



MASTER PRODUCT
CATALOG



POWER BY DESIGN™

New Products



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pages 7-9

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pages 2-4



**PRO ELITE™
CNC-PORTED CYLINDER HEADS**
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COMP 
Performance Group

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WELCOME TO THE LS REVOLUTION

In recent years, LS engine technology has revolutionized the GM performance aftermarket. Gen IV engines have set a new standard for factory horsepower and torque. To meet the growing demand of today's high performance engine builders and racing enthusiasts, engineers at RHS® designed an aluminum LS engine block for radical street and all-out racing applications.

Going beyond the limitations of other GM LS blocks, the LS Race Block is available in both standard (9.240") and tall (9.750") deck height combinations and is engineered for maximum clearance around a 4.600" stroke crankshaft. This was done by raising the camshaft centerline (.388"/9.86mm) and including priority main oiling that shifts the oil galley outboard. With this unique design, RHS® engineers also minimized windage in the rotating assembly – leading to superior engine lubrication at higher RPM.

To make it friendly for existing race applications, the block contains both factory and motor plate race mounts for Gen I, II, III and IV engines. And for quality assurance, RHS® conducts a CT scan (similar to a medical CAT scan) on each block to ensure maximum precision and consistency. Combine that with more standard features than any block on the market and the RHS® LS Race Block becomes the benchmark of LS power, strength and compatibility.

Standard Features:

- Engineered from extremely strong and durable, aircraft-quality A357-T6 aluminum material
- Siamese cast bore walls (4.125" or 4.165" available) with press-in cast iron sleeves
- Available in both standard (9.240") and tall (9.750") deck heights with an extra-thick deck surface (.500" standard deck/.750" tall deck); standard (5.87") and tall (6.38") deck cylinder sleeves also available
- 6-Head bolt design (follows GM LSX strategy) with full water jacket around cylinders; large valley windows access inboard 6th head bolt
- Block design includes large front and rear -12AN side feeds for serious dry sump setups
- Added material for oversized lifters (accepts 1.060" bushing for keyed lifters) and lifter bosses that are designed to clear tie bar lifters

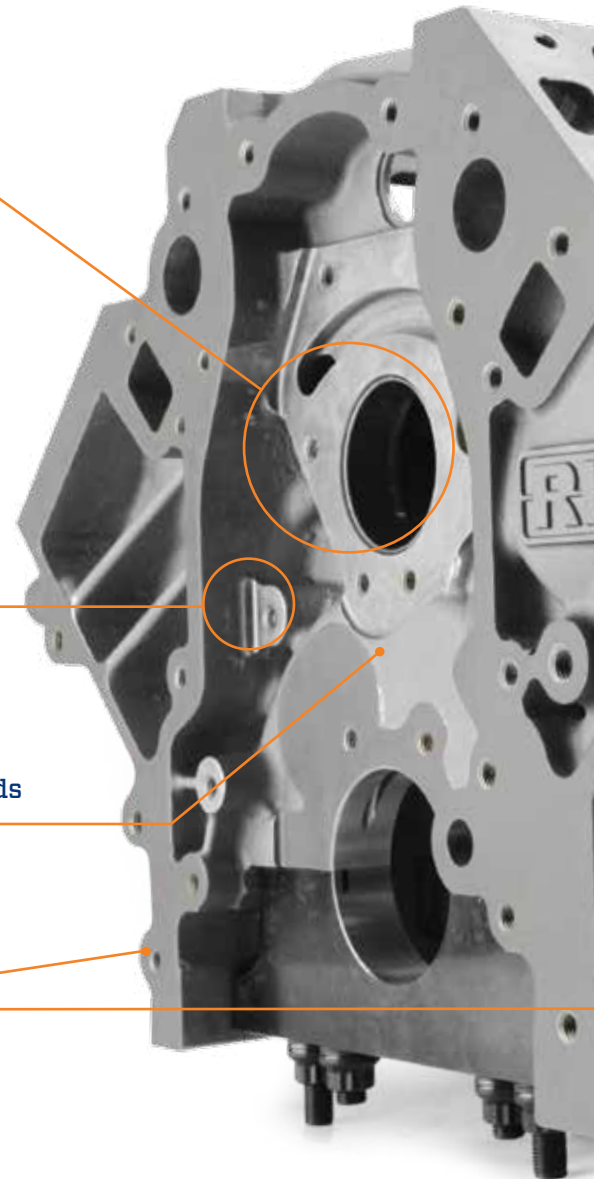
Part # listing continued on page 4.

