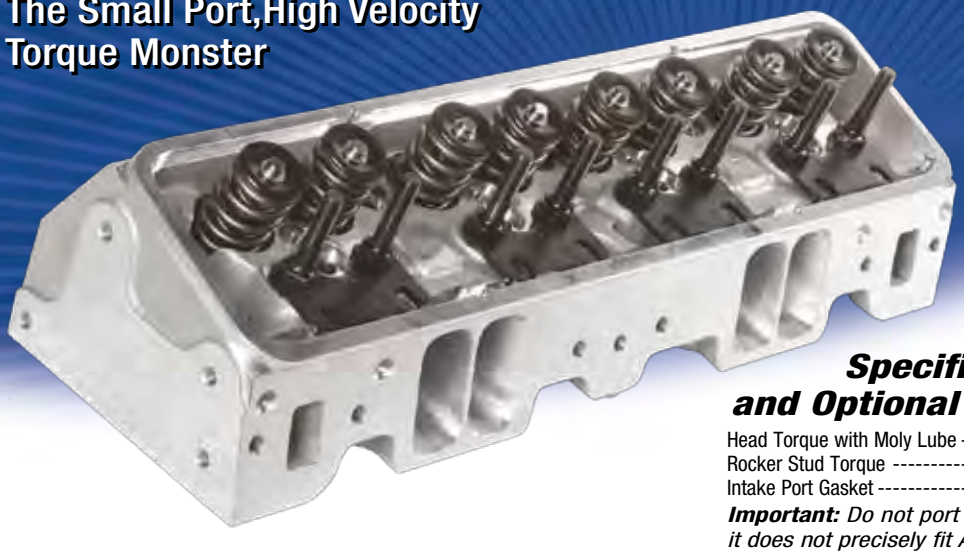
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket ---------- GM #12524653 LT1 / Fel-Pro #1284
Important: *Do not port match your intake manifold to Fel-Pro / GM LT1 gasket as it does not precisely fit AFR heads. See picture on page 6.*
Exhaust Port Gasket ---------- Fel Pro #1404, AFR #6834
Head Gasket ---------- 350 cid Fel Pro #1074, AFR #6803
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle GM L98 ---------- AFR #6200
Suggested Manifold ---------- GM LT1
Spark Plug Starting Range ---------- AC FR3LS or 41629
Combustion Chambers ---------- 55cc to 65cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing ---------- Standard GM L98
Rocker Arms ---------- Standard GM L98
Valve Angle ---------- 23º
Angle Mill ---------- .008" per cc
Flat Mill ---------- .006" per cc

Pairs of Cylinder Heads			
Runner Volume	***Plug Type***	***Combustion Chamber***	***Part #***
CNC Street Porting			
*180cc	Angle	55cc-65cc	0908



190cc SBC Eliminator Vortec 23° Street Head

The Small Port,High Velocity Torque Monster



The AFR Vortec Emissions Legal (CARB EO #D-250-2), 190cc intake port small block Chevy cylinder heads are available in straight plug version. These heads feature a 65cc combustion chamber with a 64cc exhaust port and a 3/4" thick head deck (ideal for nitrous or blower applications.) Standard valves are lightweight 8mm 2.020 intake and 1.600 exhaust with AFR's hardened ductile iron interlocking valve seats. The exceptional flow characteristics, ideal operating range of idle to 5500 rpm (higher rpm ranges possible depending on combination of parts), 23º valve angle, and standard valve spacing make this the perfect street head for 350 cid engines from 1996-2000. No special parts are required (See footnotes page 47). Dual valve cover bolt pattern is standard. Exhaust port and bolt pattern are raised .100 (3/32") over GM L98 Heads. This rarely affects header or chassis fitment.

Note: Hydraulic roller cams typically experience valve float at 6200-6400 rpm because of their fast ramp rates. AFR suggests you upgrade your springs to AFR part #8605, 1.270 O.D. with higher spring pressures and use our Patented "Hydra Rev Kit" to reduce chances of valve float associated with rpm 6200 or higher.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports, Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.020" x 4.903 O.A.L.	AFR #7251
Bead Lock Exhaust Valve, 1.600" x 4.955 O.A.L.	AFR #7250
PAC Racing Springs 1.290" OD Hydraulic Roller Dual Valve Spring, 135 lbs. on seat, .600" maximum lift Max RPM 6300-6500 (upgrades available)	AFR #8017
Manley 7º 4140 Chrome Moly Retainers	AFR #8514
7° Bead Locks Valve Keepers	AFR #9007
3/8" Rocker Studs	AFR #6410
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

*Only models with heat riser (marked by an asterisk) are emissions legal, all others are not legal for sale or use on pollution controlled motor vehicles in the United States.

Specifications, Features, and Optional Supporting Components

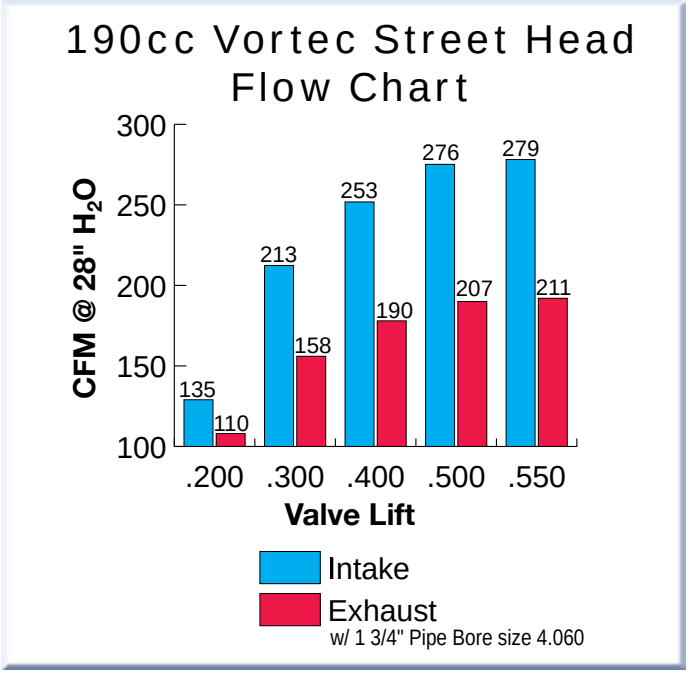
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket ---------- GM Vortec

Important: *Do not port match your intake manifold to GM gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- Fel Pro #1404, AFR #6834
Head Gasket ---------- 350cid Fel Pro #1003, AFR #6800
---------- 400cid Fel Pro #1014, AFR #6802
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle GM L98 ---------- AFR #6200
Suggested Manifold ---------- GM Vortec or Edelbrock
Spark Plug Starting Range ---------- AC FR3LS or 41629
Combustion Chambers ---------- 65cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing ---------- Standard GM L98
Rocker Arms ---------- Standard GM L98
Valve Angle ---------- 23º
Angle Mill (milling options available) ---------- .008" per cc
Flat Mill (milling options available) ---------- .006" per cc
Pushrods ---------- 5/16" Hardened AFR #6600 & #6601

Note: Flat and Angle mills might require a .120 thick intake gasket.

Pairs of Cylinder Heads			
Runner Volume	***Plug Type***	***Combustion Chamber***	***Part #***
CNC Street Porting			
*190cc	Vortec	65cc	0912



195cc SBC Eliminator 23° Street Head

The Ultimate Bolt-on Emissions Legal Street Weapon

V-2 Version

The AFR Emissions Legal (versions from 1969-94 with heat riser, CARB EO #D-250-2), 195cc intake port small block Chevy cylinder heads are available in your choice of straight, or L98 angle plug versions. These heads feature a 75cc or 65cc combustion chamber with a 64cc exhaust port and a 3/4" thick head deck (ideal for nitrous or blower applications). Standard valves are lightweight 8mm 2.050 intake (comp package has 2.080) and 1.600 exhaust with AFR's hardened ductile iron interlocking valve seats. The exceptional flow characteristics, ideal operating range of 2000 rpm to 6500 rpm, 23º valve angle, and standard valve spacing make this the perfect street head for 350 cid to 400 cid engines from 1955-86. Available for 1987 to present engines with center bolt valve covers and 2 center intake bolts at 72º angle AFR part# 1041. No special parts are required (see footnotes page 47). Dual valve cover bolt pattern is standard. Exhaust port and bolt pattern are raised .100 (3/32") over GM L98 Heads. This rarely affects header or chassis fitment.

Note: Hydraulic roller cams typically experience valve float at 6200-6400 rpm because of their fast ramp rates. AFR suggests you upgrade your springs to AFR part #8605, 1.270 O.D. with higher spring pressures and use our Patented "Hydra Rev Kit" to reduce chances of valve float associated with rpm 6200 or higher.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers, 100% CNC Ported Exhaust Ports, 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.050" x 4.903 O.A.L. Bead Lock Intake Valve, 2.080" x 4.903 O.A.L.	AFR #7252 Comp PKG #7259
Bead Lock Exhaust Valve, 1.600" x 4.955 O.A.L.	AFR #7250
PAC Racing Springs 1.290" OD Hydraulic Roller Dual Valve Spring with 135 lbs. on seat, .600" maximum lift Max RPM 6300-6500	Street Head AFR #8017
1.270" OD Hydraulic Roller Valve Spring with dampener,155 lbs. on seat, .650" maximum lift, Max RPM 7000-7200	Comp PKG AFR #8019
Manley 7º 4140 Chrome Moly Retainers	AFR #8514
7º Bead Locks Valve Keepers	AFR #9007
3/8" Rocker Studs	AFR #6410
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

Specifications, Features, and Optional Supporting Components

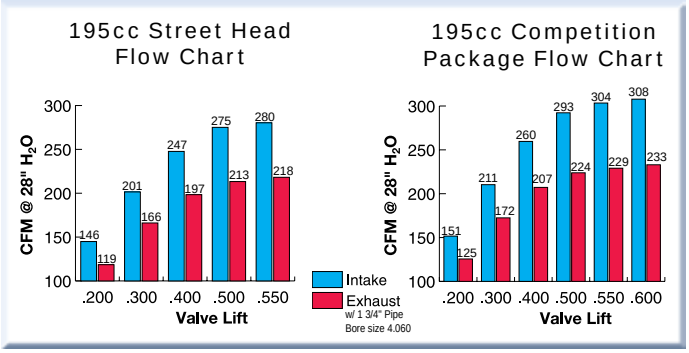
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket, 1.280" x 2.090" with 3/8" radius Street ---------- AFR #6810
---------- Fel-Pro #1205
Intake Port Gasket, 1.310" x 2.180" w/ 3/8" radius Comp Pkg ---------- AFR #6820
---------- Fel-Pro #1206

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- Fel Pro #1404, AFR #6834
Head Gasket ---------- 350cid Fel Pro #1003, AFR #6800
---------- 400cid Fel Pro #1014, AFR #6802
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle GM L98 ---------- AFR #6200
Suggested Manifold ---------- AFR TXS or DPR, AFR #4802 or 4804
Spark Plug Starting Range ---------- AC FR3LS or 41629
Combustion Chambers ---------- 65cc or 75cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing ---------- Standard GM L98
Rocker Arms ---------- Standard GM L98
Valve Angle ---------- 23º
Angle Mill (milling options available) ---------- .008" per cc
Flat Mill (milling options avaiable) ---------- .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Heads			
Runner Volume	**Plug Type**	**Combustion Chamber**	**Part #**
CNC Street Porting			
*195cc	Straight	65cc	1034
*195cc	Straight	75cc	1036
*195cc	L98	75cc	1038
*195cc	L98	65cc	1040
CNC Competition Package Street Porting			
*195cc	L98	75cc	1094
*195cc	L98	65cc	1095



195cc LT1/LT4 Eliminator 23° Street Head

The Ultimate Bolt-on Emissions Legal Street Weapon

The AFR Emissions Legal (CARB EO #D-250-2 for engines up to 1994), 195cc intake port LT4 small block Chevy cylinder heads are available in an LT4 angle plug version. These heads feature a 55cc to 65cc combustion chamber with a 64cc exhaust port and a 3/4" thick head deck (ideal for nitrous or blower applications). Standard valves are lightweight 8mm 2.050 intake (comp package has 2.080) and 1.600 exhaust with AFR's hardened ductile iron interlocking valve seats. The exceptional flow characteristics, ideal operating range of 2500 rpm to 6500 rpm (higher rpm ranges possible depending on combination of parts), 23º valve angle, and standard valve spacing make this the perfect street head for 350 cid to 383 cid engines. Designed specifically for 1996 Corvettes or LT4 manifold users. No special parts are required (see footnotes page 47). Dual valve cover bolt pattern is standard. Exhaust port and bolt pattern are raised .100 (3/32") over GM L98 Heads. This rarely affects header or chassis fitment.

Note: Hydraulic roller cams typically experience valve float at 6200-6400 rpm because of their fast ramp rates. AFR suggests you upgrade your springs to AFR part #8605, 1.270 O.D. with higher spring pressures and use our Patented "Hydra Rev Kit" to reduce chances of valve float associated with rpm 6200 or higher.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports, Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.050" x 4.903 O.A.L. Bead Lock Intake Valve, 2.080" x 4.903 O.A.L.	AFR #7252 Comp PKG #7259
Bead Lock Exhaust Valve, 1.600" x 4.955 O.A.L.	AFR #7250
PAC Racing Springs 1.290" OD Hydraulic Roller Dual Valve Spring with 135 lbs. on seat, .600" maximum lift Max RPM 6300-6500	Street Head AFR #8017
1.270" OD Hydraulic Roller Valve Spring with dampener, 155 lbs. on seat, .650" maximum lift, Max RPM 7000-7200	Comp PKG AFR #8019
7º Titanium Retainers	AFR #8515
7° Bead Locks Valve Keepers	AFR #9007
3/8" Rocker Studs	AFR #6410
Adjustable 5/16" Guide Plates (if using non-self aligning rockers)	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

*Only models marked with an asterisk are emissions legal, all others are not legal for sale or use on pollution controlled motor vehicles in the United States.

Specifications, Features, and Optional Supporting Components

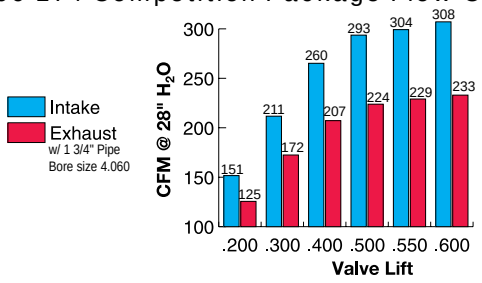
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket ---------- 195cc Street GM LT4 #12528884
Intake Port Gasket ---------- 195 Comp Pkg AFR #6860

Important: *Do not port match your intake manifold to GM LT4 gasket as it does not precisely fit AFR heads. Don't use GM# 12367777*
See picture on page 6.

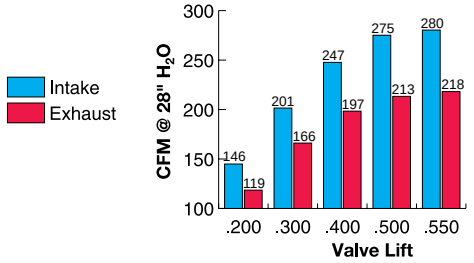
Exhaust Port Gasket ---------- Fel Pro #1404, AFR #6834
Head Gasket ---------- 350 cid Fel Pro #1074, AFR #6803
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle GM L98 ---------- AFR #6200
Suggested Manifold ---------- GM LT4
Spark Plug Starting Range ---------- AC FR3LS or 41629
Combustion Chambers ---------- 55cc to 65cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing ---------- Standard GM L98
Rocker Arms ---------- Standard GM L98
Valve Angle ---------- 23º
Angle Mill ---------- .008" per cc
Flat Mill ---------- .006" per cc

Pairs of Cylinder Heads			
Runner Volume	***Plug Type***	***Combustion Chamber***	***Part #***
CNC Street Porting			
*195cc	Angle	55cc-65cc	1031
CNC Competition Package Street Porting			
*195cc	Angle	55cc-65cc	1039

195cc LT4 Competition Package Flow Chart

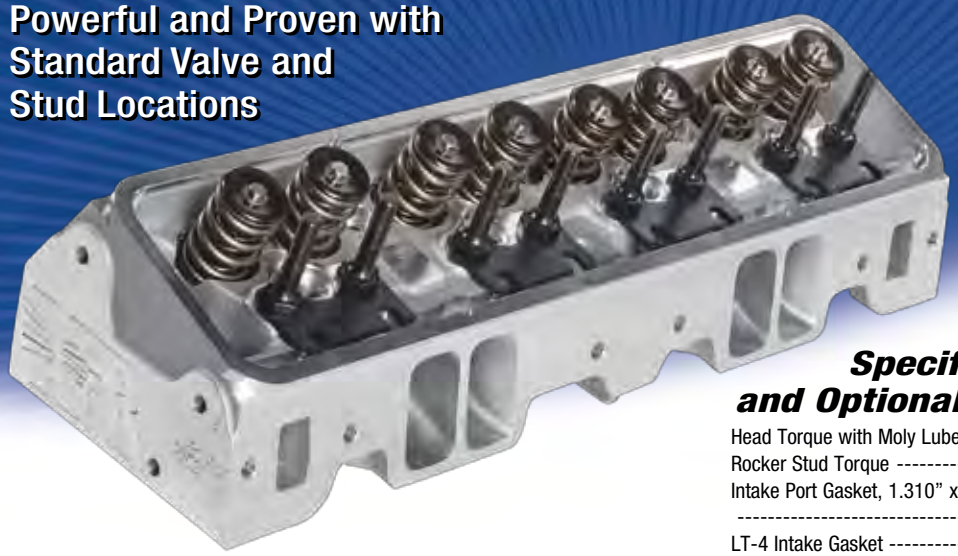


195cc LT4 Street Head Flow Chart



210cc SBC Eliminator 23º Racing Head & 210cc SBC LT-4

Powerful and Proven with Standard Valve and Stud Locations



V-2 Version

These reasonably priced AFR 210cc intake port small block Chevy angle plug cylinder heads are available in two stages of performance. The Race Ready version features 100% CNC ported intakes while the higher flowing Competition version features 100% CNC ported intakes with greater detail. Both come with 100% CNC ported combustion chambers and 80cc exhaust ports with a 3/4" thick head deck (ideal for nitrous or blower applications). Standard valves are lightweight 8mm 2.080 intake and 1.600 exhaust with AFR's hardened ductile iron interlocking valve seats. The exceptional flow characteristics, 23º valve angle, and standard valve spacing make this the perfect head for 350 to 400 cid engines in bracket drag cars, sportsman oval trackers, and highly modified street class cars operating between 3000 and 7500 rpm. No special parts are required (see footnotes page 47). Dual valve cover bolt pattern is standard. Exhaust port and bolt pattern are raised .250 (1/4") over GM L98 head. This rarely affects header or chassis fitment.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports, Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.080" x 5.006 O.A.L.	AFR #7255
Bead Lock Exhaust Valve, 1.600" x 5.024 O.A.L.	AFR #7254
PAC Racing Springs 1.550" OD Solid Roller Dual Valve Spring 225 lbs. on seat, .710" maximum lift Max RPM 6300-6500 (upgrades available)	AFR #8000
Manley 10º 4140 Chrome Moly Retainers	AFR #8511
10º Bead Locks Valve Keepers	AFR #9009
ARP 7/16" Rocker Studs	AFR #6405
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Seat	AFR #8048
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

Not legal for sale or use on pollution controlled motor vehicles in the United States.