Accommodates Up To A 60mm Camshaft With 68mm Parent Bore

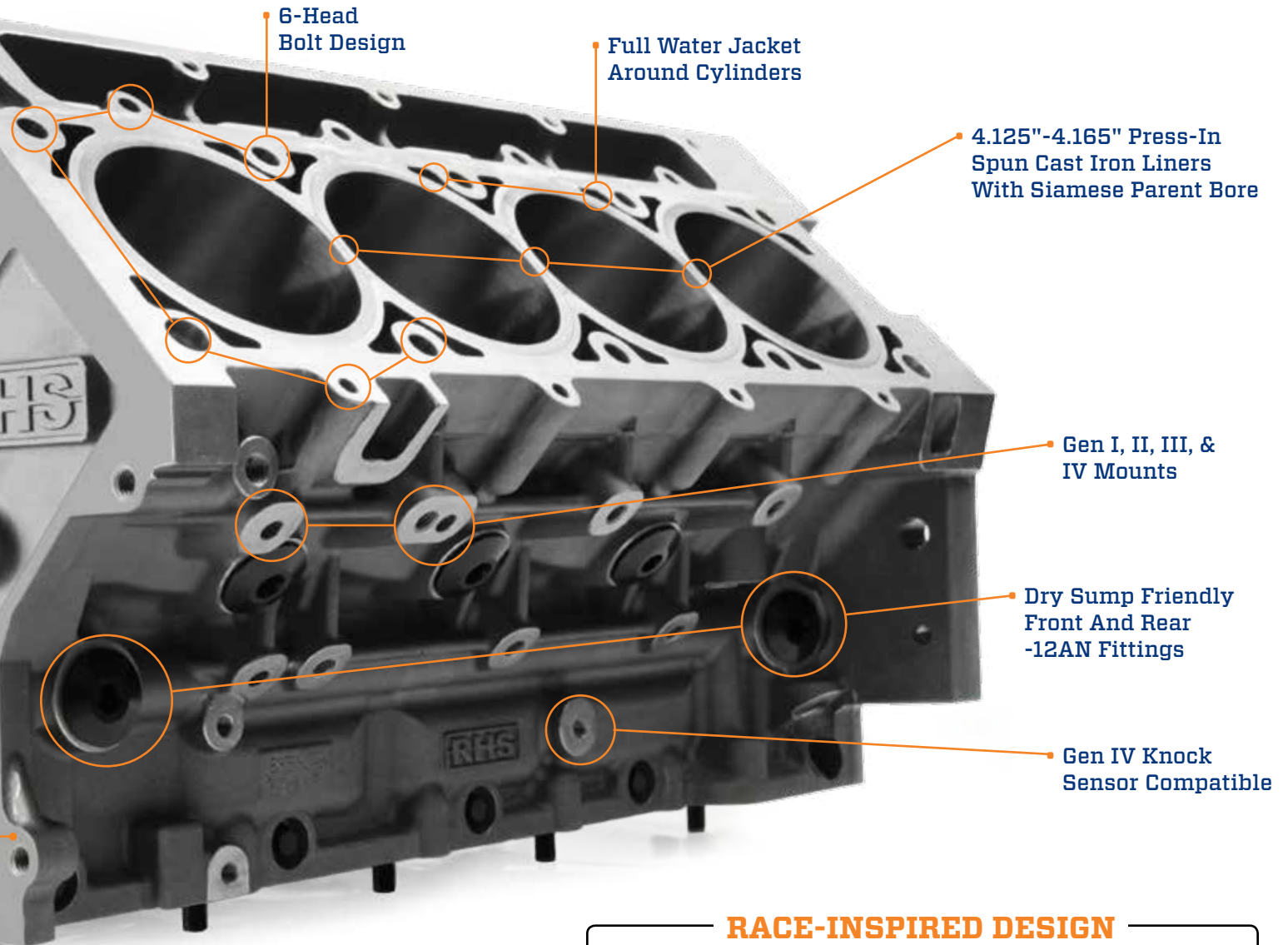
Gear Drive Idler Mounting Pad

Chilled Main Bearing Bulkheads

Race Mounts



LS RACE BLOCKS



Part #54901, Finish Honed,
Tall (9.750") Deck, 4.125" Bore Dia.,
6.38" Cylinder Sleeve Length

RACE-INSPIRED DESIGN

- Priority main oiling – galley moved outboard to accommodate up to 4.600" stroke with standard rod pins (2.100" diameter) and oversized 60mm camshaft with 68mm parent bore
- Raised cam centerline (.388"/9.86mm); 2 extra links in timing chain
- Bay-to-bay breathing improved with larger side window area and increased windage passage under bores and around caps

LS ALUMINUM RACE BLOCKS

LS RACE BLOCK APPLICATIONS

Part #	Deck Height	Bore Dia.	Cylinder Sleeve Length
FINISH HONED			
54906	Standard (9.240")	3.900"	5.87"
54903	Standard (9.240")	4.125"	5.87"
54902	Standard (9.240")	4.165"	5.87"
54901	Tall (9.750")	4.125"	6.38"
54900	Tall (9.750")	4.165"	6.38"
BORED, READY TO HONE			
54906U	Standard (9.240")	3.895"	5.87"
54903U	Standard (9.250")	4.120"	5.87"
54902U	Standard (9.250")	4.160"	5.87"
54901U	Tall (9.760")	4.120"	6.38"
54900U	Tall (9.760")	4.160"	6.38"
UNFINISHED			
54905	Standard (9.250")	4.100"	5.87"
54904	Tall (9.760")	4.100"	6.38"



REPLACEMENT PARTS

These parts are included with your purchase of an RHS® LS Race Block but are also available for purchase separately.

Part #	Description
HARDWARE	
549200-1	Aluminum -12AN Port Plug
549201-1	Main Cap Dowel Pin
549202-1	Cam Bearings
549203-1	O-Ring For -12AN Port Plug
549204-1	O-Ring For Thrust Plate
549205-1	Block-To-Transmission Dowel Pin
HARD PARTS	
549100-1	8620 Billet Main Cap
549101	Rear Seal Cover
549102	Ampco 45 Bronze Cam Thrust Plate 6-Bolts
549103-1	4.125" Short Deck Sleeve
549104-1	4.125" Tall Deck Sleeve
549105-1	3.900" Short Deck Sleeve
FASTENERS	
549300-1	Main Cap Stud, Long
549301-1	Main Cap Stud, Short
549302-1	Main Cap Side Bolt
549303-1	Main Cap 12pt Nut
549304-1	Main Cap Washer
549305-1	Main Cap Side Washer

ACCESSORIES

Accessory items are not included with the purchase of an RHS® LS Race Block but are available for individual purchase.

Part #	Description
ENGINE BLOCK TOOLS	
549150	Torque Plate
549106	LS Engine Main Cap Puller
549107	Gen III Intake Spacer Kit
549108	Gen IV Intake Spacer Kit
549109	LS7 Intake Spacer Kit
549120	Piston Oiler Kit for RHS® LS Block
HEAD GASKETS	
549400-SET	4.000" Bore, .036" Compressed Thickness
549401-SET	4.165" Bore, .036" Compressed Thickness
549402-SET	4.200" Bore, .036" Compressed Thickness
FRONT COVERS/GEAR DRIVES	
5490	RHS® LS Sprint Car Front Cover w/ Gear Drive
5491	GM LS Sprint Car Front Cover w/ Gear Drive
5496	LS/LS6 Front Cover (Fits RHS® or GM)
5497	LS7 Front Cover (Fits RHS® or GM)

CYLINDER HEAD SERIES EXPLAINED



PRO ACTION™ (ALUMINUM)

Pro Action™ Cylinder Heads, the cornerstone of the RHS® line, are ideal for a variety of performance functions, including hot rods, drag racing, oval track racing and marine applications. These heads deliver more features, higher flow characteristics and better finish quality than other competitive brands.

- Available with a wide variety of runner and chamber sizes
- Enhanced features, innovative designs and superior quality outperform the competition right out of the box

Applications: Hardcore street, race and powerboat engines



PRO ELITE™ (ALUMINUM)

The RHS® Pro Elite™ series of CNC-ported cylinder heads is designed for racers who want the absolute maximum engine performance. Utilizing innovative design features, modern engineering methods and precision CNC-machining, Pro Elite™ Cylinder Heads are second-to-none.

- Innovative aluminum design with race-inspired features
- Deliver maximum airflow for remarkable performance gains