Specifications, Features, and Optional Supporting Components

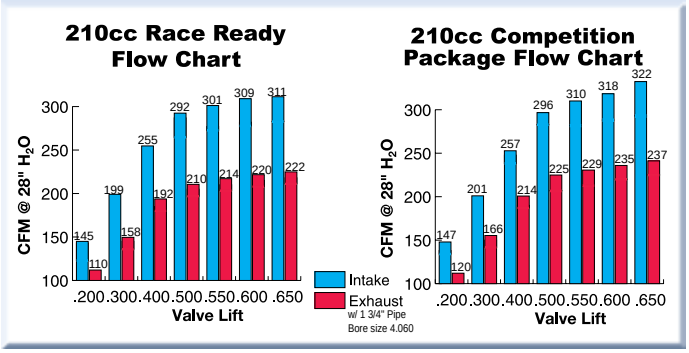
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket, 1.310" x 2.180" with 3/8" radius ---------- AFR #6820
---------- Fel-Pro #1206
LT-4 Intake Gasket ---------- AFR #6860

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- Fel Pro #1405, AFR #6835
Head Gasket ---------- 350cid Fel Pro #1003, AFR #6800
---------- 400cid Fel Pro #1014, AFR #6802
LT-4 Head Gasket ---------- Fel-Pro #1074 AFR #6803
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle GM L98 ---------- AFR #6200
Suggested Manifold ---------- AFR TXR or TXS, AFR #4801 & #4802, LT-4
Spark Plug Starting Range ---------- Autolite 3910
Combustion Chambers (LT-4 55-65cc) ---------- 65cc or 75cc
Spring Pocket can be cut to 1.750, no deeper.
Valve Spacing ---------- Standard GM L98
Rocker Arms ---------- Standard GM L98
Valve Angle ---------- 23º
Angle Mill (milling options available) ---------- .008" per cc
Flat Mill (milling options available) ---------- .006" per cc

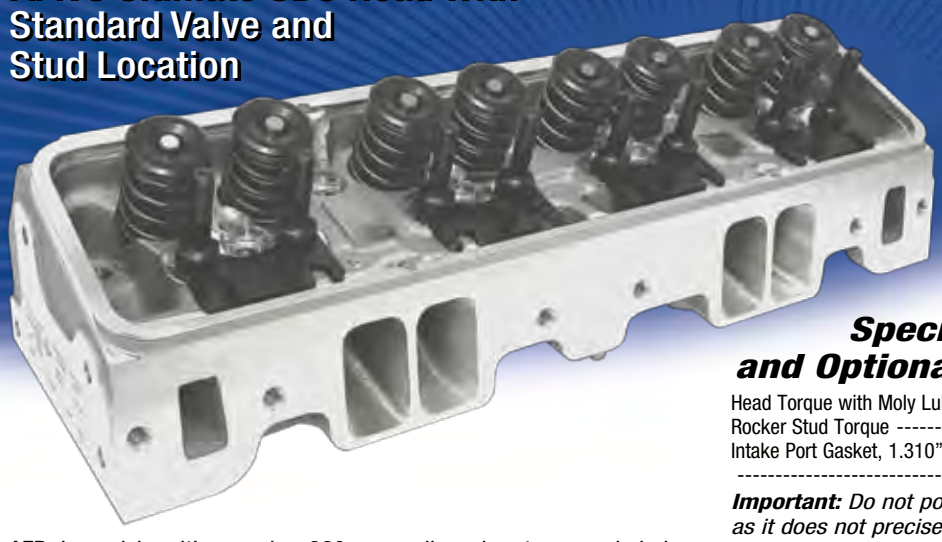
Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Heads			
Runner Volume	***Plug Type***	***Combustion Chamber***	***Part #***
Race Ready CNC Strip Porting			
210cc	Angle	75cc	1050
210cc	Angle	65cc	1054
210cc	LT1/LT4	Reverse Cooled 55cc - 65cc	1057
Competition CNC Strip Porting			
210cc	Angle	75cc	1100
210cc	LT4	Reverse Cooled 55cc - 65cc	1101
210cc	Angle	65cc	1103



220cc SBC Eliminator 23° Racing Head

AFR's Ultimate SBC Head With Standard Valve and Stud Location



AFR is reviving it's popular 220cc moniker due to overwhelming requests from customers for a larger bolt on standard valve location head. Unlike the previous 220, the new Eliminator version requires no special parts (see footnotes page 47). Valves and studs are in stock GM L98 locations just like our very popular 180, 195, and 210 series heads. They do not require offset rockers of any kind yet are still able to muster flow numbers that are in raised runner head territory. A 329 CFM head that is perfect for someone wanting to retain all their standard components while still having the airflow necessary to approach the elusive 700 HP mark in aggressive drag race trim. Displacement ranging from a high RPM 350 to a 427 CID with natural applications in the various sportsman classes, bracket/drag cars, oval track, and larger displacement street machines with typical operating ranges between 4000 to 8000 RPM depending on application. Getting this much flow from a stock geometry 23' head is an extremely impressive accomplishment. As always they come with AFR's trademark ¾" thick head deck (ideal for nitrous and blower applications). Standard valves are lightweight 8mm 2.100 intake and 1.600 exhaust with AFR's harden ductile iron interlocking valve seats. Dual valve cover bolt pattern is standard. Exhaust port and bolt pattern are raised .250 (1/4") over GM L98 head. This rarely affects header or chassis fitment.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports, Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.100" x 5.006 O.A.L.	AFR #7256
Bead Lock Exhaust Valve, 1.600" x 5.024 O.A.L.	AFR #7254
PAC Racing Springs 1.550" OD Solid Roller Dual ValveSpring 225 lbs. on seat, .710" maximum lift Max RPM 7200-7400 (upgrades available)	AFR #8000
Manley 10º 4140 Chrome Moly Retainers	AFR #8511
10º Bead Locks Valve Keepers	AFR #9009
ARP 7/16" Rocker Studs	AFR #6405
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Seat	AFR #8048
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

Not legal for sale or use on pollution controlled motor vehicles in the United States.

Specifications, Features, and Optional Supporting Components

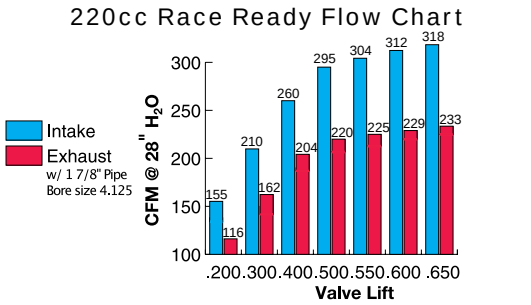
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket, 1.310" x 2.180" with 3/8" radius ---------- AFR #6820
---------- Fel-Pro #1206

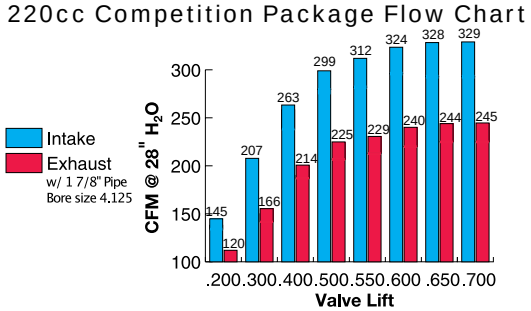
Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- Fel Pro #1405, AFR #6835
Head Gasket ---------- 350cid Fel Pro #1003, AFR #6800
---------- 400cid Fel Pro #1014, AFR #6802
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle GM L98 ---------- AFR #6200
Suggested Manifold ---------- AFR TXR, AFR #4801
Spark Plug Starting Range ---------- Autolite 3910
Combustion Chambers ---------- 65cc or 75cc
Spring Pocket can be cut to 1.750, no deeper.
Valve Spacing ---------- Standard GM L98
Rocker Arms ---------- Standard GM L98
Valve Angle ---------- 23º
Angle Mill (milling options available) ---------- .008" per cc
Flat Mill (milling options available) ---------- .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Head			
Runner Volume	***Plug Type***	***Combustion Chamber***	***Part #***
Race Ready CNC Strip Porting			
220cc	Angle	75cc	1112
220cc	Angle	65cc	1110
Competition CNC Strip Porting			
220cc	Angle	75cc	1066
220cc	Angle	65cc	1065





227cc SBC Eliminator 23º Racing Head & 227cc SBC LT-4

Timeless Design - The First In Our Line with 60/40 Valve Spacing

V-2 Version

High flowing AFR 227cc intake port small block Chevy angle plug cylinder heads are available in two stages of performance. The Race Ready version features 100% CNC ported intakes while the higher flowing Competition version features 100% CNC ported intakes with greater detail. Both come with 100% CNC ported 65 or 75cc combustion chambers and 80cc exhaust ports with a 3/4" thick head deck (ideal for nitrous or blower applications). In addition we also offer the "as cast" Stage 1 heads for 227cc performance on a budget. Standard valves are lightweight 8mm 2.100 intake and 1.600 exhaust with AFR's hardened ductile iron interlocking valve seats. The 227 has 60/40 valve spacing and piston valve pockets should be checked. The exceptional flow characteristics and 23º valve angle make this the perfect head for 350 to 434 cid engines in drag cars, sprint cars, and late model oval trackers operating from 4500 rpm and up. The 227cc heads are available in either standard or spread port exhaust. If you choose to run stud girdles, AFR offset girdles are required. These heads require shaft mount rockers or .050 offset intake rocker arms for durability and reliability of valve train components. With the .050 offset the intake rocker arm will be at a slight angle and the roller tip will not be perfectly parallel or centered on the valve tip. Not recommended for street use, unless shaft mount rockers are used. The exhaust port and bolt pattern are raised .250 (1/4") over GM L98 head. This rarely affects header or chassis fitment. (see footnotes page 47)

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports, Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.100" x 5.006 O.A.L.	AFR #7256
Bead Lock Exhaust Valve, 1.600" x 5.024 O.A.L.	AFR #7254
PAC Racing Springs 1.550" OD Solid Roller Dual Valve Spring 225 lbs. on seat, .710" maximum lift Max RPM 7200-7400 (upgrades available)	AFR #8000
Manley 10º 4140 Chrome Moly Retainers	AFR #8511
10º Bead Locks Valve Keepers	AFR #9009
ARP 7/16" Rocker Studs	AFR #6405
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Seat	AFR #8048
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

Not legal for sale or use on pollution controlled motor vehicles in the United States.

Specifications, Features, and Optional Supporting Components

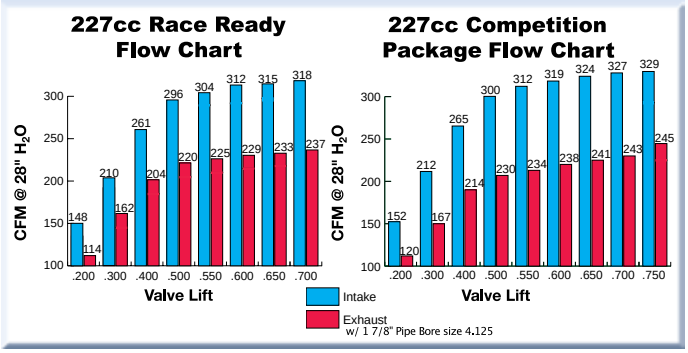
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket, 1.310" x 2.180" with 3/8" radius ---------- AFR #6820
---------- Fel-Pro #1206
LT-4 Intake Gasket ---------- AFR #6860

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- Fel Pro #1405, AFR #6835
Head Gasket ---------- 350cid Fel Pro #1003, AFR #6800
---------- 400cid Fel Pro #1014, AFR #6802
LT-4 Head Gasket ---------- Fel-Pro #1074 AFR #6803
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle AFR Offset ---------- AFR #6208
Suggested Manifold ---------- AFR TXR, AFR #4801, LT-4
Spark Plug Starting Range ---------- Autolite 3910
Combustion Chambers (LT-4 55-65cc) ---------- 65cc or 75cc
Spring Pocket can be cut to 1.680 O.D., no deeper.
Valve Spacing ---------- 60/40
Rocker Arms T&D .450 offset ---------- Shaft Mount
Valve Angle ---------- 23º
Angle Mill (milling options available) ---------- .008" per cc
Flat Mill (milling options available) ---------- .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Head			
Runner Volume	Plug Type	Combustion Chamber	Part #
Race Ready CNC Strip Porting			
227cc	Angle	75cc	1067
227cc	Angle	65cc	1068
227cc	LT4	Reverse Cooled 55-65cc	1076
Competition CNC Strip Porting			
227cc	Angle	75cc	1120
227cc	Angle	65cc	1121
227cc	LT4	Reverse Cooled 55-65cc	1126



235cc SBC Eliminator 23° Racing Head

Our Largest and Most Powerful 60/40 Head

With the price of big displacement SBC engines, a fraction of what they were years ago, the allure to go BIG is stronger than ever. To help quench the thirst of that large displacement monster AFR is proud to offer our largest direct bolt on 23° Chevy head yet. At 235 cc's, anything under 400 inches can look the other way. It has the same geometry as our 227 head and will accept all the same rocker arms, stud girdles, etc. If you choose to run stud girdles, AFR offset girdles are required. These heads require shaft mount rockers or .050 offset intake rocker arm for durability and reliability of valve train components. With the .050 offset the intake rocker arm will be at a slight angle and the roller tip will not be perfectly parallel or centered on the valve tip. It will feature a larger 2.125 diameter intake valve. Exhaust valve diameter stays the same with a little more flow from its larger runner volume. The big news is our all new intake port design which pushes this standard location intake port over 340 CFM's! That's 18° territory and this head should be able to generate power figures that rival those heads (725+ HP). This head is not for every large displacement combination so if you're unsure whether this is the right AFR head for you, we always encourage you to contact us directly. The exhaust port and bolt pattern are raised .250 (1/4") over GM L98 head. This rarely affects header or chassis fitment. See footnotes page 47 for additional information.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports, Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.125"x 5.006 O.A.L.	AFR #7253
Bead Lock Exhaust Valve, 1.600" x 5.024 O.A.L.	AFR #7254
PAC Racing Springs 1.550" OD Solid Roller Dual Valve Spring 225 lbs. on seat, .710" maximum lift Max RPM 7200-7400 (upgrades available)	AFR #8000
Manley 10º 4140 Chrome Moly Retainers	AFR #8511
10º Bead Locks Valve Keepers	AFR #9009
ARP 7/16" Rocker Studs	AFR #6405
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Seat	AFR #8048
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

Not legal for sale or use on pollution controlled motor vehicles in the United States.

Specifications, Features, and Optional Supporting Components

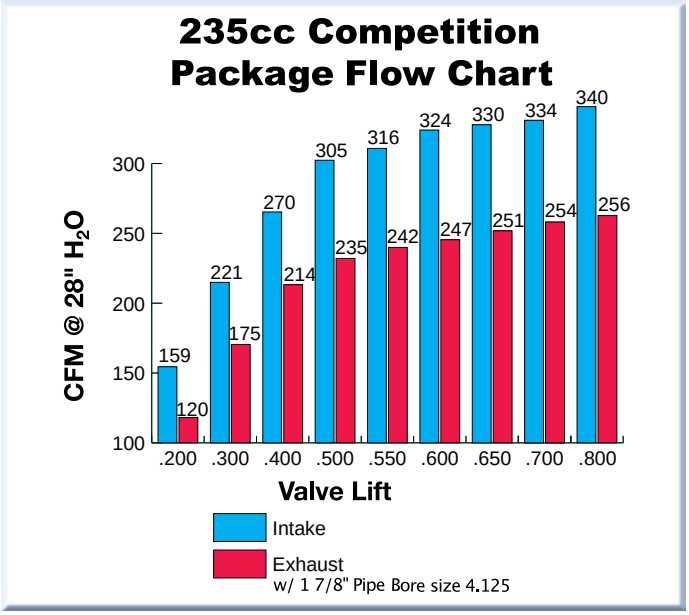
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket, 1.310" x 2.180" with 3/8" radius ---------- AFR #6820
---------- Fel-Pro #1206

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- Fel Pro #1405, AFR #6835
Head Gasket ---------- 350cid Fel Pro #1004, AFR #6801
---------- 400cid Fel Pro #1014, AFR #6802
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle AFR Offset ---------- AFR #6208
Suggested Manifold ---------- AFR TXR, AFR #4801
---------- AFR #5031 & #5033
Spark Plug Starting Range ---------- Autolite 3910
Combustion Chambers ---------- 70cc or 80cc
Spring Pocket can be cut to 1.680 O.D., no deeper.
Valve Spacing ---------- 60/40
Rocker Arms T&D .450 offset ---------- Shaft Mount
Valve Angle ---------- 23º
Angle Mill (milling options available) ---------- .008" per cc
Flat Mill (milling options available) ---------- .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Heads			
Runner Volume	***Plug Type***	***Combustion Chamber***	***Part #***
Competition CNC Strip Porting			
235cc	Angle	80cc	1130
235cc	Angle	70cc	1132



245cc SBC Eliminator 23° NPP™ Racing Head

Performance Like A Raised Runner Head

AFR is proud to introduce our new 245 NPP. This exciting new product represents our best flowing 23' SBC head to date and while the flow numbers may reflect a very good 18' head of the past, this head is still a conventional direct bolt on non-raised runner intake port configuration. It will drop on your 23' shortblock as easily as our 227 or 235 SBC product and in fact shares identical valve centerlines and rocker stud locations to both of those heads. However, unlike the 227 and the 235 heads, this product will not accept stud mount style rockers and a shaft mount rocker system with a .180 offset intake lifter is required. Larger diameter 3/8" pushrods fit without additional clearancing. This is primarily due to the fact we enlarged and widened the pushrod pinch removing that chokepoint in the entrance of the intake allowing us to design a port with a more direct shot at the back of the valve that also has a more consistent cross sectional area and velocity profile. The NPP is an abbreviation for "no pushrod pinch" btw and if you were thinking about purchasing our 235s and were going to invest in a shaft mount system anyway, the 245's may very well be a better purchase for you depending on the displacement and RPM range of the engine in question. This head has the same size valves as our popular and very successful 235 program which features a 2.125 intake valve and a 1.600 semi-tulip exhaust. This head is best suited on max effort applications, but very large pump gas engines (427+ CID) could also consider this product if the application warranted it and of course the build had the budget to allow the purchase of a shaft rocker system. If you are unsure whether this is the right AFR head for you, we encourage you to contact us directly to discuss your combination. The exhaust port and bolt pattern are raised .250 (1/4") over GM L98 head. This rarely affects header or chassis fitment. See footnotes page 47 for additional information.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports, Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.125" x 5.006 O.A.L.	AFR #7253
Bead Lock Exhaust Valve, 1.600" x 5.024 O.A.L.	AFR #7254
PAC Racing Springs 1.550" OD Solid Roller Dual Valve Spring Pac #1225 250 lbs. on seat, .800" maximum lift, Max RPM 8300-8500 (upgrades available)	AFR #8001
Manley 10° 4140 Chrome Moly Retainers	AFR #8511
10° Bead Locks Valve Keepers	AFR #9009
Viton Valve Seals	AFR #6612
Hardened Spring Seat	AFR #8048
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9070
Bronze Valve Guides	AFR #9051

Not legal for sale or use on pollution controlled motor vehicles in the United States.

Specifications, Features, and Optional Supporting Components

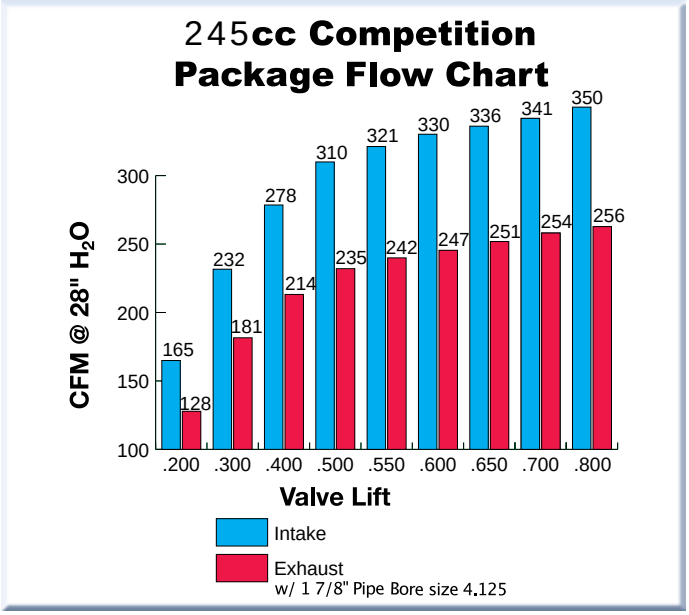
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket, 1.310" x 2.180" with 3/8" radius ---------- AFR #6820
---------- Fel-Pro #1206

***Important:** Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

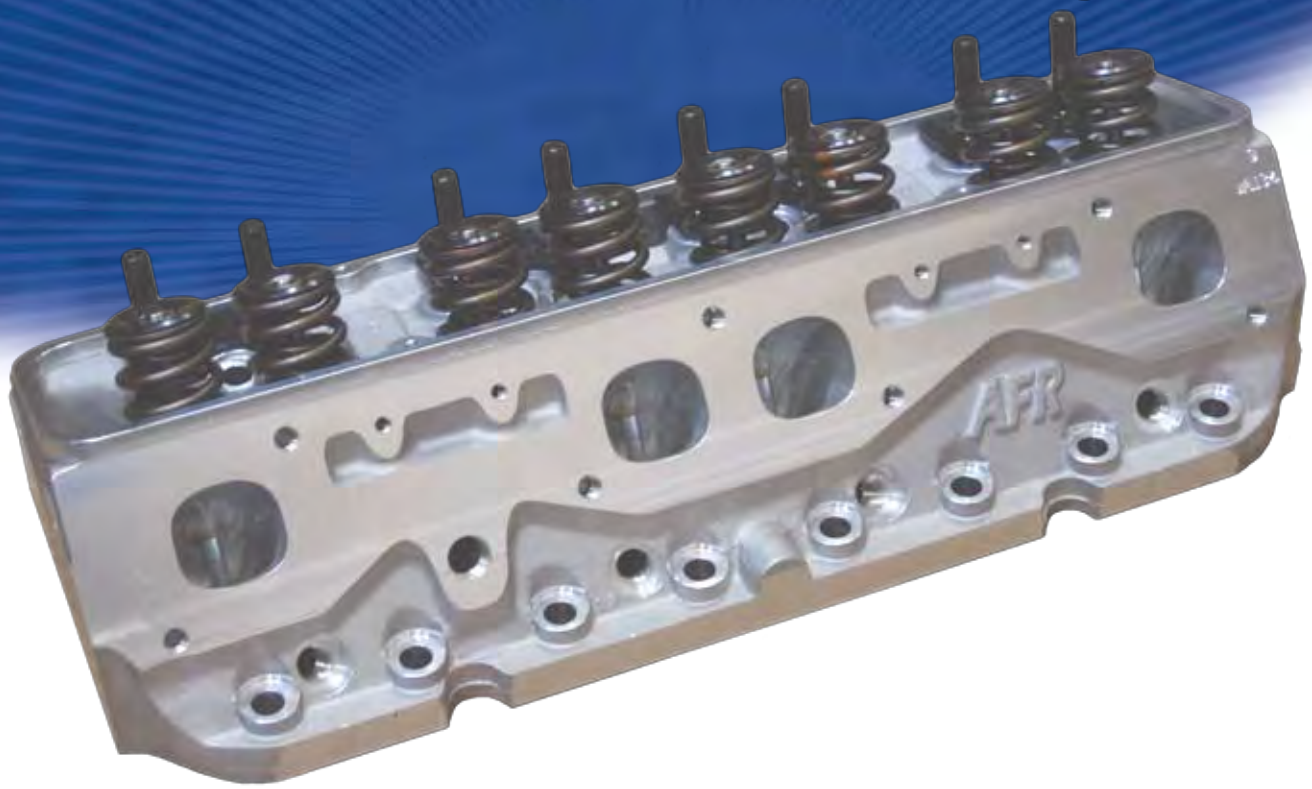
Exhaust Port Gasket ---------- Fel Pro #1405, AFR #6835
Head Gasket ---------- 350cid Fel Pro #1004, AFR #6801
---------- 400cid Fel Pro #1014, AFR #6802
Head Bolts & Studs ---------- Standard ARP, AFR #6310 & #6305
Head Bolt Washers ---------- Manley, AFR #6320
Suggested Manifold ---------- AFR TXR, AFR #4801
---------- AFR #5031, #5036, #5033
Spark Plug Starting Range ---------- Autolite 3910
Combustion Chambers ---------- 70cc or 80cc
Spring Pocket can be cut to 1.680 O.D., no deeper.
Valve Spacing ---------- 60/40
Shaft Mount Rocker Arms ------ T&D .450 offset w/.180 offset lifter - T&D .550 offset w/ standard lifter
Valve Angle ---------- 23°
Angle Mill (milling options available) ---------- .008" per cc
Flat Mill (milling options available) ---------- .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket

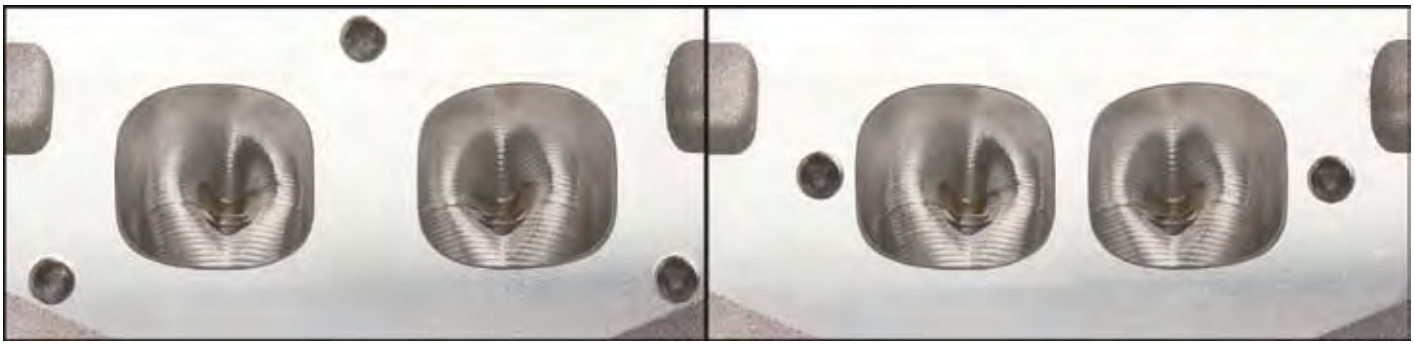
Pairs of Cylinder Heads			
Runner Volume	***Plug Type***	***Combustion Chamber***	***Part #***
Competition CNC Strip Porting			
245cc	Angle	80cc	1138
245cc	Angle	70cc	1137



210, 220, 227, 235cc SBC Eliminator 23° SPREAD PORT Racing Heads



SPREAD PORT EXHAUST **STANDARD EXHAUST**



Spread port heads have the center exhaust ports spread apart 5/8" over stock L98 GM heads. The reason for spread port heads is to achieve additional cooling in the center of the head where the heat concentration is greatest. As standard headers do not fit, spread port headers are required since the center ports are spread further apart then stock GM products. The increased spacing on the exhaust port also requires the use of exhaust gasket Fel-Pro #1409. Spread port heads only come with a Stahl bolt pattern. AFR's spread port head has all the benefits and features of AFR's standard head. As all benefits and features are the same, please review respective page for product details (i.e. for 210cc spread port, view page 16 on SBC Eliminator 210cc).

Pairs of Cylinder Heads			
Runner Volume	***Plug Type***	***Exhaust Type/ Combustion Chamber***	***Part #***
Race Ready CNC Strip Porting			
210cc	Angle	Spread Port 65cc	1059
210cc	Angle	Spread Port 75cc	1055
227cc	Angle	Spread Port 65cc	1074
227cc	Angle	Spread Port 75cc	1075
Competition CNC Strip Porting			
210cc	Angle	Spread Port 65cc	1106
210cc	Angle	Spread Port 75cc	1105
220cc	Angle	Spread Port 65cc	1114
220cc	Angle	Spread Port 75cc	1115
227cc	Angle	Spread Port 65cc	1124
227cc	Angle	Spread Port 75cc	1125
235cc	Angle	Spread Port 70cc	1134
235cc	Angle	Spread Port 80cc	1136
245cc	Angle	Spread Port 70cc	1139
245cc	Angle	Spread Port 80cc	1140

210cc LSX Mongoose Street Head

The Small Port, High Velocity Torque Monster

Designed Specifically for 3.900 Bore

V-2 Version

For the ultimate street LS1/LS2/LS6 aluminum cylinder head AFR's all new 210cc emission legal cylinder heads E/O # D250-4 are your only choice. Specifically designed for 1997 to present Gen-3 Chevy Corvettes, Camaros, and trucks. AFR's LS1 head offers unmatched flow performance (302 CFM at .600lift) and features 2.020 intake and 1.600 exhaust valves with AFR's iron ductile interlocking valve seats. With only 210cc port volume (same as stock LS1 head) this is an incredible 70 CFM increase over stock casting creating unbelievable port velocity and performance. The 210cc is ideal for normally aspirated 346C.I. to 396C.I. It is available with 66cc combustion chambers. AFR's LS1 is a direct bolt on, no special parts required (see footnotes page 47). Structural features like Air Flow Research's trademark 3/4" thick head deck, a must for blown and nitrous applications, reinforced rocker stud bosses, and thick wall runners provide unparalleled durability. An exclusive new modern combustion chamber design with double quench pad area helps the LS1 generate huge low and mid lift airflow numbers. If you need a snake charmer for that pesky neighborhood "Cobra Mustang" look no further.

Note: Hydraulic roller cams in "LS" Gen III engines typically experience valve float at 6600-6800 RPM's. If you are using after market rocker arms valve float will become prominent and AFR highly recommends upgrading to our #8019 springs. If you plan on running over .600 gross valve lift and/or 6600 RPM, AFR suggests you upgrade your springs to AFR part #8019. Our upgrade spring has higher seat and open pressures (155/410+) to better reduce the risk of valve float in more aggressive applications.

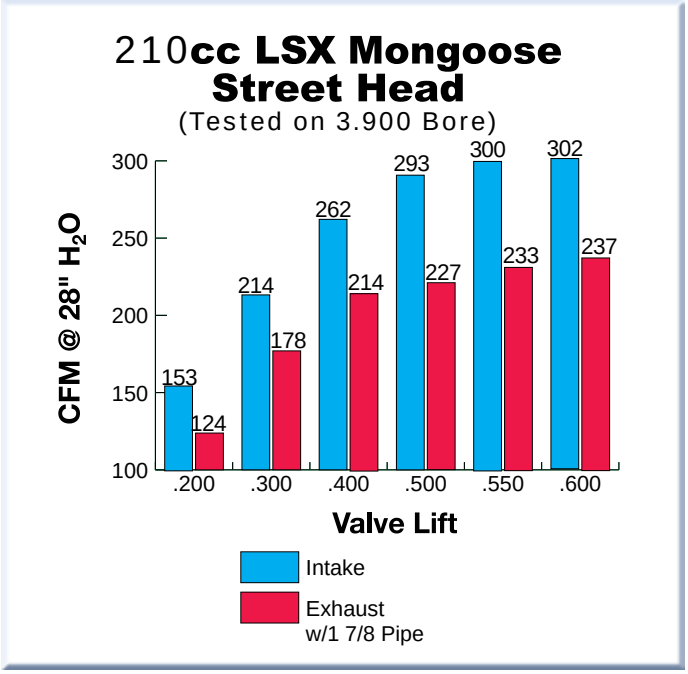
Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.020" x 4.907 O.A.L.	AFR #7207
Bead Lock Exhaust Valve, 1.600" x 4.907 O.A.L.	AFR #7228
PAC Racing Springs 1.290" OD Hydraulic Roller Dual Valve Spring 135 lbs. on seat, .600" maximum lift Max RPM 6300-6500	AFR #8017
7° 1.250 Titanium Retainers	AFR #8512
7° Bead Locks Valve Keepers	AFR #9007
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9059
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051

FYI: LS1 bead locks and aftermarket bead locks are not interchangeable. GM made their bead lock radius and depth different, AFR locks are the same as GM LS1.

Specifications, Features, and Optional Supporting Components

Head Torque ----------11MM ARP 70ft. lbs. w/ Moly 8mm 23ft. lbs. w/ Moly Lube
Exhaust Port Gasket ----------GM#12558573/Fel-Pro #1440 AFR #6857
Intake Port Volume ----------210 cc
Exhaust Port Volume ----------84cc
Head Gasket ----------Fel-Pro #1041, AFR #6847
Cometic Head Gasket ---------- AFR #6846
Head Bolts & Studs ---------- Standard ARP, AFR #6330, #6331 & #6332
Head Bolt Washers ---------- Standard ARP, AFR #6328 & #6329
Shaft Mount Rocker Arms ----------Yella Terra Ultralite
Suggested Manifold ----------LS6 or FAST
Spark Plug Starting Range ---------- AC 41-974 Platinum
Combustion Chambers ---------- 64cc or 66cc
Spring Pocket can be cut to 1.525, no deeper ----------
Valve Spacing ---------- Stock
Rocker Arms ---------- Stock
Valve Angle ---------- Stock
Flat Mill (milling options available)----------.006" per cc

Pairs of Cylinder Heads		
Runner Volume	**Combustion Chamber**	**Part #**
CNC Street Porting		
210cc	CNC Ported w/parts 66cc	1510
210cc	CNC Ported w/o parts 66cc	1520



215cc LSX Mongoose Strip Head

The Medium Sized, High Velocity Torque Monster

Designed Specifically for 4.000 Bore or Larger

V–2 Version

In keeping up with the GM's trend of larger bore sizes and increased displacement, AFR is proud to release our 215cc LS1/LS2/LS6 version of our popular Gen III product line which is aimed specifically to maximize 4" bore combinations (364 – 408 CID). However this head is very versatile and could also be considered for aggressive 346 applications and should also be a prime consideration in larger stroker motors as well (415-430 CID) if the focus of the build is more aimed at enhancing street performance than all out strip performance (where our 230 or 240 cc offerings potentially make more sense). This is a very effective design offering serious velocity while still being able to provide a significant volume of airflow enough to generate well over 600 HP at the crank. This head will also work well on any forced induction or nitrous applications from 346 – 408 CID; larger engines should look to our 230cc offering. Note the AFR 215 requires a minimum head gasket bore of 4.135 regardless of bore size and is a direct bolt on requiring no special parts (see footnotes page 47). It of course comes equipped with AFR's trademark 3/4" thick deck and thicker port and combustion chamber surfaces as well. If you're looking to see that a blue oval in your rear view mirror instead of your windshield, look no further than the AFR 215.

Note: Hydraulic roller cams in "LS" Gen III engines typically experience valve float at 6600-6800 RPM's. If you are using after market rocker arms valve float will become prominent and AFR highly recommends upgrading to our #8019 springs. If you plan on running over .600 gross valve lift and/or 6600 RPM, AFR suggests you upgrade your springs to AFR part #8019. Our upgrade spring has higher seat and open pressures (155/410+) to better reduce the risk of valve float in more aggressive applications.

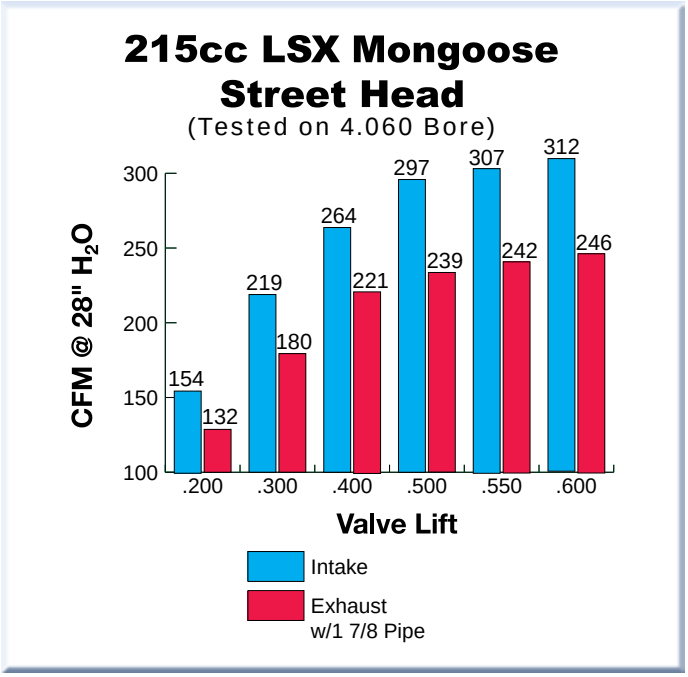
Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.020" x 4.907 O.A.L.	AFR #7207
Bead Lock Exhaust Valve, 1.600" x 4.907 O.A.L.	AFR #7228
PAC Racing Springs 1.290" OD Hydraulic Roller Valve Spring 135 lbs. on seat, .600" maximum lift Max RPM 6300-6500	AFR #8017
7° 1.250 Titanium Retainers	AFR #8512
7° Bead Locks Valve Keepers	AFR #9007
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9059
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051

FYI: LS1 bead locks and aftermarket bead locks are not interchangeable. GM made their bead lock radius and depth different, AFR locks are the same as GM LS1.

Specifications, Features, and Optional Supporting Components

Head Torque ----------11MM ARP 70ft. lbs. w/ Moly 8mm 23ft. lbs. w/ Moly Lube
Exhaust Port Gasket ----------GM#12558573/Fel-Pro #1440 AFR #6857
Intake Port Volume ---------- 215cc
Exhaust Port Volume ----------86cc
Head Gasket ----------Fel-Pro #1041, AFR #6847
Cometic Head Gasket ---------- AFR #6848
Head Bolts & Studs ---------- Standard ARP, AFR #6330, #6331 & #6332
Head Bolt Washers ---------- Standard ARP, AFR #6328 & #6329
Shaft Mount Rocker Arms ----------Yella Terra Ultralite
Suggested Manifold ----------LS6 or FAST
Spark Plug Starting Range ---------- AC 41-974 Platinum
Combustion Chambers ----------65cc
Spring Pocket can be cut to 1.525, no deeper ----------
Valve Spacing ---------- Stock
Rocker Arms ---------- Stock
Valve Angle ---------- Stock
Flat Mill (milling options available)----------.006" per cc

Pairs of Cylinder Heads		
Runner Volume	**Combustion Chamber**	**Part #**
CNC Street Porting		
215cc	Large bore CNC Ported w/parts 65cc	1530
215cc	Large bore CNC Ported w/o parts 65cc	1531



230cc LSX Mongoose Strip Head

The Ultimate Bolt-On Emission Legal Street/Strip Weapon

V-2 Version

For the maximum street/strip LS1/LS2/LS6 aluminum cylinder heads AFR's all new 230cc emission legal head E/O #D250-4 are hands down the best choice. Specifically designed for 1997 to present Gen-3 Chevy Corvettes, Camaros, and trucks. AFR's LS1 head offers unmatched flow performance and features 2.080 intake and 1.600 exhaust valves with AFR's iron ductile interlocking valve seats. The 230cc is ideal for normally aspirated 396C.I. to 427C.I. For a wild 346 ci the 230 is a good choice, however some low RPM loss of torque might occur. It is available with 62cc, 65cc, and 72cc combustion chambers. AFR's LS1 is a direct bolt on, no special parts required (see footnotes page 47). Structural features like Air Flow Research's trademark 3/4" thick head deck, a must for blown and nitrous applications, reinforced rocker stud bosses and thick wall runners provide unparalled durability. An exclusive new modern combination chamber design with double quench pad area helps the LS1 generate huge low and mid lift airflow numbers. If you need a snake charmer for that pesky neighborhood "Cobra Mustang" look no further!

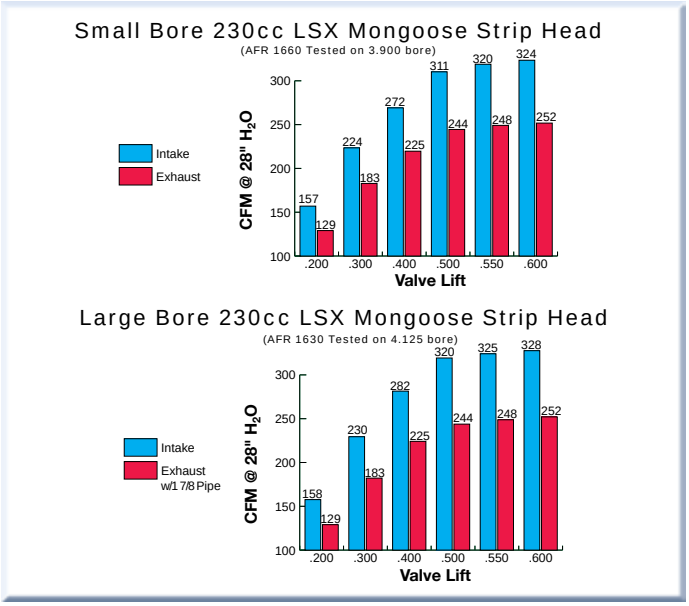
Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.080" x 4.898 O.A.L.	AFR #7208
Bead Lock Exhaust Valve, 1.600" x 4.907 O.A.L.	AFR #7228
PAC Racing Springs 1.270" OD Hydraulic Roller Dual Valve Spring 155 lbs. on seat, .650" maximum lift, Max RPM 7000-7200	AFR #8019
7° 1.250 Titanium Retainers	AFR #8512
7° Bead Locks Valve Keepers	AFR #9007
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9059
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051

FYI: LS1 bead locks and aftermarket bead locks are not interchangeable. GM made their bead lock radius and depth different, AFR locks are the same as GM LS1.

Specifications, Features, and Optional Supporting Components

Head Torque ----------11MM ARP 70ft. lbs. w/ Moly 8mm 23ft. lbs. w/ Moly Lube
Exhaust Port Gasket ----------GM#12558573/Fel-Pro #1440 AFR #6857
Intake Port Volume ---------- 230cc
Exhaust Port Volume ----------85cc
Head Gasket ----------Fel-Pro #1041, AFR #6847
Cometic Head Gasket ---------- AFR #6848
Head Bolts & Studs ---------- Standard ARP, AFR #6330, #6331 & #6332
Head Bolt Washers ---------- Standard ARP, AFR #6328 & #6329
Shaft Mount Rocker Arms ----------Yella Terra Ultralite
Suggested Manifold ----------LS6 or FAST
Spark Plug Starting Range ---------- AC 41-974 Platinum
Combustion Chambers ---------- 62cc, 65cc or 72cc
Spring Pocket can be cut to 1.525, no deeper ----------
Valve Spacing ----------Stock
Rocker Arms ----------Stock
Valve Angle ----------Stock
Flat Mill (milling options available)----------.006" per cc

Pairs of Cylinder Heads		
Runner Volume	**Combustion Chamber**	**Part #**
CNC Street/Strip Porting		
230cc	Large bore CNC Ported w/ parts 62cc	1610
230cc	Large bore CNC Ported w/o parts 62cc	1620
230cc	Large bore CNC Ported w/ parts 72cc	1630
230cc	Large bore CNC Ported w/o parts 72cc	1640
230cc	Small bore CNC Ported w/ parts 65cc	1660
230cc	Small bore CNC Ported w/o parts 65cc	1670



245cc LSX Mongoose Strip Head

Our Max Effort Cathedral Port Offering

A tremendous amount of time and energy was invested to bring you our 245cc LS1/LS2/LS6 Gen III head what represents the pinnacle in cathedral design bolt on performance. With over 355 CFM's available it has intake flow numbers approaching GM's famed (and much larger) LS7 head with much stronger exhaust flow in comparison. This head is our take no prisoners LSX cathedral shaped offering and its focus is large displacement combinations (415 – 454 CID) with a minimum bore size of 4.000. It requires a head gasket bore of 4.200 or larger and comes standard equipped with lightweight 2.160 intake valves / 1.600 exhaust. Another unique feature of this head is that it is "solid roller friendly" having been designed and machined to accept larger .375 pushrods without additional clearancing (in most applications) and comes direct from the factory with 1.510 spring pockets (Note: Under no condition can these pockets be machined deeper). With an aggressive set-up this head is capable of producing power in the 700 HP range while still providing gobs of low and midrange torque. It is still a factory direct bolt on (see footnotes page 47) with standard length valves, stock valve train geometry, and everything in their respective OEM locations. It of course comes standard equipment with AFR's trademark 3/4" head deck and the same rugged castings found in the rest of the AFR LSX line up. Make sure you're packing lots of displacement to fully realize the benefits this head can offer you and hang on when its time to go WOT!

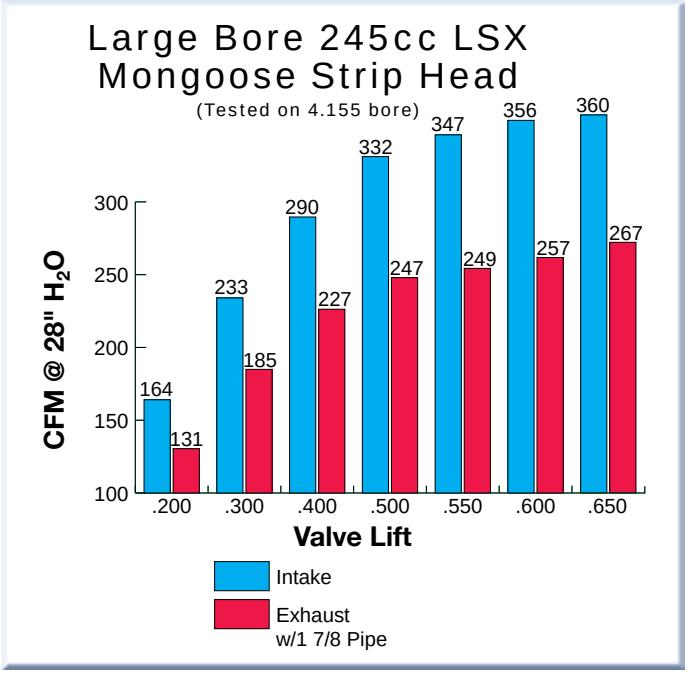
Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.165" x 4.915 O.A.L.	AFR #7211
Bead Lock Exhaust Valve, 1.600" x 4.907 O.A.L.	AFR #7228
PAC Racing Springs 1.270" OD Hydraulic Roller Dual Valve Spring 155 lbs. on seat, .650" maximum lift, Max RPM 7000-7200	AFR #8019
7° 1.250 Titanium Retainers	AFR #8512
7° Bead Locks Valve Keepers	AFR #9007
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9060
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051

FYI: LS1 bead locks and aftermarket bead locks are not interchangeable. GM made their bead lock radius and depth different, AFR locks are the same as GM LS1.

Specifications, Features, and Optional Supporting Components

Head Torque ----------11MM ARP 70ft. lbs. w/ Moly 8mm 23ft. lbs. w/ Moly Lube
Exhaust Port Gasket ----------GM#12558573/Fel-Pro #1440 AFR #6857
Intake Port Volume ---------- 245cc
Exhaust Port Volume ----------88cc
Cometic Head Gasket ---------- Needs a 4.200 Bore Gasket AFR #6845
Head Bolts & Studs ---------- Standard ARP, AFR #6330, #6331 & #6332
Head Bolt Washers ---------- Standard ARP, AFR #6328 & #6329
Shaft Mount Rocker Arms ----------Yella Terra Ultralite
Suggested Manifold ----------LS6 or FAST
Spark Plug Starting Range ---------- AC 41-974 Platinum
Combustion Chambers ---------- 65cc or 73cc
Spring Pocket can be cut to 1.525, no deeper ----------
Valve Spacing ---------- Stock
Rocker Arms ---------- Stock
Valve Angle ---------- Stock
Flat Mill (milling options available)----------.006" per cc

Pairs of Cylinder Heads		
Runner Volume	**Combustion Chamber**	**Part #**
CNC Street/Strip Porting		
245cc	Large bore CNC Ported w/ parts 65cc	1680
245cc	Large bore CNC Ported w/o parts 65cc	1681
245cc	Large bore CNC Ported w/ parts 73cc	1690
245cc	Large bore CNC Ported w/o parts 73cc	1691



265cc Oval Port 24° Magnum BBC "As Cast"

Small Port, High Velocity, Torque Monster

Want to wake up the Big Block in your favorite tow vehicle? AFR's partially CNC ported 265cc high velocity oval port is just the ticket! They are also ideal on smaller cubic inch street performance applications (396-468 CID), providing "gobs" of bottom end torque, tremendous throttle response, and great all around power. With AFR's trademark 3/4" deck, reinforced rockerstud bosses, and thick rugged castings, you can own the strongest and most efficient heads on the market today. Premium hardware such as 2.19/1.880 one piece stainless valves, 1.550 double springs, 10 degree locks and retainers, and high quality studs and guideplates all come as standard equipment. Take note the higher flowing exhaust ports and bolt pattern are raised .375 (3/8") over stock location, this rearly affects header or chassis fitment.These heads have no EGR and are not emissions legal. (see footnotes page 47)

Note: Optional stud girdle required for 2° rolled valve angles and 1" longer head bolts needed on four bottom exhaust bolt holes.

Note: With some domed aftermarket pistons, it may be necessary to slightly clearance or modify the piston due to our more modern (efficient) heart shaped combustion chamber design. Most of the newer manufacturer's dome profiles will clear. Note that usually less than 1 cc of aluminum is removed which only equates to a weight reduction in the piston of one to two grams. If your rotating assembly is already balanced this is a non-event and creates a VERY slight overbalance which in theory brings your engine into a better balance at slightly higher RPM. While some of you might be inclined to remove the material from the actual cylinder head note that all of the combustion chamber shapes are very critical to flow and altering the cylinder head can and will effect flow and power production. The easiest way to check for this is turning the engine over slowly with the cylinder head installed without the head gasket. See web site for more details.

Basic Package Components	Part #
40% CNC Ported Exhaust Ports (Bowl Blend), 50% CNC Chambers 80% CNC Ported Intake Ports (Bowl Blend) & Gasket Port Match Competition 5 Angle Valve Job	
Intake Valve, 2.190" x 5.460 O.A.L.	AFR #7601
Exhaust Valve, 1.880"x 5.448 O.A.L.	AFR #7630
1.550" O.D. Hydraulic Roller Dual Valve Spring, Max RPM 6300-6500 170 lbs. on seat, 473 @ .600 lift, Max RPM 6300-6500	AFR #8002
PAC Racing Springs 1.550 O.D. Solid Roller Valve Spring, 225 lbs. on seat, .680 maximum lift Max RPM 7200-7400	AFR #8000
10° 1.450 Chrome Moly Retainers	AFR #8511
10° Valve Locks	AFR #9005
Adjustable 3/8" Guide Plates	AFR #6109
Viton Valve Seals	AFR #6611
Hardened Spring Seat	AFR #8048
Intake Valve Seats	AFR #9065
Exhaust Valve Seats	AFR #9064
Bronze Valve Guides Intake	AFR #9045
Bronze Valve Guides Exhaust	AFR #9046
ARP BB Chevy 7/16 Exhaust Studs	AFR #6406
ARP BB Chevy 7/16 Intake Studs	AFR #6407

Specifications, Features, and Optional Supporting Components

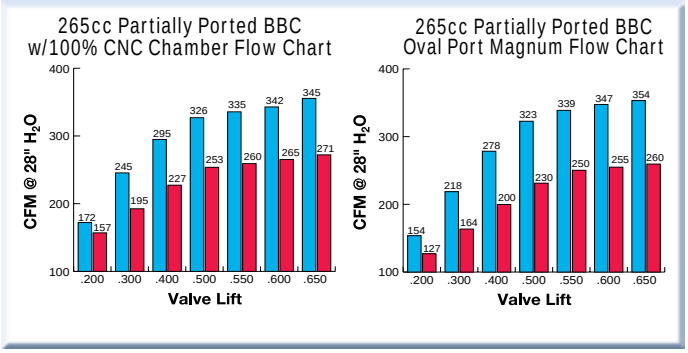
Head Torque with Moly Lube ---------- 75 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Volume (as cast) ---------- 265cc
Intake Port Gasket ---------- Mr. Gasket #107, GM# 12366985

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Intake Valve Size 2.190 ---------- AFR# 7601
Exhaust Port Volume (as cast) ---------- 115
Exhaust Port Gasket ---------- AFR #6858
Exhaust Valve Size 1.880 ---------- AFR #7630
Head Gasket ---------- 4.540 bore, Fel Pro #1017, AFR #6850
Head Bolts & Studs ---------- Standard ARP, AFR #6308, #6307
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle ---------- AFR #6210
Sugg.. Manifold ---------- Vic Jr, RPM Performer, Wieand Stealth
Spark Plug Starting Range ---------- Autolite 3935
Combustion Chambers ---------- As Cast 109cc CNC 113cc
Spring Pocket can be cut to 1.750, no deeper.
Valve Spacing ---------- Standard
Rocker Arms ---------- Standard
Valve Angle ---------- 24°/4° Intake, 15°/4° Exhaust
Angle Mill (milling options available), 97cc Maximum ---------- .009" per cc
Flat Mill (milling options available), 102cc Maximum ---------- .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket.

Pairs of Cylinder Heads			
Runner Volume/Description		Combustion Chamber	Part #
Street/Strip Package			
265cc	As Cast w/o Parts w/ CNC bowl blend	109cc	3600
265cc	As Cast w/Hydraulic Roller Springs w/ CNC bowl blend	109cc	3610
265cc	As Cast w/Solid Roller Springs CNC bowl blend	109cc	3620
265cc	As Cast w/o Parts w/ CNC Chambers & CNC bowl blend	113cc	3600-1
265cc	As Cast w/Hydraulic w/ CNC Chambers Roller Springs & CNC bowl blend	113cc	3610-1
265cc	As Cast w/solid Roller Springs CNC Chambers & CNC bowl blend	113cc	3620-1



290cc Oval Port 24° Magnum BBC

Our Medium Sized Oval Port

For incredible "Oval Port" performance, the fully CNC ported AFR 290 has no competition. With flow figures most small to medium sized rectangular port castings would be envious of, these high flowing "Ovals"produce tremendous airspeed and really pack a punch. Ideally suited for 396-509 CID street and strip performance, as well as circle track applications which require strong low and mid-range torque to help accelerate a car coming off a corner. Once again, AFR has included it's trademark 3/4" deck, reinforced rocker stud bosses, and thick rugged castings, so you can own the strongest and most efficient heads on the market today. Premium hardware such as 2.250/1.880 one piece stainless valves, 1.550 double springs, 10 degree locks and retainers, and high quality studs and guideplates all come as standard equipment. Take note the higher flowing exhaust ports and bolt pattern are raised .375 (3/8") over stock location, this rearly affects header or chassis fitment. These heads have no EGR and are not emissions legal.
(see footnotes page 47)

Note: Optional stud girdle required for 2° rolled valve angles and 1" longer head bolt needed on four bottom exhaust bolt holes.

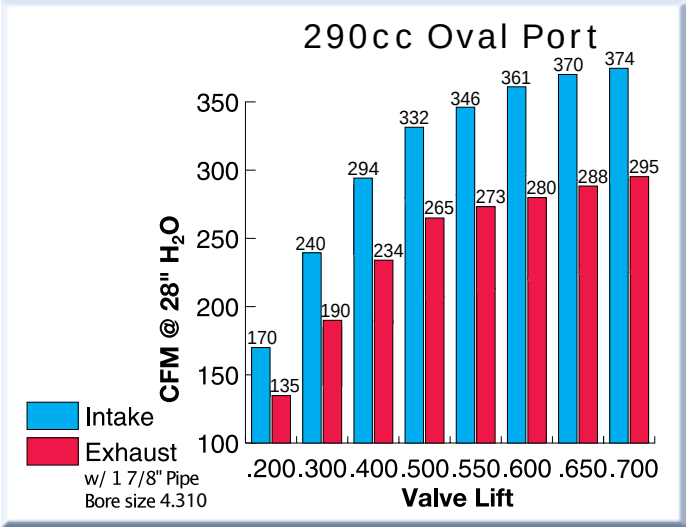
Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Intake Valve, 2.250" x 5.500 O.A.L.	AFR #7620
Exhaust Valve, 1.880" x 5.448 O.A.L.	AFR #7630
1.550" O.D. Hydraulic Roller Dual Valve Spring 170 lbs. on seat, 473 @ .600 lift, Max RPM 6300-6500	AFR #8002
PAC Racing Springs 1.550 O.D. Solid Roller Valve Spring, 225 lbs. on seat, .680 maximum lift, Max RPM 7200-7400	AFR #8000
Manley 10° 4140 Chrome Moly Retainers	AFR #8511
10° Valve Locks	AFR #9005
Adjustable 3/8" Guide Plates	AFR #6109
Viton Valve Seals	AFR #6611
Hardened Spring Seat	AFR #8048
Intake Valve Se ats	AFR #9065
Exhaust Valve Seats	AFR #9064
Bronze Valve Guides Intake	AFR #9045
Bronze Valve Guides Exhaust	AFR #9046
ARP BB Chevy 7/16 Exhaust Stud	AFR #6406
ARP BB Chevy 7/16 Intake Stud	AFR #6407

Specifications, Features, and Optional Supporting Components

Head Torque with Moly Lube ---------- 75 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket ---------- Mr. Gasket #107, GM# 12366985
Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*
Exhaust Port Volume (as cast) ---------- N/A
Exhaust Port Gasket ---------- AFR #6858
Exhaust Valve Size 1.880 ---------- AFR# 7630
Head Gasket ---------- 4.540 Bore Fel Pro #1017, AFR #6850
Head Bolts & Studs ---------- Standard ARP, AFR #6308 & #6307
Head Bolt Washers ---------- Manley, AFR #6320
Suggested Manifold ---------- Victor Jr, RPM Performer, or Weiand Stealth
Spark Plug Starting Range ---------- Autolite 3935
Combustion Chambers ---------- CNC 113cc
Spring Pocket can be cut to 1.750, no deeper.
Stud Girdle ---------- AFR# 6210
Valve Spacing ---------- Standard
Rocker Arms ---------- Standard
Valve Angle ---------- 24°/4° Intake 15°/4° Exhaust
Angle Mill (milling options available) ---------- 97cc Maximum .009/cc
Flat Mill (milling options available) ---------- 102cc Maximum .006/cc

Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Heads			
Runner Volume/Description		Combustion Chamber	Part #
Street/Strip Package Ported Heads			
290cc	CNC Ported w/o Parts	113cc	3630
290cc	CNC Ported w/ Hydraulic 1.550 OD Roller Springs	113cc	3640
290cc	CNC Ported w/ 1.550 OD Solid Roller Springs	113cc	3650



300cc Oval Port 24° Magnum BBC

The Ultimate Street/ Race Weapon

For the ultimate in "Oval Port" performance, the fully CNC ported AFR 300 has no competition. With flow figures most small to medium sized rectangular port castings would be envious of, these high flowing "Ovals" produce tremendous airspeed and really pack a punch. Ideally suited for 427-540 CID street and strip performance, as well as circle track applications which require strong low and mid-range torque to help accelerate a car coming off a corner. Once again, AFR has included it's trademark 3/4" deck, reinforced rocker stud bosses, and thick rugged castings, so you can own the strongest and most efficient heads on the market today. Premium hardware such as 2.300/1.880 one piece stainless valves, 1.550 double springs, 10 degree locks and retainers, and high quality studs and guideplates all come as standard equipment. Take note the higher flowing exhaust ports are raised .375 over stock location, and therefore these heads might not be a direct bolt-on in every application. These heads have no EGR and are not emissions legal. (see footnotes page 47)

Note: Optional stud girdle required for 2° rolled valve angles and 1" longer head bolt needed on four bottom exhaust bolt holes.

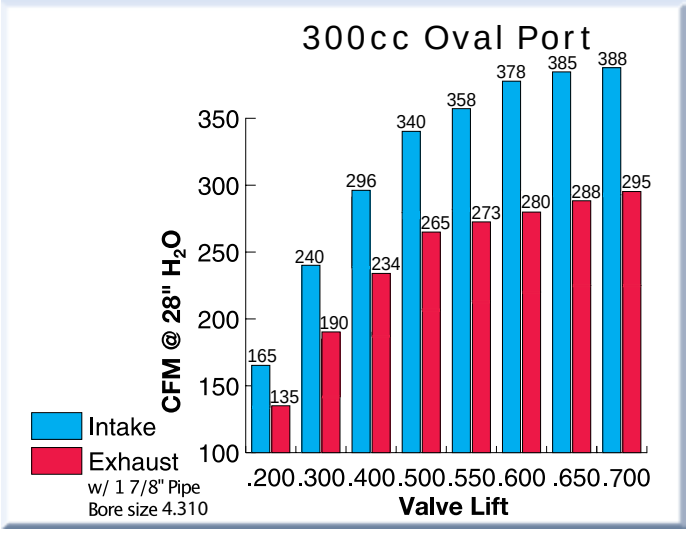
Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Intake Valve, 2.30" stainless steel	AFR #7626
Exhaust Valve, 1.880" stainless steel	AFR #7630
1.550" O.D. Hydraulic Roller Dual Valve Spring 170 lbs. on seat, 473 @ 600 lift, Max RPM 6300-6500	AFR #8002
PAC Racing Springs 1.625" OD Solid Roller PAC #1224, 275 lbs. on seat, .850" maximum lift	AFR #8031
Manley 10º 4140 Chrome Moly Retainers	AFR #8511
10º Valve Locks	AFR #9005
Guide Plates	AFR #6109
Viton Valve Seals	AFR #6611
Hardened Spring Seat	AFR #8048
Intake Valve Seats	AFR #9065
Exhaust Valve Seats	AFR #9064
Bronze Valve Guides Intake	AFR #9045
Bronze Valve Guides Exhaust	AFR #9046
ARP BB Chevy 7/16 Exhaust Stud	AFR #6406
ARP BB Chevy 7/16 Intake Stud	AFR #6407

Specifications, Features, and Optional Supporting Components

Head Torque ---------- 75 Ft. Lbs.
Intake Port Gasket ---------- GM# 12366985
Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*
Exhaust Port Volume (as cast) ---------- N/A
Exhaust Port Gasket ---------- AFR #6858
Exhaust Valve Size 1.880 ---------- AFR# 7630
Head Gasket ---------- 4.540 Bore Fel Pro #1017, AFR #6850
Head Bolts & Studs ---------- Standard ARP, AFR #6308 & #6307
Head Bolt Washers ---------- Manley, AFR #6320
Suggested Manifold ---------- Victor Jr, RPM Performer, or Weiand Stealth
Spark Plug Starting Range ---------- Autolite 3935
Combustion Chambers ---------- CNC 113cc
Spring Pocket can be cut to 1.750, no deeper.
Stud Girdle ---------- AFR# 6210
Valve Spacing ---------- Standard
Rocker Arms ---------- Standard
Valve Angle ---------- 24°/4° Intake 15°/4° Exhaust
Angle Mill (milling options available) ---------- 102cc Maximum .009/cc
Flat Mill (milling options available) ---------- 107cc Maximum .006/cc

Note: Milling Head Deck Will Affect Flow Numbers. Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Heads			
Runner Volume/Description Street/Strip		Combustion Chamber	Part #
Competition Package Ported Heads			
300cc	CNC Ported w/o Parts	113cc	3660
300cc	CNC Ported w/ Hydraulic 1.550 OD Roller Springs	113cc	3670
300cc	CNC Ported w/ 1.550 OD Solid Roller Springs	113cc	3680



305/315cc Magnum 24° BBC

AFR's Torque Monster

The smallest intake volume runners in our line-up, but don't let size fool you. Our partially ported 305cc with CNC bowl blends & chambers or fully CNC ported 315cc cylinder heads will provide you with flow numbers most medium sized heads, and some larger, can only dream about. This line was designed to optimize low and mid-lift airflow, while still generating impressive peak figures. Their application should be focused on smaller cubic inch Big Blocks (396-502), with a primary operating range of 2500-6800 rpm's (this range is an average and will vary with engine displacement as well as component selection). These heads should also be given strong consideration in larger street driven or marine applications up to 555 CID, where low rpm power and drivability are a factor. The 315 version is extremely versatile with its incredibly strong low and midlift airflow figures as well as peak numbers approaching the 400 CFM mark. Either one of these two cylinder heads would be a great choice if you're looking for big torque, strong low rpm performance, and still have good rpm capabilities. Both the 305cc and the 315cc come standard with AFR's trademark .750" thick head deck, reinforced rocker stud bosses, and are equipped with premium one piece stainless steel 2.250" intake valves and 1.880" exhaust valves. Standard combustion chamber volume is 117 cc's on the 305 partially ported pieces, while our fully CNC ported 315cc version comes with a 121cc chamber. Take note the higher flowing exhaust ports and bolt pattern are raised .375 (3/8") over stock location, this rarely affects header or chassis fitment.

Note: Optional stud girdle required for 2° rolled valve angles and 1" longer head bolts needed on four bottom exhaust bolt holes. Longer push rods might also be required.

See footnotes on page 47 regarding BBC dome piston clearance.