Applications: Extreme performance and race engines

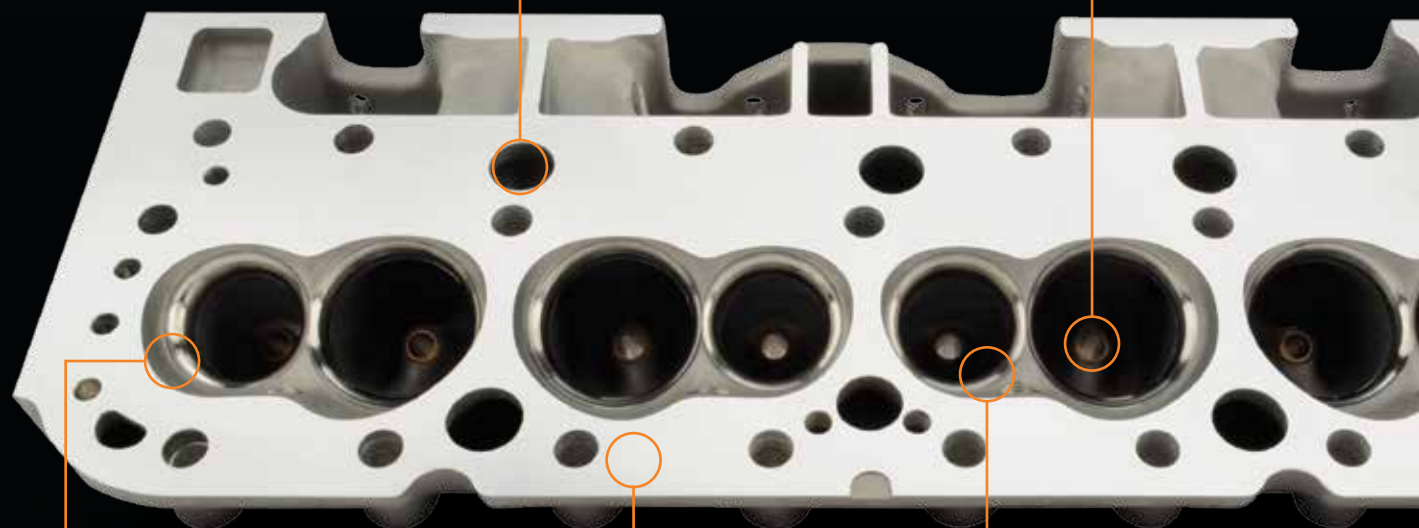


STANDARD FEATURES OF RHS® CYLINDER HEADS

- CNC-Machined For Screw-In Studs

Modified Water Jacket Dimensions For Cooler Operation

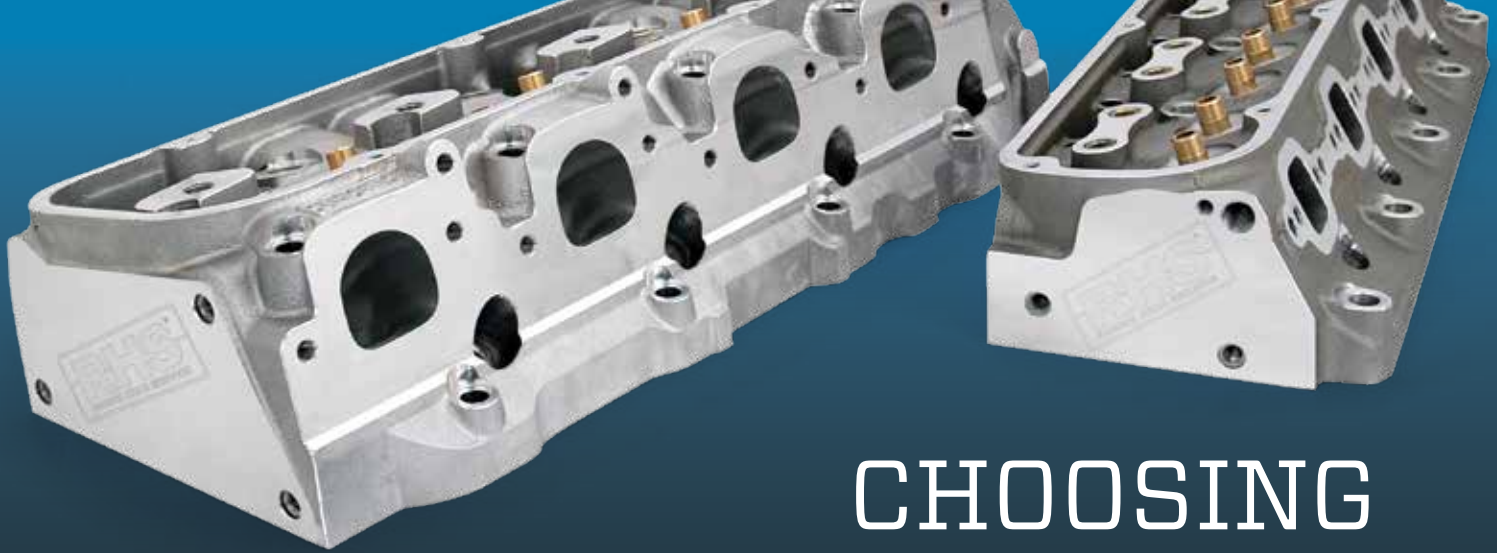
Premium Bronze Valve Guides



Clean Cast Technology™ For Smoother, Less Restricted Airflow

355-T6 Aluminum For Light Weight And Unmatched Strength

Multi-Angled Serdi Valve Job



CHOOSING CYLINDER HEADS THE RHS® WAY

WHEN DO FLOW NUMBERS MATTER?

While there are many ways to measure and compare heads – port volume, port flow, cross sectional area, air velocity, dimensions, chamber volume, valve size, etc. – the only thing that’s really important is that the entire engine performs as desired. So it’s necessary to understand how some of these things work together and why flow numbers are not always the best comparison.

Most people understand the concept that if a cylinder head restricts the air/fuel flow, it will kill power. So the more air and fuel an intake port can flow, the better, right? It would be simple if you could put heads on a flow bench and declare the one that flows the most to be the best, but that’s just not always true.

It’s easy to make a port flow more air – simply make it bigger. But doing that creates an engine that, more often than not, makes no torque and displays lazy throttle response. Plus, because there’s no standard for flow testing, unless you know exactly how the test was performed, raw flow numbers are not of great value and can easily throw you off track. The list of tricks a smart operator can use to create artificially high numbers on the flow bench is nearly endless. So when it comes to flow numbers, the only ones that are useful come from comparing two different heads on the same bench at the same time in exactly the same way.

The engineers at RHS® took a bold approach and designed their ports for the best performance on the engine and not necessarily on the flow bench. Taking into account the entire system when they design and port a head, they ensure every cylinder head works for the entire engine package to maximize power, efficiency and throttle response throughout the RPM range. Port flow numbers here aren’t the goal, only a single indicator among many factors. How much the CFM intake flows isn’t the most important thing as long as the engine hits your horsepower and performance targets.

Another area where power can be improved but overall port flow can be hurt is in the throat, the area directly behind the seat. Controlling how the throat tapers as it approaches the valve seat can make the changes in seat angle less noticeable to the incoming air/fuel charge. By trying to target max power in lower RPM ranges, a smaller throat size is necessary. A throat size that’s 88 to 92% of the valve seat on a hot street motor helps the low-end torque. For all-out racing where the RPM is going to be much higher, the throat could be in the 92 to 98% range. A throat percentage this high will hurt flow bench numbers but will show up on the dyno in the upper RPM range.

The RPM range within which your engine will be operating also affects the ideal flow. Airflow velocity inside the ports is just as important as how much air the port can flow. It must be high enough to keep the air/fuel mixture in suspension, or fuel droplets will drop out of the airflow. Unburned fuel means lost power. Port velocity also creates better part-throttle response and more power throughout the RPM range. The trick is to size the port appropriately in order to get the necessary velocity and then shape it to maximize flow.

It’s clear that choosing the correct head for your engine involves much more than just raw flow numbers. There are many important factors, and the smaller details are often more important than overall flow because they have a direct link to velocity and performance - and that’s what really matters.



SERIES: PRO ACTION™

DESCRIPTION: LS1 Cathedral Port Cylinder Heads; Aluminum; Angle Plug; Bare or Fully Assembled; Hydraulic Roller Assemblies Available

APPLICATION:
Mild Street To All Out Racing

VALVE GUIDES:
Premium Bronze Material

SPARK PLUGS: 14mm Thread, .750" Reach, Gasketed

ASSEMBLIES INCLUDE: Stainless Steel Valves, Valve Springs, Retainers, Valve Locks, Guide Plates, Rocker Studs & Valve Seals



RHS® Uses Only Premium Components

PRO ACTION™ LS1 CATHEDRAL PORT

ALUMINUM CYLINDER HEADS



This affordable LS1-style head saves you the time and expense of having your heads CNC or hand-ported and combines a race-proven design with Clean Cast Technology™ to create “as cast” ports that flow like they’ve already been ported. They are available in five versions, including an as cast P-Port with no valve job. All applications are listed in the application chart on page 8. Stock 15° valve angles and centers, drilled and tapped accessory holes, and stock port locations make these heads compatible with stock applications. However, added material at the top of each head allows for upgraded valve train components, perfect for race applications.

- Specially designed combustion chambers improve airflow and flame propagation to increase both horsepower and torque
- Multi-angle intake and radiused exhaust seats improve airflow
- 355-T6 aluminum alloy is lightweight for increased life and strength
- High capacity water jacket generates greater thermal conductivity for cooler and more effective operation
- Stock valve angles work with stock and upgraded valve train components

Part # listing continued on page 8.

Learn. Share. Experience.

Stay informed about the newest RHS® products, view install videos, read customer reviews and keep up with the latest news from the automotive industry.



PRO ACTION™ LS1 CATHEDRAL PORT

ALUMINUM CYLINDER HEADS *cont.*

Bare						Assembled					
Part #	Runner	Chamber	Spark Plugs	Valve Size In. Ex.		Part #	Valve Train	Max Lift	Valve Springs	Retainers Part # Material ^A	
P-PORT											
54300	-	-	Angle	-	-	-	-	-	-	-	-
AS CAST											
54301	205cc	62cc	Angle	2.020"	1.600"	54301-02CS	Hyd. Roller	.600"	26918	774	CS ^B
54302	225cc	62cc	Angle	2.020"	1.600"	54302-02CS	Hyd. Roller	.600"	26918	774	CS
						54302-02TI	Hyd. Roller	.600"	26918	772	TI
						54302-02TS	Hyd. Roller	.600"	26918	1772	TS
						54302-05TI	Hyd. Roller	.660"	26925	717	TI
						54302-05TS	Hyd. Roller	.660"	26925	1717	TS
						54302-06TI	Hyd. Roller	.675"	26926	779	TI
54302-06TS	Hyd. Roller	.675"	26926	1779	TS						
CNC-PORTED											
54320	232cc	68cc	Angle	2.055"	1.600"	54320-02TI	Hyd. Roller	.600"	26918	772	TI
						54320-02TS	Hyd. Roller	.600"	26918	1772	TS
						54320-05TI	Hyd. Roller	.660"	26925	717	TI
						54320-05TS	Hyd. Roller	.660"	26925	1717	TS
						54320-06TI	Hyd. Roller	.675"	26926	779	TI
						54320-06TS	Hyd. Roller	.675"	26926	1779	TS
54321	250cc	68cc	Angle	2.100"	1.600"	54321-02TI	Hyd. Roller	.600"	26918	772	TI
						54321-02TS	Hyd. Roller	.600"	26918	1772	TS
						54321-05TI	Hyd. Roller	.660"	26925	717	TI
						54321-05TS	Hyd. Roller	.660"	26925	1717	TS
						54321-06TI	Hyd. Roller	.675"	26926	779	TI
						54321-06TS	Hyd. Roller	.675"	26926	1779	TS

^A 'CS' denotes Chromemoly Steel, 'TI' denotes Titanium, & 'TS' denotes Tool Steel.

^B Contact RHS® to upgrade to Tool Steel.

ASSEMBLED WITH QUALITY

Most RHS® cylinder heads are available in both bare and assembled options. When ordered assembled, the cylinder heads feature only premium-quality COMP Cams® valve train components. The two performance companies pair technologically advanced cylinder heads with world class valve train components to create Power By Design™. See a full listing of RHS® assembled cylinder heads and the matching COMP Cams® valve train components beginning on page 34.





PRO ELITE™ LS7 RECTANGLE PORT

CNC-PORTED ALUMINUM CYLINDER HEADS

SERIES: PRO ELITE™

DESCRIPTION: LS7 CNC-Ported Rectangle Port Cylinder Heads; Aluminum, Angle Plug; Bare or Fully Assembled; Hydraulic Roller Assemblies Available

APPLICATION: Large & Small Cubic Inch, Hardcore Street Applications

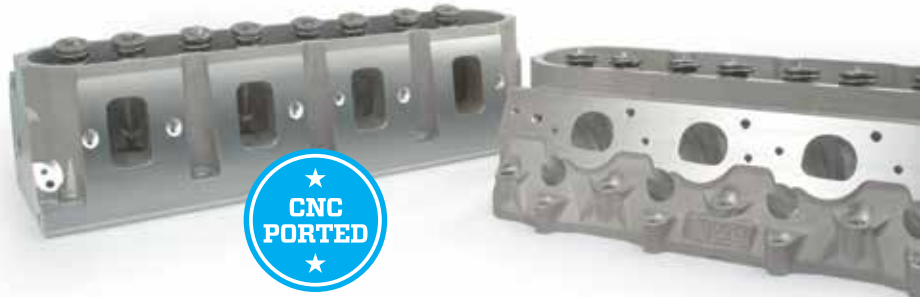
VALVE GUIDES:

Premium Bronze Material

SPARK PLUGS: 14mm Thread, .750" Reach, Gasketed

ASSEMBLIES INCLUDE: Stainless Steel Valves, Valve Springs, Retainers, Valve Locks, Guide Plates, Rocker Studs & Valve Seals

CNC-PORTED



RHS® Pro Elite™ LS7 Cylinder Heads are the aftermarket's first high performance LS-style head to feature a raised intake runner design that fits both stock and aftermarket LS7 intake manifolds and valve train setups. These Pro Elite™ Aluminum Cylinder Heads are designed with a 12° valve angle and unique .220" raised intake runners to provide a better line of sight into the cylinders and allow for an improved short turn. The heads also utilize the popular LS 6-bolt head design, making them compatible with both the RHS® LS Race Block and most GM LSX Blocks. The raised runner and rolled valve angle increase overall flow capability while an improved water jacket design improves thermal conductivity.

- Standard LS 6-bolt head design is compatible with the advanced RHS® LS Race and popular GM LSX Blocks
- 100% CNC-machined runners optimize volume, atomization and velocity
- Increased clamping capacity greatly improves head gasket retention in high horsepower and boosted applications
- .750" Thick deck surface increases integrity; reinforced solid rocker rail increases rigidity and stability; 355-T6 aluminum withstands race conditions
- .400" Raised rail works with aftermarket rockers; .100" raised exhaust port allows use of stock and aftermarket manifolds
- Can be used in small and large cubic inch, hardcore street applications

Bare						Assembled					
Part #	Runner	Chamber	Spark Plugs	Valve Size In.	Valve Size Ex.	Part #	Valve Train	Max Lift	Valve Springs	Retainers Part #	Material ^A
P-PORT (w/o Valve Job)											
54500	-	-	Angle	-	-	-	-	-	-	-	-
CNC-PORTED											
54501	291cc	69cc	Angle	2.200"	1.615"	54501-05HCS ^B	Hyd. Roller	.660"	26925	713	CS
						54501-06STS ^B	Hyd. Roller	.675"	26926	1779	TS
						54501-06STI ^B	Hyd. Roller	.675"	26926	779	TI
						54501-06TTSX ^C	Hyd. Roller	.675"	26926	1779	TS
						54501-06TTIX ^C	Hyd. Roller	.675"	26926	779	TI
						54501-06TTS ^D	Hyd. Roller	.675"	26926	1779	TS
						54501-06TTI ^P	Hyd. Roller	.675"	26926	779	TI
SPRINT CAR P-PORT (w/o Valve Job)											
54509	-	-	Angle	-	-	-	-	-	-	-	-
SPRINT CAR CNC-MACHINED											
54510	291cc	69cc	Angle	2.200"	1.615"	-	-	-	-	-	-

^A 'CS' denotes Chromemoly Steel, 'TI' denotes Titanium & 'TS' denotes Tool Steel.