Basic Package Components	Part #
305cc CNC Bowl Blend Intake & Exhaust, Intake Gasket Match 50% CNC Chambers **315cc 100% CNC Ported Intake Ports, Exhaust Ports & Combustion chambers** **Competition 5-angle Valve Job**	
Intake Valve, 2.250" x 5.500 O.A.L.	AFR #7620
Exhaust Valve, 1.880" x 5.448 O.A.L.	AFR #7630
PAC Racing Springs 1.625" OD Solid Roller PAC #1224, 275 lbs. on seat, .850" maximum lift, Max RPM 7400-7600	AFR #8031
Manley 10° Chrome Moly Retainers	AFR #8518
10° Chrome Moly Valve Locks	AFR #9005
Viton Valve Seals	AFR #6611
Hardened Spring Cup	AFR #8046
Intake Valve Seats	AFR #9062
Exhaust Valve Seats	AFR #9064
Bronze Valve Guides Intake	AFR #9045
Bronze Valve Guides Exhaust	AFR #9046
ARP BB Chevy 7/16" Exhaust Stud	AFR #6406
ARP BB Chevy 7/16" Intake Stud	AFR #6407
Adjustable 3/8" Guide Plates	AFR #6109

Specifications, Features, and Optional Supporting Components

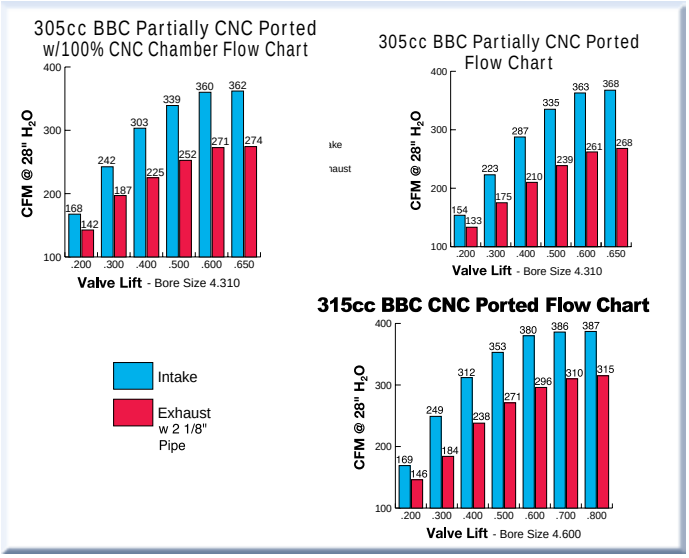
Head Torque with Moly Lube ----------75 Ft. Lbs.
Rocker Stud Torque ----------55 Ft. Lbs.
Intake Port Gasket, 1.720" x 2.450" with 1/2" radius ---------- AFR #6855
---------- Fel-Pro #1275

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- AFR #6858
Head Gasket ---------- 4.540 bore, Fel Pro #1017, AFR #6850
---------- Mark V-VI-up to 4.500 Bore Fel-Pro #17048 or #1047
---------- Mark V-VI-4.500 to 4.600 Bore Fel-Pro #17049
Head Bolts & Studs ---------- Standard ARP, AFR #6308, #6307 & 6306
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle ---------- AFR #6210
Suggested Manifold ---------- Edelbrock #2907 & #2927
---------- Dart #6200, #6201, #6202 & #6203
---------- Brodix HVH #2000, #2001, #2005 & #2006
Spark Plug Starting Range ---------- Champion C59C Autolite 3932
Combustion Chambers ---------- As Cast 115cc CNC 121cc
Spring Pocket can be cut to 1.750, no deeper.
Valve Spacing ---------- Standard
Rocker Arms ---------- Standard
Valve Angle ---------- 24°/4° Intake, 15°/4° Exhaust
Angle Mill (milling options available), 104cc Maximum ----------.009" per cc
Flat Mill (milling options available), As Cast 108cc CNC 114cc Maximum .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Heads			
Runner Volume/Description		***Combustion Chamber***	***Part #***
Competition Package			
305cc	Partially CNC ported w/o Parts w/ CNC bowl blends	117cc	3050
305cc	Partially CNC ported w/Parts w/ CNC bowl blends	117cc	2100
305cc	Partially CNC ported w/o Parts w/ CNC chambers & CNC bowl blends	121cc	3050-1
305cc	Partially CNC ported w/Parts CNC chambers & CNC bowl blends	121cc	2100-1
315cc	Fully CNC Ported w/o Parts	121cc	3150
315cc	Fully CNC Ported w/Partially CNC ported Parts	121cc	2000



325/335cc Magnum 24° BBC

AFR's Best of Both Solution

Are you looking for big torque and big horsepower numbers? Our BB Chevy line of medium volume intake runners will provide you with exactly that. The phrase "having your cake and eating it to" would certainly be appropriate with their moderately sized intake runners producing tremendous flow figures across the entire lift range (Our CNC 335 flows 410 CFM!). These high flow/high velocity ports provide extreme versatility and fill the needs of many applications. From a max-effort high compression 454 to a 605 CID low rpm marine application, either one of these cylinder heads would be a great choice. These heads would also be ideal in a larger cubic inch "Pro-Street" application with their broad torque range, as well as significant rpm and horsepower capability. These cylinder heads will work best with a primary operating range of 3000-7000 rpm's (This range is an average and will vary with engine displacement as well as component selection). Both the 325cc and the 335cc come standard with AFR's trademark .750" thick head deck, reinforced rocker stud bosses, and are equipped with premium one piece stainless steel 2.300" intake valves and 1.880" exhaust valves. Standard combustion chamber volume is 117cc's on our 325 partially CNC ported pieces, while the fully CNC ported 335 version comes with a 121cc chamber. Take note the higher flowing exhaust ports and bolt pattern are raised .375 (3/8") over stock location, this rarely affects header or chassis fitment.

Note: Optional stud girdle required for 2° rolled valve angles and 1" longer head bolts needed on four bottom exhaust bolt holes. **Longer push rods might also be required.**

See footnotes on page 47 regarding BBC dome piston clearance.

Basic Package Components	*Part #*
325cc CNC Bowl Blend Intake & Exhaust, Intake Gasket Match 50% CNC Chambers **335cc 100% CNC Ported Intake Ports, Exhaust Ports & Combustion chambers** **Competition 5-angle Valve Job**	
Intake Valve, 2.300" x 5.500 O.A.L.	AFR #7626
Exhaust Valve, 1.880" x 5.442 O.A.L.	AFR #7631
PAC Racing Springs 1.625" OD Solid Roller PAC #1224, 275 lbs. on seat, .850" maximum lift, Max RPM 7400-7600	AFR #8031
Manley 10° Chrome Moly Retainers	AFR #8518
10° Chrome Moly Valve Locks	AFR #9005
Viton Valve Seals	AFR #6611
Hardened Spring Cup	AFR #8046
Intake Valve Seats	AFR #9062
Exhaust Valve Seats	AFR #9064
Bronze Valve Guides Intake	AFR #9045
Bronze Valve Guides Exhaust	AFR #9046
ARP BB Chevy 7/16" Exhaust Stud	AFR #6406
ARP BB Chevy 7/16" Intake Stud	AFR #6407
Adjustable 3/8" Guide Plates	AFR #6109

Specifications, Features, and Optional Supporting Components

Head Torque with Moly Lube ----------75 Ft. Lbs.
Rocker Stud Torque ----------55 Ft. Lbs.
Intake Port Gasket, 1.720" x 2.450" with 1/2" radius---------- AFR #6855
----------Fel-Pro #1275

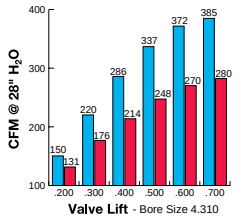
Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- AFR #6858
Head Gasket ----------4.540 bore, Fel Pro #1017, AFR #6850
---------- Mark V-VI-up to 4.500 Bore Fel-Pro #17048 or #1047
---------- Mark V-VI-4.500 to 4.600 Bore Fel-Pro #17049
Head Bolts & Studs ---------- Standard ARP, AFR #6308, #6307 & #6306
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle---------- AFR #6210
Suggested Manifold ---------- Edelbrock #2907 & #2927
----------Dart #6200, #6201, #6202 & #6203
---------- Brodix HVH #2000, #2001, #2005 & #2006
Spark Plug Starting Range ---------- Champion C59C Autolite 3932
Combustion Chambers ---------- As Cast 115cc CNC 121cc
Spring Pocket can be cut to 1.750, no deeper ----------
Valve Spacing---------- Standard
Rocker Arms---------- Standard
Valve Angle ---------- 24°/4° Intake, 15°/4° Exhaust
Angle Mill (milling options available), 104cc Maximum ----------.009" per cc
Flat Mill (milling options available), As Cast 108cc CNC 114cc Maximum .006" per cc

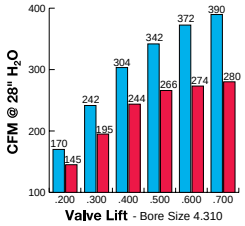
Note: Flat and Angle mills might require a .120 thick intake gasket

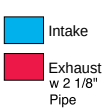
Pairs of Cylinder Heads		
Runner Volume/Description	***Combustion Chamber***	***Part #***
Competition Package		
325cc Partially CNC ported w/o Parts w/ CNC bowl blends	117cc	3250
325cc Partially CNC ported w/Parts w/ CNC bowl blends	117cc	2101
325cc Partially CNC ported w/o Parts w/ CNC Chambers & CNC bowl blends	121cc	3250-1
325cc w/Parts CNC Chambers & CNC bowl blends	121cc	2101-1
335cc Fully CNC Ported w/o Part	121cc	3350
335cc Fully CNC Ported w/Parts	121cc	2001

325cc BBC Partially CNC Ported Flow Chart

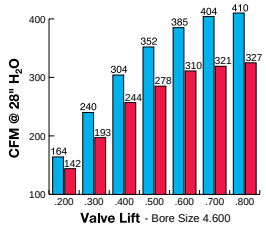


325cc BBC Partially CNC Ported w/100% CNC Chambers Flow Chart





335cc BBC CNC Ported Flow Chart



345/357cc Magnum 24° BBC

AFR's Magnum Series

If "Dirty Harry" drove a racecar, it would certainly be fitted with a pair of our 357 "Magnum" cylinder heads. While Harry's gun might not look as imposing lately (AFR has recently released even larger versions of our bolt on style BBC race head), the venerable 357 has proven itself out in the field producing upwards of 900 HP without breaking a sweat and even more in aggressive well sorted out combinations. The 357 is extremely versatile with the ability to work on high RPM 450+ CID combinations and up to 7000 RPM in 600 CID combos. If your worried our new 377/385 line might be a bit too big, our 357 will certainly deliver with 425 CFM on tap @ .800 lift and 327 CFM on the exhaust. The 357 will work best with camshafts exceeding .750 gross valve lift to make better use of the substantial airflow found in the higher lift range. Of course the 357 comes standard with AFR's trademark .750" thick cylinder head deck, reinforced rocker stud bosses, and are equipped with premium one piece stainless steel 2.300" intake valves and 1.880" exhaust valves. Standard combustion chamber volume is 121cc but they can be milled as low as 102 cc's if necessary. This head also includes PAC 1.625 racing springs (rated to .850 lift) as standard equipment. Take note the higher flowing exhaust ports and bolt pattern are raised .375 (3/8") over stock location, this rarely affects header or chassis fitment.

Note: Optional stud girdle required for 2° rolled valve angles and 1" longer head bolts needed on four bottom exhaust bolt holes. Longer pushrods might also be required.

See footnotes on page 47 regarding BBC dome piston clearance.

Basic Package Components	Part #
345cc CNC Bowl Blend Intake & Exhaust, Intake Gasket Match 50% CNC Chambers **357cc 100% CNC Ported Intake Ports, Exhaust Ports & Combustion chambers** **Competition 5-angle Valve Job**	
Intake Valve, 2.300" x 5.500 O.A.L.	AFR #7626
Exhaust Valve, 1.880" x 5.442 O.A.L.	AFR #7631
PAC Racing Springs 1.625" OD Solid Roller PAC #1224, 275 lbs. on seat, .850" maximum lift, Max RPM 7400-7600	AFR #8031
10° Chrome Moly Retainers	AFR #8518
10° Chrome Moly Valve Locks	AFR #9005
Viton Valve Seals	AFR #6611
Hardened Spring Cup	AFR #8046
Intake Valve Seats	AFR #9062
Exhaust Valve Seats	AFR #9064
Bronze Valve Guides Intake	AFR #9045
Bronze Valve Guides Exhaust	AFR #9046
ARP BB Chevy 7/16" Exhaust Stud	AFR #6406
ARP BB Chevy 7/16" Intake Stud	AFR #6407
Adjustable 3/8" Guide Plates	AFR #6109

Specifications, Features, and Optional Supporting Components

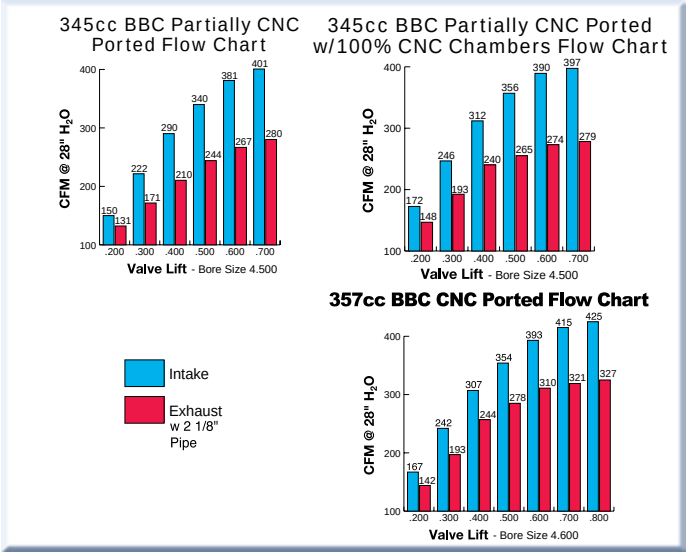
Head Torque with Moly Lube ----------75 Ft. Lbs.
Rocker Stud Torque ----------55 Ft. Lbs.
Intake Port Gasket, 1.775" x 2.500" with 1/2" radius---------- AFR #6856
----------Fel-Pro #1275

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- AFR #6858
Head Gasket ----------4.540 bore, Fel Pro #1017, AFR #6850
---------- Mark V-VI-up to 4.500 Bore Fel-Pro #17048 or #1047
---------- Mark V-VI-4.500 to 4.600 Bore Fel-Pro #17049
Head Bolts & Studs ---------- Standard ARP, AFR #6308, #6307 & #6306
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle---------- AFR #6210
Suggested Manifold ---------- Edelbrock #2907 & #2927
----------Dart #6200, #6201, #6202 & #6203
---------- Brodix HVH #2000, #2001, #2005 & #2006
Spark Plug Starting Range ---------- Champion C59C Autolite 3932
Combustion Chambers ---------- As Cast 115cc CNC 121cc
Spring Pocket can be cut to 1.750, no deeper.
Valve Spacing---------- Standard
Rocker Arms---------- Standard
Valve Angle ---------- 24°/4° Intake, 15°/4° Exhaust
Angle Mill (milling options available), 104cc Maximum ----------.009" per cc
Flat Mill (milling options available), As Cast 108cc CNC 114cc Maximum .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Heads			
Runner Volume/Description		***Combustion Chamber***	***Part #***
Competition Package			
345cc	Partially CNC ported w/o Parts w/ CNC w/ CNC bowl blend	117cc	3450
345cc	Partially CNC ported w/Parts w/ CNC bowl blend	117cc	2110
345cc	Partially CNC ported w/o Parts w/ CNC Chambers & CNC bowl blend	121cc	3450-1
345cc	Partially CNC ported w/Parts CNC Chambers & CNC bowl blend	121cc	2110-1
357cc	Fully CNC Ported w/o Parts	121cc	3570
357cc	Fully CNC Ported w/Parts	121cc	2010



377cc Magnum 24° BBC

AFR's Magnum Series

Our 377's are ideal for large cubic inch combinations (540 – 615 CID) that are looking for more airflow than our 357's can muster but want to retain a 2.300 intake valve. This head will also work well on smaller very aggressive applications (489 - 532 CID) turning over 8000 RPM's. The 377 is very efficient and moves a lot of air early in the curve (415 @ .600) making it an ideal choice if you're limited to how much cam lift you can run (the perfect application that comes to mind is a big inch marine engine with a hyd roller cam and a limited RPM ceiling). With close to 440 CFM of peak flow it should be extremely easy to clear 950 HP in single four barrel aggressive applications and even more in well sorted out combinations (especially with tunnel ram/sheet metal dual quad combo's). The exhaust ports are also notably stronger than our 357 making the 377 an excellent choice in a forced induction or nitrous car that could benefit from the stronger exhaust flow. Of course the 377cc come standard with AFR's trademark .750" thick cylinder head deck, reinforced rocker stud bosses, and are equipped with premium one piece stainless steel 2.300" intake valves and 1.880" exhaust valves. Standard combustion chamber volume is 121cc for our 377cc BBC. This head also includes PAC 1.625 racing springs rated to .850 lift as standard equipment. Take note the higher flowing exhaust ports and bolt pattern are raised .375 (3/8") over stock location, this rarely affects header or chassis fitment.

Note: Optional stud girdle required for 2° rolled valve angles and 1" longer head bolts needed on four bottom exhaust bolt holes. Longer pushrods might also be required.

See footnotes on page 47 regarding BBC dome piston clearance.

Basic Package Components	*Part #*
377cc 100% CNC Ported Intake Ports, Exhaust Ports & Combustion chambers **Competition 5-angle Valve Job**	
Intake Valve, 2.300" x 5.500 O.A.L.	AFR #7626
Exhaust Valve, 1.880" x 5.442 O.A.L.	AFR #7631
PAC Racing Springs 1.625" OD Solid Roller PAC #1224, 275 lbs. on seat, .850" maximum lift , Max RPM 7400-7600	AFR #8031
10° Titanium Retainers	AFR #8507
10° Chrome Moly Valve Locks	AFR #9005
Viton Valve Seals	AFR #6611
Hardened Spring Cup	AFR #8046
Intake Valve Seats	AFR #9062
Exhaust Valve Seats	AFR #9064
Bronze Valve Guides Intake	AFR #9045
Bronze Valve Guides Exhaust	AFR #9046
ARP BB Chevy 7/16" Exhaust Stud	AFR #6406
ARP BB Chevy 7/16" Intake Stud	AFR #6407
Adjustable 3/8" Guide Plates	AFR #6109

Specifications, Features, and Optional Supporting Components

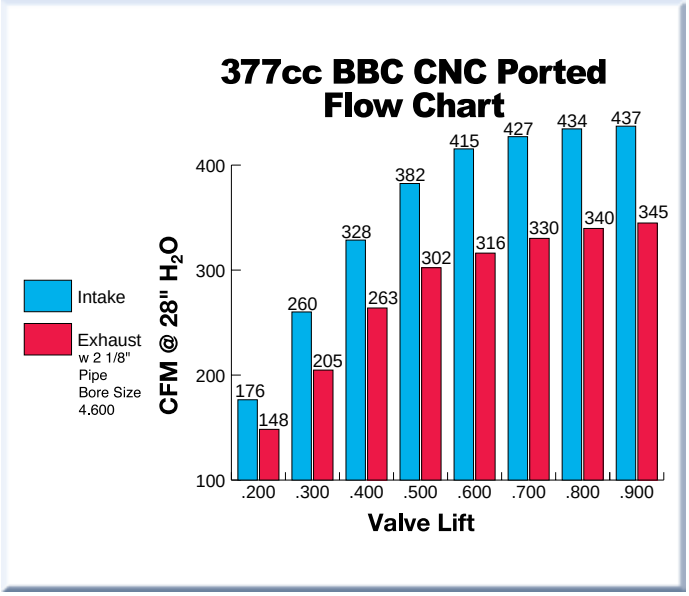
Head Torque with Moly Lube ----------75 Ft. Lbs.
Rocker Stud Torque ----------55 Ft. Lbs.
Intake Port Gasket, 1.775" x 2.500" with 1/2" radius---------- AFR #6856
----------Fel-Pro #1275

***Important:** Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- AFR #6858
Head Gasket ----------4.540 bore, Fel Pro #1017, AFR #6850
---------- Mark V-VI-up to 4.500 Bore Fel-Pro #17048 or #1047
---------- Mark V-VI-4.500 to 4.600 Bore Fel-Pro #17049
Head Bolts & Studs ---------- Standard ARP, AFR #6308, #6307 & #6306
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle---------- AFR #6210
Suggested Manifold ---------- Edelbrock #2907 & #2927
----------Dart #6200, #6201, #6202 & #6203
---------- Brodix HVH #2000, #2001, #2005 & #2006
Spark Plug Starting Range ---------- Champion C59C Autolite 3932
Combustion Chambers ---------- As Cast 115cc CNC 121cc
Spring Pocket can be cut to 1.750, no deeper.
Valve Spacing---------- Standard
Rocker Arms---------- Standard
Valve Angle ---------- 24º/4º Intake, 15º/4º Exhaust
Angle Mill (milling options available), 104cc Maximum ----------.009" per cc
Flat Mill (milling options available), As Cast 108cc CNC 114cc Maximum .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Heads		
Runner Volume/Description	***Combustion Chamber***	***Part #***
Competition Package		
377cc CNC Ported w/o Parts	121cc	3575
377cc CNC Ported w/Parts	121cc	2015



385cc Magnum 24° BBC

AFR's Magnum Series

As the aftermarket continues to embrace larger displacement combinations (and they get cheaper to build), even 555 CID builds are starting to look small with 600+ CID engines more plentiful than ever before. AFR is proud to announce our answer to that with our all new 385 cc Magnum head, the largest and highest flowing BBC product in our line-up with flow numbers that are creeping up on many of our competitor's 18 degree Pro-stock style heads. This is without a doubt the new AFR "bad-boy" and if you've got the displacement we have the head to feed it with an intake port that flows over 450 CFM at a very usable lift (452 CFM @ .800 and approaching 460 CFM @ .900) with a strong enough exhaust port to still maintain over 76% of that number at the same lift points (344 CFM @ .800 and 350 CFM @ .900). While this huge a runner is more clearly aimed at 572 - 632 CID applications, in a light car it could still be considered in 555-565 CID aggressive builds that are built to reliably turn 7800 - 8500 RPM's (Ti valves recommended over 8000 RPM's). This head will be best utilized with camshafts over .800 lift to take full advantage of its impressive higher lift airflow, but the best thing about this head is its ability to also provide the end user with industry leading low and mid-lift flow as well (421 CFM at .600 lift!) so you don't have to run a monster cam to produce big power. While even the .700 lift flow figures are strong enough to produce over 950 HP, with the right combination and a cam exceeding .800 lift (to tap into the deepest part of the flow curve), over 1000 HP is possible in a single four barrel application and over 1050 in a twin four barrel configuration. This head means business and of course also features AFR's trademark .750 thick head deck, reinforced rocker stud bosses, and is equipped with 2.350 intake / 1.880 tulip exhaust valves. Also, like the 377, the new 385 head comes with PAC 1.625 racing springs and Ti retainers as standard equipment (rated to .850 lift). Take note the higher flowing exhaust ports and bolt pattern are raised .375 (3/8") over stock location, this rarely affects header or chassis fitment.