^B With Manley lightweight hollow stem stainless intake valves and severe duty solid stainless exhaust valves.

^C With Manley titanium intake valves and Inconel exhaust valves.

^D With Manley titanium intake valves and titanium exhaust valves.

PRO ACTION™ 23° SMALL BLOCK CHEVY

ALUMINUM CYLINDER HEADS



These heads deliver significant gains in both power and torque for all Small Block Chevrolet applications – right out of the box. Pro Action™ SBC Aluminum Cylinder Heads are the perfect choice for a variety of performance engines, including street rod, muscle car, oval track and drag racing applications. Standard features include a multi-angle Serdi valve job and the choice of a straight or angle plug configuration. Valve springs up to 1.550" and all standard rocker arms and valve train components are accepted.

- **Advanced port/runner/chamber design and modified water jacket for improved durability, optimal performance and added reliability**
- **Standard features include multi-angle intake and radiused exhaust valve seats for up to 5% more flow than the competition**
- **Select from 180cc, 200cc, 220cc and 235cc intake runners with 64cc or 72cc combustion chambers to fit your exact needs**
- **As cast or fully assembled with premium COMP Cams® components**

Part # listing continued on page 11.



SERIES: PRO ACTION™

DESCRIPTION: 23° Small Block Chevy Cylinder Heads; Aluminum; Straight Or Angle Plug; Bare Or Fully Assembled; Flat Tappet & Hydraulic Roller Assemblies Available

APPLICATION: 262-421c.i. Recommended; Street Performance/Drag Racing/Circle Track Racing

VALVE GUIDES:
Premium Bronze Material

SPARK PLUGS: 14mm Thread, .750" Reach, Gasketed

ASSEMBLIES INCLUDE: Stainless Steel Valves, Valve Springs, Retainers, Valve Locks, Guide Plates, Rocker Studs & Valve Seals



**RHS® Uses Only
Premium Components**

PRO ACTION™ 23° SMALL BLOCK CHEVY

ALUMINUM CYLINDER HEADS

Bare						Assembled					
Part #	Runner	Chamber	Spark Plugs	Valve Size In.	Valve Size Ex.	Part #	Valve Train	Max Lift	Valve Springs	Retainers Part #	Material ^A
AS CAST											
12052	180cc	64cc	Straight	2.020"	1.600"	12052-01	Flat Tappet	.560"	972	743	CS
						12052-02	Hyd. Roller	.600"	987	740	CS
12053	180cc	64cc	Angle	2.020"	1.600"	12053-01	Flat Tappet	.560"	972	743	CS
						12053-02	Hyd. Roller	.600"	987	740	CS
12041	180cc	72cc	Straight	2.020"	1.600"	12041-01	Flat Tappet	.560"	972	743	CS
						12041-02	Hyd. Roller	.600"	987	740	CS
12042	180cc	72cc	Angle	2.020"	1.600"	12042-01	Flat Tappet	.560"	972	743	CS
						12042-02	Hyd. Roller	.600"	987	740	CS
12054	200cc	64cc	Straight	2.020"	1.600"	12054-01	Flat Tappet	.560"	972	743	CS
						12054-02	Hyd. Roller	.600"	987	740	CS
12055	200cc	64cc	Angle	2.020"	1.600"	12055-01	Flat Tappet	.560"	972	743	CS
						12055-02	Hyd. Roller	.600"	987	740	CS
12043	200cc	72cc	Straight	2.020"	1.600"	12043-01	Flat Tappet	.560"	972	743	CS
						12043-02	Hyd. Roller	.600"	987	740	CS
12044	200cc	72cc	Angle	2.020"	1.600"	12044-01	Flat Tappet	.560"	972	743	CS
						12044-02	Hyd. Roller	.600"	987	740	CS
12056	220cc	64cc	Straight	2.020"	1.600"	12056-01	Flat Tappet	.560"	972	743	CS
						12056-02	Hyd. Roller	.600"	987	740	CS
12059	220cc	64cc	Angle	2.020"	1.600"	12059-01	Flat Tappet	.560"	972	743	CS
						12059-02	Hyd. Roller	.600"	987	740	CS
12045	220cc	72cc	Straight	2.020"	1.600"	12045-01	Flat Tappet	.560"	972	743	CS
						12045-02	Hyd. Roller	.600"	987	740	CS
12046	220cc	72cc	Angle	2.020"	1.600"	12046-01	Flat Tappet	.560"	972	743	CS
						12046-02	Hyd. Roller	.600"	987	740	CS
12060	235cc	64cc	Straight	2.080"	1.600"	12060-01	Flat Tappet	.560"	972	743	CS
						12060-02	Hyd. Roller	.600"	987	740	CS
12062	235cc	64cc	Angle	2.080"	1.600"	12062-01	Flat Tappet	.560"	972	743	CS
						12062-02	Hyd. Roller	.600"	987	740	CS
12047	235cc	72cc	Straight	2.080"	1.600"	12047-01	Flat Tappet	.560"	972	743	CS
						12047-02	Hyd. Roller	.600"	987	740	CS
12048	235cc	72cc	Angle	2.080"	1.600"	12048-01	Flat Tappet	.560"	972	743	CS
						12048-02	Hyd. Roller	.600"	987	740	CS

^A 'CS' denotes Chromemoly Steel, 'TI' denotes Titanium & 'TS' denotes Tool Steel.



- “What’s New” section spotlights latest RHS® products with images, press releases and more
- Safe and secure checkout accepts PayPal payments and lets you shop from the comfort of your own home 24 hours a day, 7 days a week
- Expanded tech support connects users to technicians with the real-time Live Chat instant messenger
- Wishlist feature allows you to save a list of your favorite items and share it with friends and family

PRO ELITE™ 23° SMALL BLOCK CHEVY

CNC-PORTED ALUMINUM CYLINDER HEADS



RHS® now offers a 23° aluminum head for Small Block Chevy applications that is CNC-ported from the factory for precision accuracy and durability. The CNC-ported 228cc intake and 82cc exhaust runners optimize volume, atomization and velocity, while the 69cc combustion chambers are CNC-ported to relieve valve shrouding that occurs in “as cast” chambers when the edge of a valve is in close proximity to the combustion chamber wall. CNC-machining the combustion chamber also improves the airflow efficiency of the cylinder heads. The 2.055" multi-angle intake and 1.600" radiused exhaust valve seats allow for superior airflow, thereby significantly increasing horsepower. In addition, these 23° SBC heads feature a refined water jacket for better water flow that reduces engine hot spots, while an extra-thick deck allows angle milling and improves head gasket retention in boosted and nitrous applications. RHS® has designed a race-winning aluminum head that utilizes the latest in cutting-edge design technology to maximize airflow and boost horsepower in both circle track and drag racing classes.

- CNC-ported 228cc intake and 82cc exhaust runners
- 2.055" Multi-angle intake and 1.600" radiused exhaust seats allow for superior airflow for increased horsepower
- CNC-ported 69cc combustion chamber relieves valve shrouding and improves airflow efficiency when valve is too close to chamber wall
- Clean Cast Technology™ delivers superior port-to-chamber transitions for greater airflow efficiency right out of the box



SERIES: PRO ELITE™

DESCRIPTION: 23° CNC-Ported Small Block Chevy Cylinder Heads; Aluminum; Angle Plug; Bare or Custom Assemblies Available

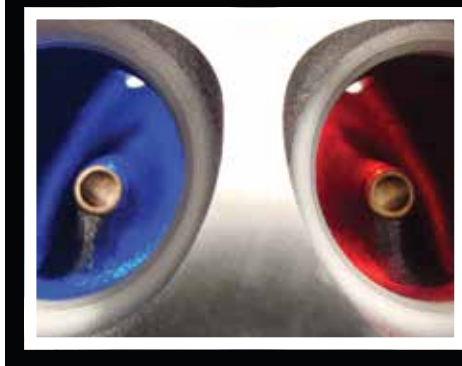
APPLICATION: 262-421c.i. Recommended; Street Performance/Drag Racing/Circle Track Racing

VALVE GUIDES:
Premium Bronze Material

SPARK PLUGS: 14mm Thread, .750" Reach, Gasketed

CUSTOM ASSEMBLIES INCLUDE:
Stainless Steel Valves, Valve Springs, Retainers, Valve Locks, Guide Plates, Rocker Studs & Valve Seals

CNC-PORTED



Bare								
Part #	Description	Runner	Chamber	Spark Plugs	In.	Valve Size	Ex.	Application
CNC-PORTED								
12080	Pro Elite™ 23° CNC-Ported SBC	228cc	69cc	Angle	2.055" + .100" Long	1.600" + .100" Long		383-421c.i.



PRO ACTION™ 24° BIG BLOCK CHEVY

ALUMINUM CYLINDER HEADS

SERIES: PRO ACTION™

DESCRIPTION: 24° Big Block Chevy Cylinder Heads; Aluminum; Angle Plug; Bare or Fully Assembled; Hydraulic Roller & Mechanical Roller Assemblies Available

APPLICATION: 496-632c.i. Recommended; Street Performance/Drag Racing/Powerboat Racing

VALVE GUIDES:
Premium Bronze Material

SPARK PLUGS: 14mm Thread, .750" Reach, Gasketed

ASSEMBLIES INCLUDE: Stainless Steel Valves, Valve Springs, Retainers, Valve Locks, Guide Plates, Rocker Studs & Valve Seals



First-rate performance, progressive engineering and unmatched quality are the foundations of the Pro Action™ head series. Capable of making up to 1000 horsepower, Pro Action™ BBC Cylinder Heads provide you with more features, better flowchart numbers and superior “as cast” finished quality. They are available in aluminum either as cast or fully assembled, and are a tremendous performer for Big Block Chevy street, drag race and powerboat applications.

- Patented Clean Cast Technology™ provides superior port-to-chamber transitions and optimal airflow efficiency right out of the box
- Hardened multi-angle intake and radiused exhaust valve seats are utilized to outflow the competition by up to 5%
- Premium bronze valve guides offer superior heat dissipation and longer life
- Refined water jacket design improves thermal conductivity and extra-thick deck faces allow angle milling for compression

Bare						Assembled					
Part #	Runner	Chamber	Spark Plugs	Valve Size In.	Valve Size Ex.	Part #	Valve Train	Max Lift	Valve Springs	Retainers Part #	Material ^A
AS CAST											
11011	320cc	119cc	Angle	2.250"	1.880"	11011-02	Hyd. Roller	.600"	924	741	CS
						11011-03	Mech. Roller	.750"	991	733	TI
11012	360cc	119cc	Angle	2.300"	1.880"	11012-02	Hyd. Roller	.600"	924	741	CS
						11012-03	Mech. Roller	.750"	991	733	TI

^A 'CS' denotes Chromemoly Steel, 'TI' denotes Titanium & 'TS' denotes Tool Steel.

* .250" Long intake valve length, .100" long exhaust valve length required for 2.000" installed height.

* .350" Long intake valve length, .200" long exhaust valve length required for 2.100" installed height.

PRO ELITE™ 24° BIG BLOCK CHEVY

CNC-PORTED ALUMINUM CYLINDER HEADS



Increased airflow volume and speed are essential for drag racing and powerboat applications that seek to improve horsepower and torque. The Pro Elite™ Aluminum Cylinder Heads are CNC-ported to maximize airflow and ensure port-to-port consistency in runner shapes and sizes. The CNC-ported intake and exhaust runners optimize both the air volume and speed, while the CNC-ported combustion chambers relieve the valve shrouding that commonly occurs in as cast chambers. With more standard features than any Big Block Chevy head in the aftermarket, the Pro Elite™ series is sure to give your Big Block Chevy the boost in horsepower and performance it deserves.

- CNC-ported 376cc or 339cc intake and 135cc exhaust runners with CNC-ported 121cc combustion chambers improve HP and torque
- Multi-angle intake and radiused exhaust valve seats for superior airflow and increased horsepower straight from the factory
- Extra-thick deck allows angle milling for compression and increased rigidity; greatly improves head gasket retention
- Ultra durable 24° aluminum cylinder heads designed for use with hard-core Big Block Chevy drag and marine racing engines



SERIES: PRO ELITE™

DESCRIPTION: 24° CNC-Ported Big Block Chevy Cylinder Heads; Aluminum; Angle Plug; Bare or Custom Assemblies Available

APPLICATION: 496-632c.i. Recommended; Drag Racing/Powerboat Racing

VALVE GUIDES:
Premium Bronze Material

SPARK PLUGS: 14mm Thread, .750" Reach, Gasketed

CUSTOM ASSEMBLIES INCLUDE:
Stainless Steel Valves, Valve Springs, Retainers, Valve Locks, Guide Plates, Rocker Studs & Valve Seals

CNC-PORTED



Bare							
Part #	Description	Runner	Chamber	Spark Plugs	Valve Size		Application
					In.	Ex.	
CNC-PORTED							
11034	Pro Elite™ 24° CNC-Ported BBC	339cc	121cc	Angle	2.250" + .250" Long	1.880" + .100" Long	468-540c.i.
11038	Pro Elite™ 24° CNC-Ported BBC	376cc	121cc	Angle	2.300" + .350" Long	1.880" + .100" Long	540-632c.i.

*.250" Long intake valve length, .100" long exhaust valve length required for 2.000" installed height.

*.350" Long intake valve length, .200" long exhaust valve length required for 2.100" installed height.



SERIES: PRO ACTION™

DESCRIPTION: 20° Small Block Ford Cylinder Heads; Aluminum; Angle Plug; Bare or Fully Assembled; Flat Tappet & Hydraulic Roller Assemblies Available

APPLICATION: 289-421c.i. Recommended; Street Performance/ Drag Racing/ Circle Track Racing

VALVE GUIDES:
Premium Bronze Material

SPARK PLUGS: 14mm Thread, .750" Reach, Gasketed

ASSEMBLIES INCLUDE:
Stainless Steel Valves, Valve Springs, Retainers, Valve Locks, Guide Plates, Rocker Studs & Valve Seals



PRO ACTION™
20° SMALL BLOCK FORD

ALUMINUM CYLINDER HEADS

The Small Block Windsor and 5.0L engines are two of the most popular engine designs in the history of Ford technology. And now, RHS® has developed an impressive head series to provide Small Block Ford engines with increased airflow and horsepower – no porting or modifications needed. RHS® Pro Action™ Small Block Ford Aluminum Cylinder Heads include more standard features than any Ford head in the industry, including premium bronze valve guides for extended valve sealing and durability. With a host of runner and chamber sizes to meet various performance needs, these heads are truly the race winner's choice.