Note: Optional stud girdle required for 2° rolled valve angles and 1" longer head bolts needed on four bottom exhaust bolt holes. **Longer push rods might also be required.**

See footnotes on page 47 regarding BBC dome piston clearance.

Basic Package Components	Part #
385cc 100% CNC Ported Intake Ports, Exhaust Ports & Combustion chambers **Competition 5-angle Valve Job**	
Intake Valve, 2.350" x 5.535 O.A.L.	AFR #7627
Exhaust Valve, 1.880" x 5.442 O.A.L.	AFR #7631
PAC Racing Springs 1.625" OD Solid Roller PAC #1224, 275 lbs. on seat, .850" maximum lift, Max RPM 7400-7600	AFR #8031
10° Titanium Retainers	AFR #8507
10° Chrome Moly Valve Locks	AFR #9005
Viton Valve Seals	AFR #6611
Hardened Spring Cup	AFR #8046
Intake Valve Seats	AFR #9062
Exhaust Valve Seats	AFR #9064
Bronze Valve Guides Intake	AFR #9045
Bronze Valve Guides Exhaust	AFR #9046
ARP BB Chevy 7/16" Exhaust Stud	AFR #6406
ARP BB Chevy 7/16" Intake Stud	AFR #6407
Adjustable 3/8" Guide Plates	AFR #6109

Specifications, Features, and Optional Supporting Components

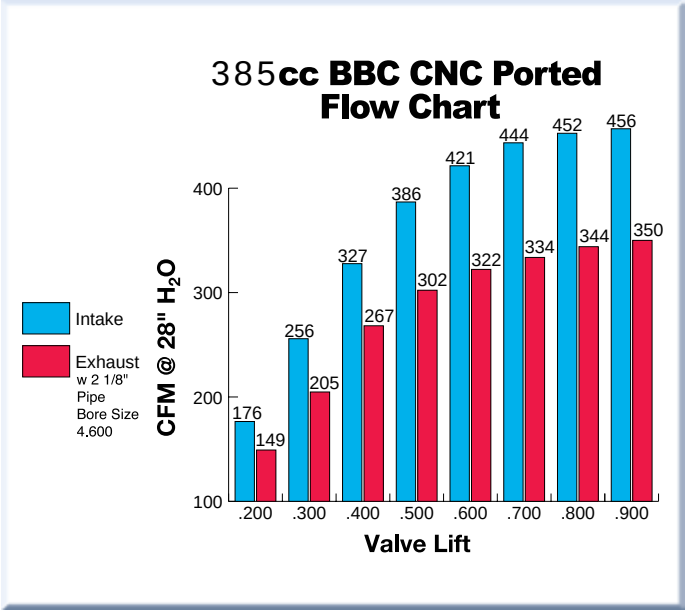
Head Torque with Moly Lube ---------- 75 Ft. Lbs.
Rocker Stud Torque ---------- 55 Ft. Lbs.
Intake Port Gasket, 1.775" x 2.500" with 1/2" radius ---------- AFR #6856
---------- Fel-Pro #1275

***Important:** Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- AFR #6858
Head Gasket ---------- 4.540 bore, Fel Pro #1017, AFR #6850
---------- Mark V-VI-up to 4.500 Bore Fel-Pro #17048 or #1047
---------- Mark V-VI-4.500 to 4.600 Bore Fel-Pro #17049
Head Bolts & Studs ---------- Standard ARP, AFR #6308, #6307 & #6306
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle ---------- AFR #6210
Sugg.. Manifold ---------- Edelbrock #2907 & #2927 for 600+ CI #2896 or #2897
---------- Dart #6200, #6201, #6202 & #6203
---------- Brodix HVH #2000, #2001, #2005 & #2006
Spark Plug Starting Range ---------- Champion C59C Autolite 3932
Combustion Chambers ---------- CNC 121cc
Spring Pocket can be cut to 1.750, no deeper.
Valve Spacing ---------- Standard
Rocker Arms ---------- Standard
Valve Angle ---------- 24°/4° Intake, 15°/4° Exhaust
Angle Mill (milling options available), 104cc Maximum ---------- .009" per cc
Flat Mill (milling options available), 114cc Maximum ---------- .006" per cc

Note: Flat and Angle mills might require a .120 thick intake gasket

Pairs of Cylinder Heads		
Runner Volume/Description	***Combustion Chamber***	***Part #***
385cc CNC Ported w/o Parts	121cc	3580
385cc CNC Ported w/Parts	121cc	2020



165cc SBF Renegade 20° Street Head

The Small Port, High Velocity, Emission Legal Torque Monster

NEW!

Our NEW 165cc Renegade Ford is our re-engineered ground up redesign of our already formidable and proven 20° Ford heads. These new 165cc flow significantly more, averaging a 12 CFM increase from .200-.550 lift than our previous best 165cc. For the ultimate 289 or 302 CID small block Ford street car, you've got to use AFR's all new 165cc emissions legal cylinder heads. Unlike some aftermarket heads, AFR's Ford head (CARB EO #250-3) fits all your stock components; no special parts are required (see footnotes page 47). With lightweight 8mm 1.900 intake valves, 1.600" exhaust valve, and combustion chamber volume of 58cc, and 68cc exhaust ports, AFR's new 165cc Ford head is perfect for 289 and 302 engines operating from idle to 6000 rpm. A 3/4" thick head deck makes the AFR head ideal for nitrous or blower applications. Will not accept rail rocker arms. Hardened push rods required on all applications. Note: 1986 5.0L must have piston notched for clearance.

Note: Hydraulic roller cams typically experience valve float at 6000-6200 rpm because of their fast ramp rates. AFR suggests you upgrade your springs to AFR part #8605, 1.270 O.D. with higher spring pressures to reduce chances of valve float associated with rpm's 6200 or higher.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers, 100% CNC Ported Exhaust Ports, 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 1.900" x 4.903 O.A.L.	AFR #7249
Bead Lock Exhaust Valve, 1.600" x 4.955 O.A.L.	AFR #7250
Pedestal Intake Valve, 1.900 x 5.079 O.A.L.	AFR #7262
Pedestal Exhaust Valve, 1.600 x 5.100 O.A.L.	AFR #7264
PAC Racing Springs 1.290" OD Hydraulic Roller Dual Valve Spring, 135 lbs on seat .600" maxiumum lift Max RPM 6300-6500	AFR #8017
Manley 7° Chrome Moly Retainers	AFR #8514
7° Bead Locks Valve Keepers	AFR #9007
3/8" Rocker Studs	AFR #6410
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9059
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051
Thermactor Air Injector	AFR #6226

Specifications, Features, and Optional Supporting Components

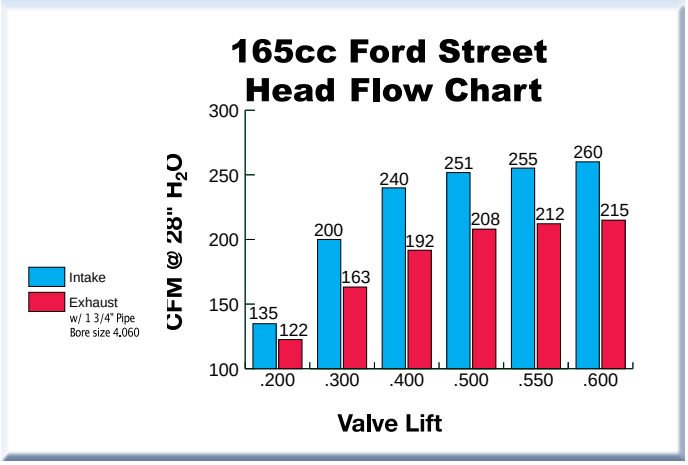
Head Torque with Moly Lube ---------- 65-70 Ft. Lbs. with 7/16" stud
Rocker Stud Torque ---------- 55 Ft. Lbs.
Rocker Pedestal Torque ---------- 25-30 Ft. Lbs.
Intake Port Gasket, 1.200" x 2.000" w/ 3/8" radius ---------- AFR #6828
---------- Fel-Pro 1250

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ---------- Fel-Pro #1415, AFR #6837
Head Gasket ---------- Fel-Pro #1011-1, AFR #6808
Head Bolts & Studs ---------- Standard ARP, AFR #6323 & #6322
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle ---------- AFR #6207
Suggested Manifold ---------- RPM Performer, Performer
Spark Plug Starting Range ---------- Autolite 3924
Combustion Chambers ---------- 58cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing ---------- Standard
Rocker Arms ---------- Standard, will not accept rail rocker arms
Valve Angle ---------- Standard
Angle Mill (10cc Maximum Optional Mill) ---------- .008" per cc
Flat Mill (4cc Maximum Optional Mill) ---------- .006" per cc

Pairs of Cylinder Heads			
Runner Volume	Stud or Pedestal	Combustion Chamber	Part #
CNC Street Porting			
*165cc	Stud	58cc	1402
*165cc	Pedestal	60cc	1472

*Only models with heat riser (marked by an asterisk) are emissions legal, all others are not legal for sale or use on pollution controlled motor vehicles in the United States.



185cc SBF Renegade 20° Street Head

The Ultimate Bolt-On Emission Legal Street/ Strip Weapon

NEW!

Our NEW 185cc Renegade Ford is a clean sheet ground up redesign of our already formidable and proven 20° Ford heads. These new 185cc flow drastically more, averaging a 17 CFM increase from .200-.600 lift than our previous best 185cc. If you're looking for a decisive advantage for your small block Ford street/strip car, check out AFR's all new 185cc intake port emissions legal (CARB EO #250-3) cylinder heads. With lightweight 8mm 2.020 intake valves, 1.600 exhaust valves, combustion chamber volumes of 58cc or 72cc, and 70cc exhaust ports, AFR's new 185cc Ford head is designed for 302-367 cid engines operating from 1500 rpm to 6500 rpm. A 3/4" thick head deck makes the AFR head ideal for nitrous or blower applications. Will not accept rail rocker arms. Hardened push rods required on all applications. High flow 2.020 valves might require aftermarket pistons notched for valve clearance. Note: 1986 5.0L must have pistons notched for clearance. See footnotes page 47 for additional information.

Note: Hydraulic roller cams typically experience valve float at 6000-6200 rpm because of their fast ramp rates. AFR suggests you upgrade your springs to AFR part #8605, 1.270 O.D. with higher spring pressures to reduce chances of valve float associated with rpm's 6200 or higher.

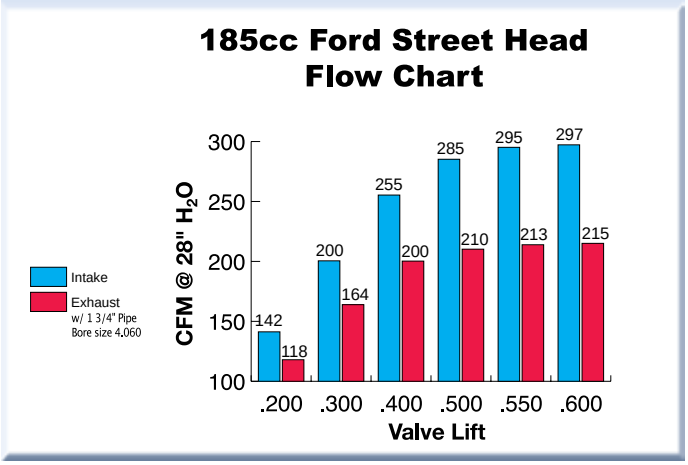
Specifications, Features, and Optional Supporting Components

Head Torque with Moly Lube ---------- 100 Ft. Lbs. with 1/2" stud
Rocker Stud Torque ----------55 Ft. Lbs.
Rocker Pedestal Torque ----------25-30 Ft. Lbs.
Intake Port Gasket, 1.28" x 2.100" w/ 3/8" radius--------AFR #6832 / Fel-Pro #1262
Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*
Exhaust Port Gasket ----------Fel Pro #1415, AFR #6837
Head Gasket ---------- Fel Pro #1011-1, AFR #6808
Head Bolts & Studs ---------- Standard ARP, AFR #6318 & #6317
Head Bolt Washers ---------- Manley, AFR #6320
Head Bolt Bushings, 1/2"-7/16"---------- Standard ARP, AFR #6324
Stud Girdle---------- AFR #6207
Suggested Manifold ----------RPM Performer, Vic Jr.
Spark Plug Starting Range----------Autolite 3924
Combustion Chambers ----------58cc, 60cc, or 72cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing---------- Standard
Rocker Arms---------- Standard, will not accept rail rocker arms
Valve Angle ---------- Standard
Angle Mill (10cc Maximum Optional Mill)----------.008" per cc
Flat Mill (4cc Maximum Optional Mill) ----------.006" per cc

Basic Package Components	Part #
100% CNC Ported Combustion Chambers, 100% CNC Ported Exhaust Ports, 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.020" x 4.903 O.A.L.	AFR #7251
Bead Lock Exhaust Valve, 1.600" x 4.955 O.A.L.	AFR #7250
Pedestal Intake Valve, 2.020 x 5.079 O.A.L.	AFR #7263
Pedestal Exhaust Valve, 1.600 x 5.100 O.A.L.	AFR #7264
PAC Racing Springs 1.290" OD Hydraulic Roller Dual Valve Spring, 135 lbs on seat .600" maxiumum lift Max RPM 6300-6500	AFR #8017
Manley 7° Chrome Moly Retainers	AFR #8514
7° Bead Locks Valve Keepers	AFR #9007
3/8" Rocker Studs	AFR #6410
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9058
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051
Thermactor Air Injector	AFR #6226

Pairs of Cylinder Heads			
Runner Volume	Stud or Pedestal	Combustion Chamber	Part #
CNC Street Porting			
*185cc	Stud	58cc	1422
*185cc	Pedestal	60cc	1492
*185cc	Stud	72cc	1420

* Only models with heat riser (marked by an asterisk) are emissions legal, all others are not legal for sale or use on pollution controlled motor vehicles in the United States.



195cc SBF Renegade 20° Street Head

The Maximum Bolt-On Emission Legal Street/ Strip Weapon

NEW!

Our NEW 195cc Renegade Ford is debuting in our lineup and almost defies the laws of physics flowing a whopping 315 CFM from a modest sized intake port. This head comfortably outflows its 10cc larger predecessor and is on the heels of our previous best SBF inline head. If you want the maximum emission legal street/strip horsepower small block Ford head, check out AFR's all new 195cc intake port emissions legal (CARB EO #250-3) cylinder heads. With lightweight 8mm 2.050 intake valves, 1.600 exhaust valves, combustion chamber volumes of 58cc or 72cc, and 70cc exhaust ports which are raised .125 higher than stock. AFR's new 195cc Ford head is designed for 367-392 cid engines operating from 2000 rpm to 7000 rpm. A 3/4" thick head deck makes the AFR head ideal for nitrous or blower applications. Will not accept rail rocker arms. Hardened push rods required on all applications. High flow 2.050 valves might require aftermarket pistons notched for valve clearance. Note: 1986 5.0L must have pistons notched for clearance. Exhaust port is raised .125 (1/8") higher than stock, this rarely affects header or chassis clearances. See footnotes page 47 for additional information.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers, 100% CNC Ported Exhaust Ports, 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.050" x 4.903 O.A.L.	AFR #7252
Bead Lock Exhaust Valve, 1.600" x 4.955 O.A.L.	AFR #7250
PAC Racing Springs 1.270" OD Hydraulic Roller Dual Valve Spring, 155 lbs. on seat, .650" maximum lift (upgrades available), Max RPM 7000-7200	AFR #8019
Manley 7° Chrome Moly Retainers	AFR #8514
7° Bead Locks Valve Keepers	AFR #9007
3/8" Rocker Studs	AFR #6410
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats	AFR #9058
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051
Thermactor Air Injector	AFR #6226

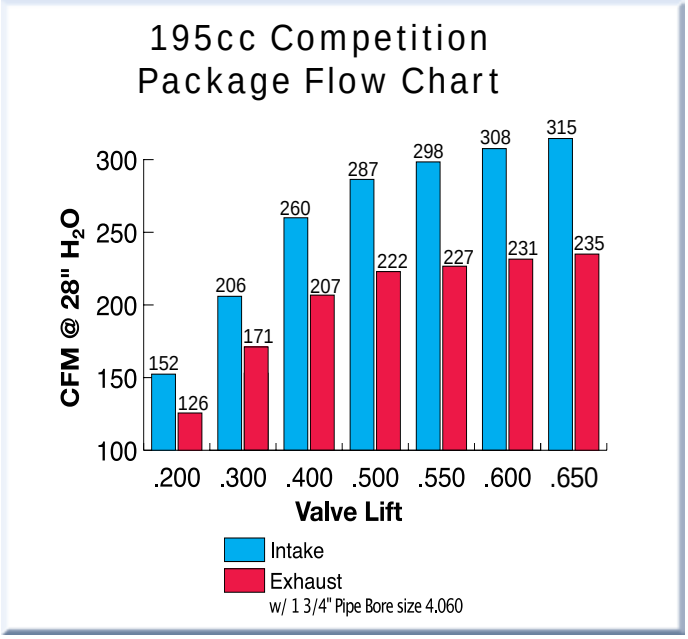
Specifications, Features, and Optional Supporting Components

Head Torque with Moly Lube ---------- 100 Ft. Lbs. with 1/2" stud
Rocker Stud Torque ----------55 Ft. Lbs.
Rocker Pedestal Torque ----------25-30 Ft. Lbs.
Intake Port Gasket, 1.280" x 2.100" w/ 3/8" radius ------AFR #6832 / Fel-Pro #1262
Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*
Exhaust Port Gasket ----------Fel Pro #1415, AFR #6837
Head Gasket ---------- Fel Pro #1011-1, AFR #6808
Head Bolts & Studs ---------- Standard ARP, AFR #6318 & #6317
Head Bolt Washers ---------- Manley, AFR #6320
Head Bolt Bushings, 1/2"-7/16"---------- Standard ARP, AFR #6324
Stud Girdle---------- AFR #6207
Suggested Manifold ----------RPM Performer, Vic Jr.
Spark Plug Starting Range----------Autolite 3924
Combustion Chambers ----------58cc, 60cc, or 72cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing---------- Standard
Rocker Arms---------- Standard, will not accept rail rocker arms
Valve Angle ---------- Standard
Angle Mill (10cc Maximum Optional Mill)----------.008" per cc
Flat Mill (4cc Maximum Optional Mill) ----------.006" per cc

Note: Milling Head Deck Will Affect Flow Numbers.

Pairs of Cylinder Heads			
Runner Volume	***Stud or Pedestal***	***Combustion Chamber***	***Part #***
CNC Ported Competition Package			
195cc	Stud	58cc	1426
195cc	Stud	72cc	1428

* Only models with heat riser (marked by an asterisk) are emissions legal, all others are not legal for sale or use on pollution controlled motor vehicles in the United States.



205cc SBF Renegade 20° Race Heads

The Most Powerful Standard Street/Strip Head Ever

NEW!

Our NEW 205cc Renegade Ford is a clean sheet ground up redesign of our already formidable and proven 20° Ford heads. The new 205cc flows an incredible 21 CFM more at peak flow while still averaging 7 CFM more at .200 to .500 lift over our previous best 205cc runner. If you're looking for the most powerful standard type small block Ford street/strip head, AFR's 205 head is your answer. With lightweight 8mm 2.080 intake valves and 1.600 exhaust valves this head moves tremendous volumes of air through conservative runner volumes, spelling big torque and horsepower numbers. Comes available with combustion chamber volumes of 58cc or 72cc. Exhaust port and bolt pattern are raised .125 (1/8") higher than stock, this rarely affects header or chassis fitment. AFR's new 205cc is the ultimate choice for 331 through 392 engines operating from 3500 RPM to 8000 RPM. AFR's trademark 3/4" thick head deck makes them ideal for heavy nitrous or blower applications.

Note: 2.080 valves will require aftermarket pistons notched for valve clearance. See footnotes page 47 for additional information.

Specifications, Features, and Optional Supporting Components

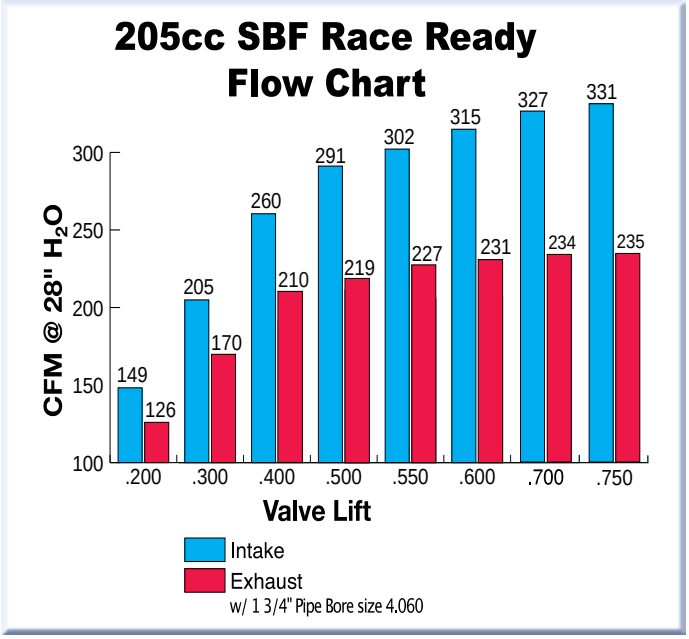
Head Torque with Moly Lube ---------- 100 Ft. Lbs. with 1/2" stud
Rocker Stud Torque ----------55 Ft. Lbs.
Intake Port Gasket, 1.280" x 2.100" w/ 3/8" radius ------ AFR#6832 /Fel-Pro #1262

***Important:** Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ----------Fel Pro #1487, AFR #6839
Head Gasket ---------- Fel Pro #1011-1, AFR #6808
Head Bolts & Studs ---------- Standard ARP, AFR #6318,6317
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle---------- AFR #6207
Suggested Manifold ----------Vic Jr., Super Victor
Spark Plug Starting Range----------Autolite 3922
Combustion Chambers ----------58cc or 72cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing---------- Standard
Rocker Arms---------- Standard (will not accept rail rockers)
Valve Angle ---------- Standard
Angle Mill (6cc Maximum Optional Mill) ----------.008" per cc
Flat Mill (3cc Maximum Optional Mill) ----------.006" per cc

Basic Package Components	Part #
100% CNC Ported Combustion Chambers, 100% CNC Ported Exhaust Ports, 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.080" x 5.006 O.A.L.	AFR #7255
Bead Lock Exhaust Valve, 1.600" x 5.024 O.A.L.	AFR #7254
PAC Racing Springs 1.550" OD Roller Solid Dual Valve Spring 225 lbs. on seat, .710" maximum lift Max RPM 7200-7400	AFR #8000
Manley 10° 4140 Chrome Moly Steel Retainers	AFR #8511
10° Bead Locks Valve Keepers	AFR #9009
ARP 7/16" Rocker Studs	AFR #6405
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8048
Intake Valve Seats	AFR #9058
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051

Pairs of Cylinder Heads			
Runner Volume	Rocker Type	Combustion Chamber	Part #
Race Ready CNC Ported Heads			
205cc	Stud	58cc	1450
205cc	Stud	72cc	1458



220cc SBF Renegade 20° Race Heads

The Best 20° In-Line Head You Can Buy

NEW!

Our NEW 220cc Renegade Ford is a fresh addition to our lineup that adds quite punch to our already formidable and proven 20° Ford heads. These new 220cc flow a massive 340 CFM, averaging an 11 CFM increase from .200-.800 lift over our previous best SBF in spite of its 5cc smaller intake runner. This is the best small block Ford 20° in line head you'll find to provide huge horsepower to out run your competition. With the largest intake and exhaust runner volumes for our in-line Ford line up, these are the ultimate for NMRA Renegade or Hot Street classes. With lightweight 8mm 2.100 intake valves and 1.570 exhaust valves these heads move massive amounts of air. Available with combustion chamber volumes of 58cc or 72cc. Exhaust ports and bolt pattern are raised .375 (3/8") higher than stock, this rarely affects header or chassis fitment. AFR's new 220cc is the perfect choice for 347 through 427 CI Windsor engines operating between 4500 to 8500 rpm. Our trademark 3/4" thick head deck makes them ideal for heavy nitrous or blower applications.

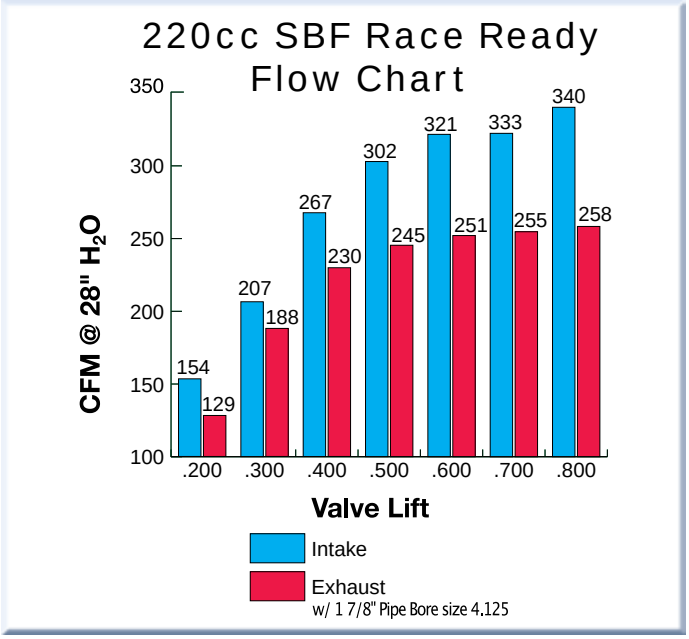
Note: 2.100 valves will require aftermarket pistons notched for valve clearance. See footnotes page 47 for additional information.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 2.100" x 5.006 O.A.L.	AFR #7256
Bead Lock Exhaust Valve, 1.570" x 5.024 O.A.L.	AFR #7248
PAC Racing Springs 1.550" OD Roller Dual Valve Spring 225 lbs. on seat, .710" maximum lift Max RPM 7200-7400	AFR #8000
Manley 10º 4140 Chrome Moly Steel Retainers	AFR #8511
10º Bead Locks Valve Keepers	AFR #9009
ARP 7/16" Rocker Studs	AFR #6405
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Seat	AFR #8048
Intake Valve Seats	AFR #9058
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051

Specifications, Features, and Optional Supporting Components

Head Torque with Moly Lube ---------- 100 Ft. Lbs. with 1/2" stud
Rocker Stud Torque ----------55 Ft. Lbs.
Intake Port Gasket, 1.400" x 2.250" w/ 3/8" radius ---- AFR #6812 or Fel-Pro 1262R
Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*
Exhaust Port Gasket ----------Fel Pro #1487, AFR #6839
Head Gasket ----------Fel Pro #1134 or 1135, AFR #6808
Head Bolts & Studs ---------- OSK Long, Standard ARP, AFR #6318,6317
Head Bolt Washers ---------- Manley, AFR #6320
Stud Girdle---------- AFR #6207
Suggested Manifold ---------- Vic Jr., Super Victor
Spark Plug Starting Range----------Autolite 3922
Combustion Chambers ---------- 58cc or 72cc
Spring Pocket can be cut to 1.580, no deeper.
Valve Spacing 60/40---------- Standard
Rocker Arms---------- Standard (will not accept rail rockers)
Valve Angle ---------- Standard
Angle Mill (6cc Maximum Optional Mill) ----------.008" per cc
Flat Mill (3cc Maximum Optional Mill) ----------.006" per cc

Pairs of Cylinder Heads			
Runner Volume	Rocker Type	Combustion Chamber	Part #
Race Ready CNC Ported Heads			
220cc	Stud	58cc	1451
220cc	Stud	72cc	1456
Stage 1 Bare Heads, No Porting or Parts			
200cc	Stud	53cc	146



165cc, 185cc & 195cc SBF Street/Strip Renegade 20° Heads

No Heat Riser Or Air Pump Holes For The Maximum Street/Strip Performance

Our new Renegade Ford heads are a re-engineered ground up redesign to our already formidable and proven 20° heads. These heads come ready for the maximum street/strip Small Block Ford performance possible. They are not emissions legal. With the 165 coming with lightweight 8mm 1.900 intake and 1.600 exhaust valves and the 185 sporting 8mm 2.020 intake and 1.600 exhaust valves. Our 165cc features 58cc combustion chambers while the 185cc and 195cc gives both 58cc and 72cc options with 70cc exhaust ports. The 195cc feature 8mm 2.050 intake & 1.600 exhaust valves for max performance. Exhaust port is raised .125 on 195cc head. With AFR's trademark 3/4" thick head deck, it's no problem handling that additional cylinder pressure. Each head is also drilled for the larger 1/2" head bolt hole for maximum head gasket retention as a standard feature of this serious race piece in street disguise.

Note: Hydraulic roller cams typically experience valve float at 6000-6200 rpm because of their fast ramp rates. AFR suggests you upgrade your springs to AFR part #8605, 1.270 O.D. with higher spring pressures to reduce chances of valve float associated with rpm's 6200 or higher. 195cc competition package exhaust port is raised .125. See footnotes on page 47 for additional information.

Basic Package Components	Part #
100% CNC Ported Combustion Chambers 100% CNC Ported Exhaust Ports 100% CNC Ported Intake Ports Competition 5 Angle Valve Job	
Bead Lock Intake Valve, 1.900 x 4.903 O.A.L.	AFR #7249
Bead Lock Intake Valve, 2.020" x 4.903 O.A.L.	AFR #7251
Bead Lock Intake Valve, 2.050" x 4.903 O.A.L.	AFR #7252
Exhaust Valve, 1.600" x 4.955 O.A.L.	AFR #7250
PAC Racing Springs 1.290" OD Hydraulic Roller Dual Valve Spring, 135 lbs. on seat, .600" maximum lift (upgrades available) Max RPM 6300-6500	Street Head AFR #8017
1.270" OD Hydraulic Roller Valve Spring with dampener, 155 lbs. on seat, .650" maximum lift, Max RPM 7000-7200	Comp PKG AFR #8019
Manley 7° Chrome Moly Retainers	AFR #8514
7° Bead Locks Valve Keepers	AFR #9007
3/8" Rocker Studs	AFR #6410
Adjustable 5/16" Guide Plates	AFR #6103
Viton Valve Seals	AFR #6612
Hardened Spring Cup	AFR #8042
Intake Valve Seats 165cc	AFR#9059
Intake Valve Seats 185cc	AFR #9058
Exhaust Valve Seats	AFR #9069
Bronze Valve Guides	AFR #9051

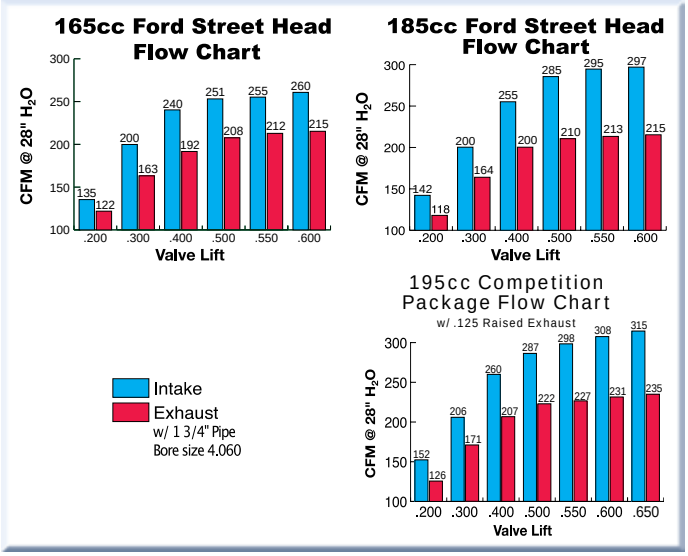
Specifications, Features, and Optional Supporting Components

Head Torque with Moly Lube ---------- 100 Ft. Lbs. with 1/2" stud
Rocker Stud Torque ----------55 Ft. Lbs.
165cc Intake Port Gasket, 1.200" x 2.000" w/ 3/8" radiusAFR #6828 / Fel-Pro #1250
185 & 195cc Intake Port Gasket, 1.250" x 2.050" w/ 3/8" radiusAFR #6832/Fel-Pro #1262

Important: *Do not port match your intake manifold to Fel-Pro gasket as it does not precisely fit AFR heads. See picture on page 6.*

Exhaust Port Gasket ----------Fel Pro #1415, AFR #6837
Head Gasket ---------- Fel Pro #1011-1, AFR #6808
Head Bolts & Studs ---------- Standard ARP, AFR #6323 & #6322
Head Bolt Washers ---------- Manley, AFR #6320
Head Bolt Bushings, 1/2"-7/16"---------- Standard ARP, AFR #6324
Stud Girdle---------- AFR #6207
Suggested Manifold ----------RPM Performer, Vic Jr.
Spark Plug Starting Range----------Autolite 3924
Combustion Chambers ----------58cc or 72cc
Spring Pocket can be cut to 1.625, no deeper.
Valve Spacing---------- Standard
Rocker Arms---------- Standard, will not accept rail rocker arms
Valve Angle ---------- Standard
Angle Mill (10cc Maximum Optional Mill)----------.008" per cc
Flat Mill (4cc Maximum Optional Mill) ----------.006" per cc

Pairs of Cylinder Heads			
Runner Volume	**Rocker Type**	**Combustion Chamber**	**Part #**
185cc Street CNC Ported Heads			
185cc	Stud	58cc	1388
185cc	Stud	72cc	1387
CNC Ported Competition Package			
195cc	Stud	58cc	1381
195cc	Stud	72cc	1383
165cc Street CNC Ported Heads			
165cc	Stud	58cc	1399

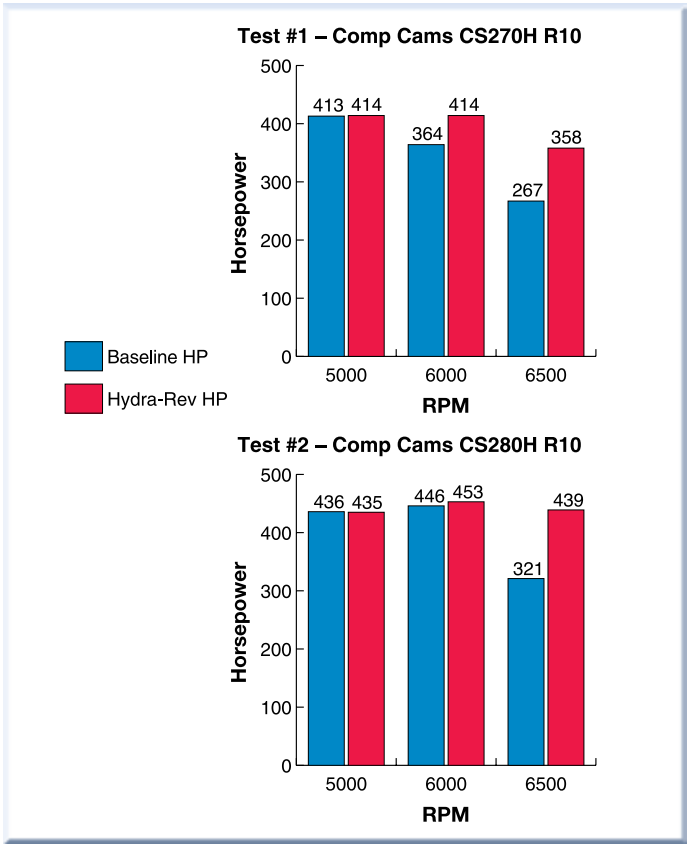


Hydra-Rev

Hydra-Rev Can Add More Than 100 Horsepower On The Top End!

Hydra-Rev Kit For OEM Lifters

Hydra-Rev Kit For Aftermarket Lifters



Aftermarket Style Lifter

With today's valve train components and the steep acceleration rates on hydraulic roller cams, it isn't possible to properly control the valves and valve train by simply increasing valve spring pressure. This usually results in collapsed lifters. AFR has created a solution! The Hydra-Rev applies additional spring pressure to the lifter body, not the plunger. This vastly improves valvetrain stability which results in more power at higher RPM without any loss in low end torque. In testing (see the dyno charts below) Hydra-Rev increased power at 6500 RPM with Comp Cams' CS280HR10 by more than 100 horsepower!

In addition, Hydra-Rev eliminates the danger and the potential damage to components that valve float can cause. The easy to install Hydra-Rev Kits come complete with all the components you need and requires no additional machining or modifications when installed on stock or aftermarket cylinder heads. Hydra-Rev is available now for Chevrolet V8 small block except the cast iron LT1 Impala and Vortec truck heads, Pro Action Iron Lightning or Dart Iron Eagle. If heads are already installed on the engine, a spring installation tool will be required.

Hydra-Rev Kit Part Numbers

Small Block Chevy* w/factory lifters---------- 6155
Small Block Chevy* w/Seal Power or
Speed Pro style lifters ---------- **6150

** Except the cast iron LT1 Impala,Vortec truck heads, ProAction Iron Lightning or Dart Iron Eagle.*

***Will not fit Crane or Lunati Lifters*

These tests were conducted in AFR's digitally controlled dyno facility using a 350 cid Small Block Chevy equipped with AFR 195cc aluminum street heads, Edelbrock RPM Performer #7101, 600 cfm Holley carburetor, 10 to 1 compression ratio, and the camshafts shown in the title of each test.

Valves

Note: AFR 8mm Titanium Valves have a chrome nitrate on the seat area and cannot be refaced or ground on.

AFR offers a complete selection of high quality valves to suit virtually any application. For the street, AFR's superb 1-piece, swirl polished valves with chromed stems offer long life and great flow characteristics to help your ride be the killer machine it should be. For racing use, AFR's premium stainless steel, 1-piece, swirl polished valves with chromed stems are the perfect choice. If ultra-high RPM is your goal, you should consider AFR's lightweight titanium valves which help reduce valve float and improve valvetrain stability for more power.

Titanium Valves

Description	Part Number
Ferrea Titanium Valve, 1.880 + .100 w/ Tip	7500
Ferrea Titanium Valve, 2.250 + .250 w/ Tip	7501
Ferrea Titanium Valve, 2.300 + .250 w/ Tip	7502

8MM Valves

Description	Part Number
SBC/SBF 8mm 1.600 Street Exhaust Valve	7250
SBC/SBF 8mm 2.020 Street Intake Valve	7251
SBC/SBF 8mm 2.050 Street Intake Valve	7252
SBC/SBF 8mm 1.600 X .100L Race Exhaust Valve	7254
SBC/SBF 8mm 2.080 X .100L Race Intake Valve	7255
SBC/SBF 8mm 2.100 X .100L Race Intake Valve	7256
SBC/SBF 8mm 2.020 X .100L Race Intake Valve	7257
SBC/SBF 8mm 2.050 X .100L Race Intake Valve	7258
SBC/SBF 8mm 2.080 Race Intake Valve	7259
SBC/SBF 8mm 1.600 X .100L Inconel Exhaust Valve	7260

11/32 Stainless Steel, 1-Piece, Swirl Polished Street Valves With Chromed Stems

Description	Part Number
Chevy Small Block, 1.600", Std. Length, AFR Custom	7219
Chevy Small Block, 1.600", Stock Length	7220
Chevy Small Block, 1.600", .100" Over Stock Length	7225
Chevy Small Block, 2.020", Stock Length	7204

11/32 Stainless Steel, 1-Piece, Swirl Polished High Performance Valves With Chromed Stems

Description	Part Number
Chevy Small Block, 1.600", .050" Over Stock Length	7057
Chevy Small Block, 1.600", .100" Over Stock Length	7056
Chevy Small Block, 1.600", .200" Over Stock Length	7058
Chevy Small Block, 2.020", .050" Over Stock Length	7002
Chevy Small Block, 2.020", .100" Over Stock Length	7006
Chevy Small Block 2.080", .050" Over Stock Length	7018
Chevy Small Block, 2.080", .100" Over Stock Length	7026
Chevy Small Block, 2.100", .050" Over Stock Length	7031
Chevy Small Block, 2.100", .100" Over Stock Length	7037
Chevy Big Block, 1.880", 11/32" Stem, +.100" Long	7630
Chevy Big Block, 2.190", 11/32" Stem, Stock Length	7601
Chevy Big Block, 2.250", 11/32" Stem, +.250" Long	7620
Chevy Big Block, 2.300", 11/32" Stem, +.250" Long	7626

See price list for complete list of services

Cylinder Head and Valvetrain Components

AFR Offers a Complete Selection of:

Cylinder Head and Valvetrain Components

Valve Seals

Description	Part Number
AFR Rubber Valve Stem Seal, .530" x 11/32"	6611
AFR LS1 Valve Stem Seal	6612

Retainers

Description	Part Number
AFR 10º Titanium Retainer, 1.550" O.D.	8505
AFR 10º Chrome Moly Retainer, 1.450" O.D.	8510
AFR 7º Chrome Moly Retainer, 1.250" O.D.	8514
AFR 10º Chrome Moly Retainer, 1.550" O.D.	8511

Valve Locks

Description	Part Number
AFR 10º Valve Locks, 11/32" standard, set of 16	9005
AFR 7º Valve Locks, 8mm - Bead Lock Style	9007
AFR 10º Valve Locks, 8mm - Bead Lock Style	9009

Lash Caps

Description	Part Number
AFR Lash Cap, 11/32"	6608
AFR Lash Cap, 8mm	6609

AFR Hydraulic Valve Springs

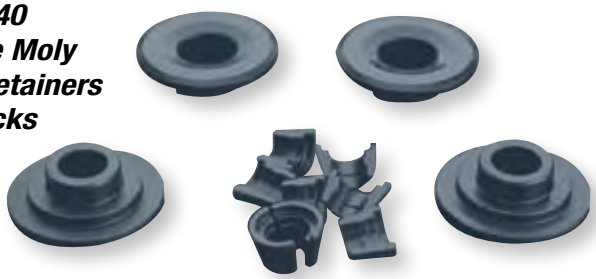
AFR Roller Valve Springs

Valve Seats and Guides

Description	Part Number
AFR Ductile Iron Intake Valve Seat, 2.200" O.D.	9060
AFR Ductile Iron Oversize Intake Valve Seat, +.010	9065
AFR Ductile Iron Intake Valve Seat, Big Block Chevy	9062
AFR Ductile Iron Exhaust Valve Seat, 1.695" O.D.	9070
AFR Ductile Iron Oversize Exhaust Valve Seat, +.010	9066
AFR Bronze Valve Guide, .502" O.D.	9050
AFR Bronze Valve Guide, .505" O.D.	9056
AFR Bronze Big Block Valve Guide, .545 O.D.	9055

AFR Titanium Retainers and Locks

AFR 4140 Chrome Moly Steel Retainers and Locks



Valve Springs, Spring Cups, Spring Seats, and Shims

AFR Valve Springs are wound with the finest quality spring steel to provide all the muscle you need to control those wild cam profiles.