- Designed for Small Block Ford 289-351 Windsor and 5.0L engines; compatible with all OEM and aftermarket components
- Smaller valve package allows usage without piston modification
- Dual exhaust bolt pattern fits both stock manifold and large tube headers
- Clean Cast Technology™ provides better casting quality for minimized airflow restriction and improved airflow efficiency

• Some older applications utilize the AIR Reactor hole in the cylinder head as an accessory mount. These applications require a reducer bushing from Ford (part #F4ZZ6E086A) to provide the proper diameter to mount the brackets.



Bare						Assembled					
Part #	Runner	Chamber	Spark Plugs	Valve Size In. Ex.		Part #	Valve Train	Max Lift	Valve Springs	Retainers Part #	Material ^A
AS CAST											
35010	160cc	58cc	Angle	1.940"	1.600"	35010-01	Flat Tappet	.560"	972	743	CS
						35010-02	Hyd. Roller	.600"	987	740	CS
35014	160cc	64cc	Angle	1.940"	1.600"	35014-01	Flat Tappet	.560"	972	743	CS
						35014-02	Hyd. Roller	.600"	987	740	CS
35011	180cc	58cc	Angle	2.020"	1.600"	35011-01	Flat Tappet	.560"	972	743	CS
						35011-02	Hyd. Roller	.600"	987	740	CS
35015	180cc	64cc	Angle	2.020"	1.600"	35015-01	Flat Tappet	.560"	972	743	CS
						35015-02	Hyd. Roller	.600"	987	740	CS
35012	200cc	58cc	Angle	2.020"	1.600"	35012-01	Flat Tappet	.560"	972	743	CS
						35012-02	Hyd. Roller	.600"	987	740	CS
35016	200cc	64cc	Angle	2.020"	1.600"	35016-01	Flat Tappet	.560"	972	743	CS
						35016-02	Hyd. Roller	.600"	987	740	CS
35013	215cc	58cc	Angle	2.080"	1.600"	35013-01	Flat Tappet	.560"	972	743	CS
						35013-02	Hyd. Roller	.600"	987	740	CS
35017	215cc	64cc	Angle	2.080"	1.600"	35017-01	Flat Tappet	.560"	972	743	CS
						35017-02	Hyd. Roller	.600"	987	740	CS

^A 'CS' denotes Chromemoly Steel, 'TI' denotes Titanium & 'TS' denotes Tool Steel.
*.100" Long valve length.

PRO ELITE™ 20° SMALL BLOCK FORD

CNC-PORTED ALUMINUM CYLINDER HEADS



Designed with the Small Block Ford racing enthusiast in mind, these heads give you all of the benefits of professional CNC-porting – straight from the factory! However, the CNC-porting is done off of a known port, providing more airflow consistency than hand-ported runners. In addition to the CNC-ported intake and exhaust runners, the combustion chambers are also CNC-ported to moderate valve shrouding and maximize airflow efficiency.

- CNC-ported 205cc/221cc intake and 79cc exhaust runners
- Unique multi-angle intake and radiused exhaust valve seats offer increased airflow volume for more horsepower potential
- CNC-ported 62cc combustion chamber moderates valve shrouding
- Thick deck surface allows angle milling for compression and increases rigidity; greatly improves head gasket retention
- Designed for use with Small Block Ford 289, 302 and 351 Windsor drag and circle track racing applications

Some older applications utilize the AIR Reactor hole in the cylinder head as an accessory mount. These applications require a reducer bushing from Ford (part #F4ZZ6E086A) to provide the proper diameter to mount the brackets.



SERIES: PRO ELITE™

DESCRIPTION: 20° CNC-Ported Small Block Ford Cylinder Heads; Aluminum; Angle Plug; Bare or Custom Assemblies Available

APPLICATION: 289-351c.i. Recommended; Circle Track/Drag Racing

VALVE GUIDES:
Premium Bronze Material

SPARK PLUGS: 14mm Thread, .750" Reach, Gasketed

CUSTOM ASSEMBLIES INCLUDE:
Stainless Steel Valves, Valve Springs, Retainers, Valve Locks, Guide Plates, Rocker Studs & Valve Seals

CNC-PORTED



Bare		Runner Chamber		Spark Plugs	Valve Size		Application
Part #	Description				In.	Ex.	
CNC-PORTED							
35020	Pro Elite™ 20° CNC-Ported SBF	205cc	62cc	Angle	2.055" + .100" Long	1.600" + .100" Long	289-351c.i.
35025	Pro Elite™ 20° CNC-Ported SBF	221cc	62cc	Angle	2.080" + .100" Long	1.625" + .100" Long	289-351c.i.

PART KITS

When it comes to street performance and/or competitive racing, the horsepower capability of cylinder heads can be limited if not used with the right parts. Cylinder head studs and components can mean the difference between high performance durability and stress-related component failures. RHS® tests all of its cylinder heads with premium COMP Cams® components – giving you the optimal airflow combination for maximum engine performance. These exclusive RHS® part kits provide you with the ideal combination of components for your cylinder head assembly and are proven to offer superior performance for your specific engine application.

CYLINDER HEAD ASSEMBLY KITS^A

Part #	Description	Intake Valve	Exhaust Valve	Valve Lock	Retainer	Inner Spring	Outer Spring	Spring Seat	Valve Seals	Rocker Studs	Guide Plates
SMALL BLOCK CHEVY											
12987-01	180cc Runner, Hyd. Roller	6001	6002	611	740	975	984	4770	529	4503	4808
12972-01	180cc Runner, Flat Tappet	6001	6002	601	743	-	972	4696	529	4502	4808
12918-01B	180cc Runner, Hyd. Roller w/ Beehive™ Springs	6001	6002	648	787	-	26918	4705	529	4503	4808
12987-02	235cc Runner, Hyd. Roller	6003	6002	611	740	975	984	4770	529	4503	4808
12972-02	235cc Runner, Flat Tappet	6003	6002	601	743	-	972	4696	529	4502	4808
BIG BLOCK CHEVY											
11924-01	320cc Runner, Hyd. Roller	6022	6023	611	741	974	920	4771	529	4512	4806
11991-01	320cc Runner, Mech. Roller	6022	6023	611	733	-	991	4774	529	4512	4806
11120-01B	320cc Runner, Hyd. Roller w/ Beehive™ Springs	6022	6023	611	795	-	26120	4696	529	4512	4806
11924-02	360cc Runner, Hyd. Roller	6021	6023	611	741	974	920	4771	529	4512	4806
11991-02	360cc Runner, Mech. Roller	6021	6023	611	733	-	991	4774	529	4512	4806
SMALL BLOCK FORD											
35987-01	160cc Runner, Hyd. Roller	6014	6002	611	740	975	984	4771	529	4503	4835
35972-01	160cc Runner, Flat Tappet	6014	6002	601	743	-	972	4696	529	4502	4835
35972-02	180cc Runner, Flat Tappet	6001	6002	601	743	-	972	4696	529	4502	4835
35987-02	200cc Runner, Hyd. Roller	6001	6002	611	740	975	984	4771	529	4503	4835
35987-03	215cc Runner, Hyd. Roller	6003	6002	611	740	975	984	4771	529	4503	4835
35972-03	215cc Runner, Flat Tappet	6003	6002	601	743	-	972	4696	529	4502	4835

^A Each kit includes all of the components needed to assemble **ONE** individual cylinder head.