Description	Part Number
AFR Roller Lifter Spring, 1.550"	8000
AFR Flat Tappet Spring, 1.550"	8016
AFR Hydraulic Lifter Spring, 1.290"	8017
Valve Spring Shim, .015", 1.450" O.D.	6325
Valve Spring Shim, .030", 1.450" O.D.	6326
Valve Spring Shim, .060", 1.450" O.D.	6327

Cylinder Head and Valvetrain Components

AFR Offers a Complete Selection of:

AFR Stud Girdle and Adjusting Nuts

*Disclaimer: Color and style of girdle may vary.

See price list for complete list of services

Rocker Studs

Description	Part Number
AFR Rocker Studs, 3/8", standard length, set of 16	6410
AFR Rocker Studs, 7/16", standard length, set of 16	6405

Rocker Arms

Description	Part Number
AFR's high quality rocker arms can help you get the power, control, and reliability that you need from your valvetrain.	
AFR Roller Rockers, 3/8"x1.5, set of 16	6025
AFR Roller Rockers, 3/8"x1.6, set of 16	6026
AFR Roller Rockers, 7/16"x1.5, set of 16	6027
AFR Roller Rockers, 7/16"x1.6, set of 16	6028
T&D Shaft Rocker Kit, Small Block Chevy	6053

Cylinder Heads Options

Description	Part Number
Machine for Stahl Exhaust bolt pattern	4027
Machine for stream holes for factory GM 400 block	4028
Hard anodized for marine applications	4029
Angle Mill heads and correct intake surface SBC/SBF/BBC	4038
Flat mill heads BBC/LSx	4039
Flat mill heads and correct intake surface SBC/SBF	4040

Stud Girdles

Description	Part Number
AFR Chevy Small Block Eliminator Stud Girdle Bars, Standard, Pair	6200
AFR Chevy Small Block Eliminator Stud Girdle Bars, Offset, Pair	6208
AFR Stud Girdle Adjusting Nuts, 3/8", set of 16	6225
AFR Stud Girdle Adjusting Nuts, 7/16", set of 16	6220
AFR Small Block Ford Stud Girdle	6207
AFR Big Block Chevy Stud Girdle	6210
AFR Big Block Chevy Stud Girdle Adjusting Nuts (Intake)	6211
AFR Big Block Chevy Stud Girdle Adjusting Nuts (Exhaust)	6212

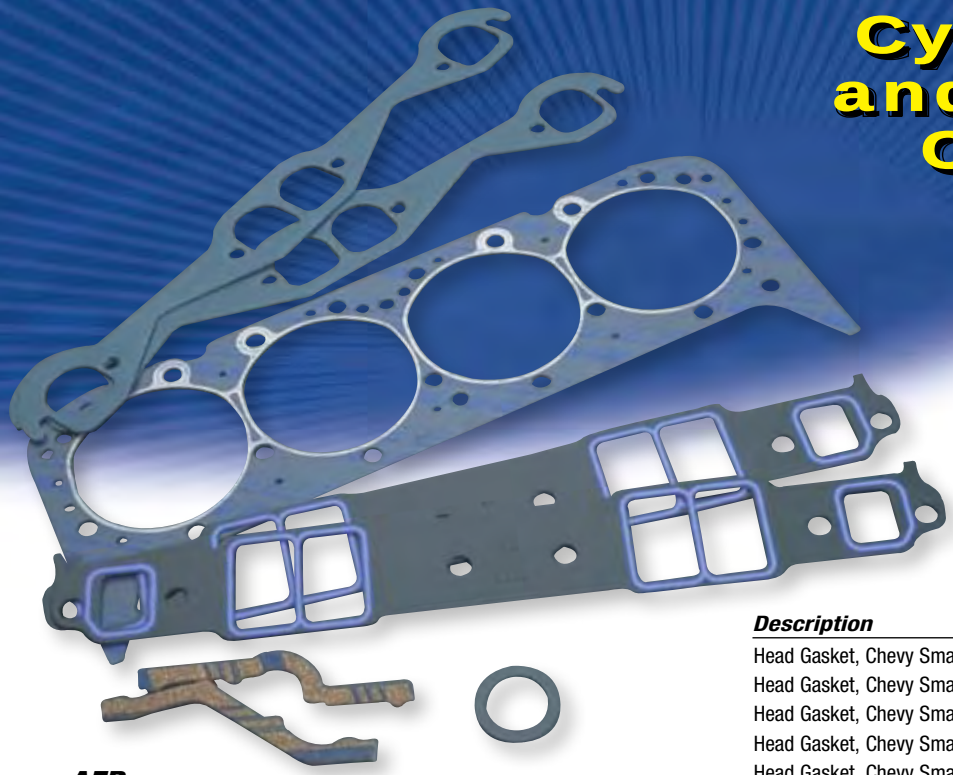
AFR Roller Rockers

Guide Plates

Description	Part Number
AFR Chevy Small Block (except 227) Guide Plates, set of 8	6110
AFR Ford Small Block Guide Plates, 5/16", set of 8	6107
Isky 5/16" Adjustable Guide Plates, set of 8	6104

Cylinder Head and Valvetrain Components

AFR Offers a Complete Selection of:



AFR Gaskets

AFR Head Studs, Nuts, and Washers

Fel Pro Gaskets

Description	*Part Number*
Head Gasket, Chevy Small Block, Fel Pro #1034	6807
Head Gasket, Chevy Small Block, 4.166” bore, Fel Pro #1003	6800
Head Gasket, Chevy Small Block, 4.125” bore, Fel Pro #1074	6803
Head Gasket, Chevy Small Block, 4.190” bore, Fel Pro #1004	6801
Head Gasket, Chevy Small Block, 4.200” bore, Fel Pro #1014	6802
Head Gasket, Chevy Big Block, 4.540” bore, Fel Pro #1017	6850
Head Gasket, Chevy Big Block, 4.630” bore, Fel Pro #1057	6852
Head Gasket, Ford Small Block, 1962-82, 4.100” bore, Fel Pro #1011-1	6808
Head Gasket, Ford Small Block, 1983-93, 4.100” bore, Intake Gasket, Chevy Small Block, 1.250”x2.040”, LT1, Fel Pro #1284	6827
Intake Gasket, Chevy Small Block, 1.280”x2.090”, Fel Pro #1205	6810
Intake Gasket, Chevy Small Block, 1.250”x2.100”, LT4, GM	0000
Intake Gasket, Chevy Small Block, Raised Runner, 1.310”x2.180”, Fel Pro #1206	6820
Intake Gasket, Chevy Small Block, Raised Runner, 1.310”x2.210”, Fel Pro #1263	6826
Intake Gasket, Chevy Small Block, 1.250”x2.150”, Fel Pro #1282	6831
Intake Gasket, Chevy Small Block, 1.380”x2.280”, Fel Pro #1207	6821
Intake Gasket, Chevy Small Block, 1.340”x2.210”, .120” thick, Fel Pro #1266	6825
Intake Gasket, Chevy Small Block, 1.380”x2.280”, .120” thick, Fel Pro #1267	6830
Intake Gasket, Chevy Big Block, 1.820”x2.540”, Fel Pro #1211	6855
Intake Gasket, Ford Small Block, 1.200”x2.000”, Fel Pro #1250	6828
Exhaust Gasket, Chevy Small Block 180cc & 195cc Heads, Fel Pro #1404	6834
Exhaust Gasket, Chevy Small Block 210cc, 215cc, 220cc, & 227cc Heads, Fel Pro #1406	6835
Exhaust Gasket, Chevy Big Block Aluminum Heads, Fel Pro #1412	6858
Exhaust Gasket, Ford Small Block Aluminum Heads, Fel Pro #1415	6837
Valve Cover Gasket, Chevy Small Block, Fel Pro #1604	6838

Head Studs, Head Bolts, Head Bolt Sleeves, and Head Bolt Washers

Description	*Part Number*
ARP Head Stud Kit, std. 12-point, SBC, engine set	6305
ARP Head Stud Kit, 12-point, SBC, 18º Head, engine set	6306
ARP Head Stud Kit, std. 12-point, BBC, engine set	6307
ARP Head Bolt Kit, std., Small Block Chevy, engine set	6310
ARP Head Bolt Kit, abbreviated 12-point, SBC, 6 bolt set	6311
ARP Head Bolt Kit, 12-point, SBC, 18º Head, engine set	6309
ARP Head Bolt Kit, std. 12-point, BBC	6308
ARP Head Nut Kit, Abbreviated 12-point, SBC, set of 6	6301
ARP Head Bolt Washer Kit, Small Block Chevy	6320
ARP Head Bolt Sleeve, Small Block Chevy	6054
ARP 12-point x 7/16” nut	6315

See price list for complete list of services

AFR Head Bolts, Nuts, and Washers

Valve Covers

CNC Engraved, Pictures Don't Do These Justice. Super Trick Looking!

#6705

#6717

Tall Valve Covers

Description	*Part Number*
AFR SBC Tall Valve Covers, Black Powder Coat, Includes rubber grommets	6705
AFR SBC Tall Valve Covers, Polished Aluminum, Includes rubber grommets	6704
AFR SBF Tall Valve Covers, Black Powder Coat, Includes rubber grommets	6715
AFR SBF Tall Valve Covers, Polished Aluminum, Includes rubber grommets	6714

#6714

Valve Covers

#6723

#6731- Breather

#6706

Standard Valve Covers

Description	Part Number
AFR SBC Standard Valve Covers, Black Powder Coat, Includes rubber grommets	6707
AFR SBC Standard Valve Covers, Polished Aluminum, Includes rubber grommets	6706
AFR SBF Standard Valve Covers, Black Powder Coat, Includes rubber grommets	6717
AFR SBF Standard Valve Covers, Polished Aluminum, Includes rubber grommets	6716
AFR BBC Standard Valve Covers, Black Powder Coat, Includes rubber grommets	6723
AFR BBC Standard Valve Covers, Polished Aluminum, Includes rubber grommets	6722

See website for photos of part number

#6722

#6731- PCV Valve

Intake Manifolds Patented Process & Design

- 15 plus horsepower & torque more than competing manifolds!
- Weighs 9-11 lbs less than aluminum (Depending on model).
- Modular design. Interchangeable Runners
- Reduce carburetor vibration 5%
- Rubber Viton Gaskets - No Leaks.
- Composite Plastic manifold 30° cooler than aluminum manifold.
- Cast-in nitrous bosses.
- Dual distributor hold-downs.
- Includes distributor clamp and 12pt 3/8" bolts and washers.

- Compression Limiters →
- O-Ring Distributor Sealing → - No Leaks

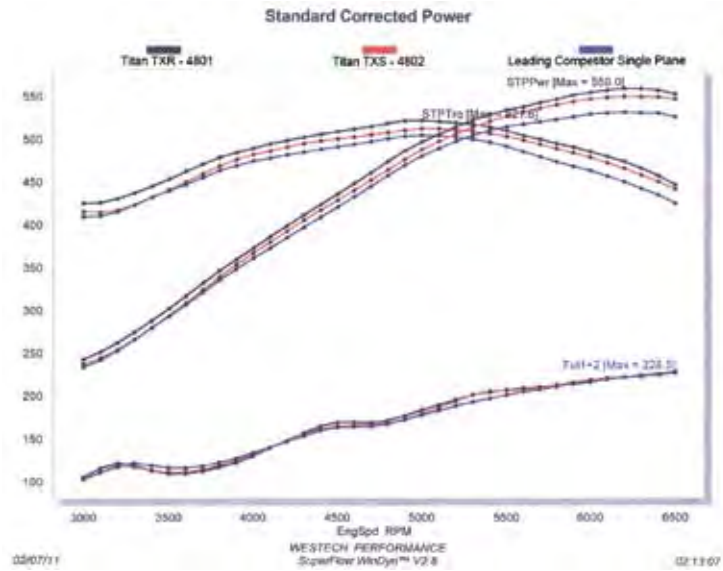
Plastic Manifold & Spacers

◀ ***AFR 4801 Titon TXR Race***
Carb Height 5.500
Fits Fel-Pro #1206

AFR 4802 Titon TXS Street/Strip ▶
Carb Height 4.580
Fits Fel-Pro #1205 & 1206

◀ ***AFR 4804 Titon DPR Street/Strip***
Carb Height 4.720
Fits Fel-Pro #1205 & 1206

Manifold Dyno Test

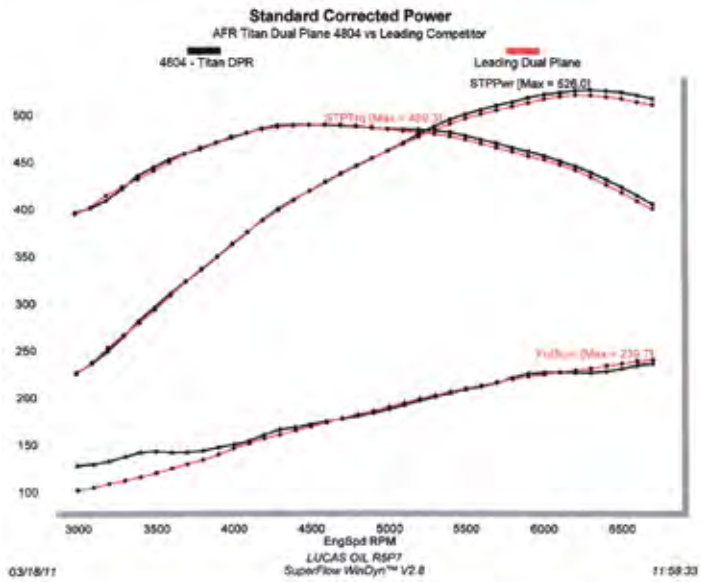


PERFORMANCE LIKE A PORTED ALUMINUM

Engine Specs

- 383 CID
- 9.2:1 CR (Low compression blower shortblock)
- AFR 195cc Eliminator Street Heads (AFR #1040)
- Comp Cams Extreme Energy Hydraulic roller XR274 (224°/230° @ .050 lift)
- Holley 950HP Carb
- HEI Ignition with DUI coil
- Hooker 1.75 diameter dyno headers

Tested at Westech Performance Group on 10/22/2008
Dyno Operator: Steve Brule



PERFORMANCE LIKE A PORTED ALUMINUM

AFR# 4450

AFR# 4460

AFR Spacer are design for precision fit to AFR manifold.

40 Years of Excellence

Engineering Team: Ying, Sergio, George, Sergio *(Not in photo)*

Management Team: Leighann, Tony, Sergio, Chris, Jess, Rick

Sales Team: Al, Jerami, Joe

Office Team: Tina, Irene, Leighann, Beverly

Production Team

Footnotes

AFR TITANIUM VALVES REQUIRE LASH CAPS.

All MARINE Applications - We strongly recommend Inconel exhaust valves.

Boosted/NOS Applications - We strongly recommend considering Inconel exhaust valves and AFR's optional intake valve for power adders exceeding 1000 HP.

Boosted/NOS Applications - We strongly recommend upgrading your springs since boosted or NOS applications accelerate the RPM so quickly, additional spring pressure is required.

Boosted Applications - We strongly recommend increasing your valve spring pressures since boost pressure on the valve reduces your spring tension. For example, 15lbs boost on a 2.125 OD valve reduces the springs closed seat pressure by approximately 40-45lbs.

Intake runner volumes can vary 2-3cc from advertised specs. The reason for this is different combustion chamber volumes require different intake runner lengths for proper alignment with the intake manifold.

All applications. We strongly recommend true roller rocker arms, not just roller tip rockers with stock style bodies.

As with all aftermarket heads a different length pushrod might be required.

As with all aftermarket heads your factory self aligning rockers will no longer be compatible.

As with all aftermarket heads check pushrod clearance with heads placed on the block before final assembly.

As with any aftermarket head milling, the head deck might affect air flow. Flat and angle mil might require a .120 thick gasket.

Due to many available factory OEM style/variations your existing stud girdle may not fit.

AFR LT-1 / LT-4 Heads - Your factory accessory bolts and center bolt valve cover bolts need to be shortened 3/16" or they will bottom out.

AFR LS1 head do not have provisions for 1997-1998 perimeter bolt valve covers, conversion kits availabe.

AFR 227/235cc Heads: Due to the "60/40" stud and valve locations, shaftmount rockers are highly recommended, however if you're cost conscious you can run an .050 offset studmount rockers with the AFR supplied guideplate. Please note that the roller tip of the studmount rocker will not be perfectly centered and will not sit squarely on the valve causing increased side loading and wear. this option is not recommended for race/endurance applications and/or street engines that see a lot of miles.

As with all aftermarket heads with 1.550 O.D. springs, head bolt or studs with smaller diameter head might be required for easier installation.

As with all aftermarket SB Chevy or Ford heads with 1.625 O.D. springs might require the spring to be removed to install the head.

AFR Small Block Chevy & Ford: We strongly recommend using 7/16" rocker studs with todays fast cam rates and RPM capabilities 3/8" rocker studs can occasionally break.

Valve Springs: AFR springs that come standard with our assembled packages are very high quality and are sufficient for most applications. However, forced induction applications and cams with aggressive ramp rates (some cam manufacturers now offer much faster ramp designs and more aggressive cam profiles) may require additional spring pressure. We offer optional valve springs for these types of applications. AFR also recommends the use of billet cam cores which tolerate higher spring loads. Please don't hesitate to contact us directly if you question which spring is more ideally suited to your application.

Piston to Valve: AFR assumes no responsibility for damage if the end user builds an engine without properly verifying he has enough piston to valve clearance (depth and radial clearance both checked). We recommend a minimum depth of .080 on the intake valve and .100 on the exhaust with a radial clearance of .020 minimum around the perimeter of each valve. Clay is recommended to visually verify both depth as well as radial clearance. Just checking depth is not enough….the position of the valve pocket must also be addressed.

BBC Domed Pistons: With some domed aftermarket pistons, it may be necessary to slightly clearance or modify the piston due to our more modern (efficient) heart shaped combustion chamber design. Most of the newer manufacturer's dome profiles will clear. Note that usually less than 1 cc of aluminum is removed which only equates to a weight reduction in the piston of one to two grams. If your rotating assembly is already balanced this is a non-event and creates a VERY slight overbalance which in theory brings your engine into a better balance at slightly higher RPM. While some of you might be inclined to remove the material from the actual cylinder head note that all of the combustion chamber shapes are very critical to flow and altering the cylinder head can and will effect flow and power production. The easiest way to check for this is turning the engine over slowly with the cylinder head installed without the head gasket. See web site for more details.

AFR Formulas For Racers and Engine Builders

We use these formulas on a daily basis and thought that you might like to have them too.

Horsepower

Horsepower (HP) = $\frac{\text{Torque (ft. lbs.) x RPM}}{5252}$

Displacement

Cubic Inch Displacement (cid) = Bore x Bore x Stroke x .7854 x number of cylinders

Approximate Rear Wheel H.P. Converted to Flywheel H.P.

Rear Wheel H.P. = $\frac{\text{Flywheel H.P.}}{\text{80 Auto Tranny}}$
75 Manual Tranny

Torque

Torque = $\frac{\text{Horsepower x 5252}}{\text{RPM}}$

Carburetor Size

Carburetor CFM Req. = $\frac{\text{CID x Maximum RPM}}{3456}$

SAE/Metric Conversion

.061 cubic inch = 1 cubic centimeter

Estimated Horsepower Based On CFM For 350 C.I.

HP = .2575 x CFM (at 28" of water) x number of cylinders

Compression Ratio

Compression Ratio = $\frac{\text{S.V. + C.V.}}{\text{C.V.}}$

Where...

$\frac{\text{S.V. = 3.1416 x Bore x Bore x Stroke}}{4}$

and...

C.V. = (chamber volume - dome volume + deck clearance volume + gasket volume) x .061

Flow Conversion Chart

Want flow at:

Have flow at:	3"	5"	7"	10"	12"	15"	20"	25"	28"	30"	35"	40"	45"
3"	1.00	1.29	1.53	1.82	2.00	2.24	2.58	2.89	3.05	3.16	3.42	3.65	3.87
5"	.744	1.00	1.18	1.41	1.55	1.73	2.00	2.24	2.37	2.45	2.65	2.83	3.00
7"	.655	.845	1.00	1.12	1.31	1.46	1.69	1.89	2.00	2.07	2.24	2.39	2.54
10"	.548	.707	.837	1.00	1.09	1.22	1.41	1.58	1.67	1.73	1.87	2.00	2.12
12"	.500	.645	.764	.913	1.00	1.12	1.29	1.44	1.53	1.58	1.71	1.83	1.94
15"	.447	.577	.683	.816	.894	1.00	1.15	1.29	1.37	1.41	1.53	1.63	1.73
20"	.387	.500	.592	.707	.774	.866	1.00	1.12	1.18	1.22	1.32	1.41	1.50
25"	.346	.447	.529	.632	.683	.775	.894	1.00	1.06	1.10	1.18	1.28	1.34
28"	.327	.442	.500	.598	.654	.732	.845	.945	1.00	1.04	1.12	1.20	1.27
30"	.318	.408	.483	.577	.632	.707	.816	.913	.966	1.00	1.08	1.15	1.22
35"	.293	.378	.447	.535	.586	.655	.756	.845	.894	.926	1.00	1.07	1.13
40"	.274	.354	.418	.500	.548	.612	.707	.791	.837	.866	.935	1.00	1.08
45"	.258	.333	.394	.471	.516	.577	.667	.745	.789	.816	.882	.943	1.00

AFR AIRFLOW RESEARCH

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