BOLT KITS

Part #	Description
SMALL BLOCK CHEVY	
HBK-12100	23° Cast Iron OEM & Gen III Vortec/Truck, Hex
BIG BLOCK CHEVY	
HBK-11100	Late Bowtie Iron & Aluminum, Hex
SMALL BLOCK FORD	
HBK-31100	289-302, 5.0L w/ Factory or Aftermarket Heads, 12-Point Nuts
HBK-35100	351W w/ Factory or Aftermarket Heads, Hex



STUD KITS

Part #	Description
SMALL BLOCK CHEVY	
HSK-12100	23° Cast Iron OEM & Gen III Vortec/Truck, 12-Point Nuts
BIG BLOCK CHEVY	
HSK-11100	Late Bowtie Iron & Aluminum, 12-Point Nuts
SMALL BLOCK FORD	
HSK-31100	289-302, 5.0L w/ Factory or Aftermarket Heads, 1/2"-13 w/ 12-Point Nuts
HSK-35100	351W w/ Factory or Aftermarket Heads, 12-Point Nuts

VALVE TRAIN

ROCKER ARMS



ULTRA PRO MAGNUM™ ROLLER ROCKER ARMS

- Investment cast 8650 chromemoly steel body and arched, web-like design increase strength and rigidity while significantly reducing the moment of inertia
- CAD and FEA design is approximately 29% stronger than the previous Magnum™ designs
- Black oxide exterior finish helps prevent corrosion
- Increased retainer and spring clearance for use with large diameter valve springs, retainers and .050" locks without experiencing clearance or fitment issues
- Feature oversized trunions, precision-sorted needle bearings, hardened roller tips, a rebuildable design & lifetime guarantee against breakage on the rocker body



ULTRA PRO MAGNUM™ XD ROLLER ROCKER ARMS

- Engineered from durable 8650 steel with arched, web-like design for maximum strength and rigidity
- The unique XD design utilizes advanced FEA and CAD design and development to improve strength, stiffness and moment of inertia optimization
- A unique and wide ratio range to fit almost any popular application from 1.5 to 1.7 in .5 increments for Chevy and 1.6 to 1.7 for various Ford applications
- Fully rebuildable rockers with precision-sorted needle bearings and hardened roller tips
- Built to outlast and outperform all other drag and circle track racing rocker arms

Part #	Description	Rocker Stud	Ratio
CHEVROLET			
1601-16	V8 265-400	3/8"	1.52
1602-16	V8 265-400	3/8"	1.6
1604-16	V8 265-400	7/16"	1.52
1605-16	V8 265-400	7/16"	1.6
1617-16	V8 1988 & Later w/ Self Aligning Rockers	3/8"	1.52
1618-16	V8 1988 & Later w/ Self Aligning Rockers	3/8"	1.6
1629-16	V8 348-409	3/8"	1.7
1620-16	V8 396-454	7/16"	1.7
GM LS			
1675-16	LS1/2/6	3/8"	1.75
1676-16	LS3/L92/L99 (Factory Offset)	3/8"	1.77
FORD			
1631-16	V8 289-302-351W	3/8"	1.6
1632-16	V8 289-302-351W	7/16"	1.6
1634-16	V8 Self Aligning Rockers	3/8"	1.6

Part #	Description	Rocker Stud	Ratio
CHEVROLET			
1801-16	V8 265-400	3/8"	1.5
1807-16 ^A	V8 265-400	3/8"	1.55
1802-16	V8 265-400	3/8"	1.6
1803-16	V8 265-400	3/8"	1.65
1804-16 ^A	V8 265-400	7/16"	1.5
1808-16 ^A	V8 265-400	7/16"	1.55
1805-16 ^A	V8 265-400	7/16"	1.6
1806-16 ^A	V8 265-400	7/16"	1.65
1817-16 ^A	V8 265-400	7/16"	1.7
1826-16 ^A	V8 396-454	7/16"	1.6
1820-16 ^A	V8 396-454	7/16"	1.7
1823-16 ^A	V8 396-454	7/16"	1.73
FORD			
1831-16	V8 289-302-351W	3/8"	1.6
1833-16	V8 289-302-351W	3/8"	1.7
1832-16 ^A	V8 289-302-351W	7/16"	1.6
1834-16 ^A	V8 289-302-351W	7/16"	1.7

^A Must use screw-in studs and guide plates.

VALVE TRAIN

ROCKER ARMS

Part #	Description	Rocker Stud	Ratio
CHEVROLET			
19001-16 ^A	V8 265-400	3/8"	1.5
19002-16 ^A	V8 265-400	3/8"	1.6
19003-16 ^A	V8 265-400	3/8"	1.65
19004-16 ^A	V8 265-400	7/16"	1.5
19005-16 ^A	V8 265-400	7/16"	1.6
19006-16 ^A	V8 265-400	7/16"	1.65
19021-16 ^B	V8 396-454	7/16"	1.7
GM LS			
19024-16 ^C	GM LS Series	8mm	1.72
19025-16 ^C	GM LS Series	8mm	1.82
FORD			
19043-16 ^D	V8 289-302-351W	3/8"	1.6
19048-16 ^D	V8 289-302-351W	3/8"	1.72
19044-16 ^D	V8 289-302-351W	7/16"	1.6
19049-16 ^D	V8 289-302-351W	7/16"	1.72

^A Will not replace late model rocker.

^B Includes pedestals and bolts.

^C Must use screw-in studs and guide plates.

^D Requires stud #4514-16 to replace late model pedestal.



Part #	Description	Ratio		Offset	
		In.	Ex.	In.	Ex.
CHEVROLET					
1510	Small Block PTL/RHS® Pro Action™ Iron	1.5	1.5	.170"	.080"
1511	Small Block PTL/RHS® Pro Action™ Aluminum	1.5	1.5	.250"	.080"
1503 ^A	Small Block Dart Iron Eagle	1.6	1.5	.170"	.170"
1506	Small Block Brodix Track 1	1.6	1.5	.170"	.080"
1502	Small Block AFR#190-195-210	1.6	1.5	.250"	.080"
1524 ^B	Small Block RHS® 23° Pro Elite™ CNC-Ported 240cc Runner	1.6	1.5	.375"	.170"
1519	Small Block Brodix 8X, 10X, 11X	1.6	1.5	.450"	.080"
1508	Small Block GM Bowtie 18°	1.6	1.5	.550"	.000"
1504	Big Block Standard/Dart Iron Eagle	1.7	1.7	.000"	.000"
1520	Big Block RHS® Pro Action™ Alum. & Iron 320/360 Runner	1.7	1.7	.000"	.000"
1505	Big Block Brodix 2+, Dart 320/360	1.7	1.7	.000"	.000"
1507	Big Block Brodix 2 Xtra	1.7	1.7	.000"	.000"
1512	Big Block Brodix Big Duke/ Dart Iron Eagle, World Products Grumpy Jenkins	1.7	1.7	.000"	.000"
1513	Big Block 18° Brodix Big Duke/ Dart Big Chief	1.7	1.7	.750"	.400"

^A This system will not work on the 49cc Dart Iron Eagle Cylinder Heads.

^B Designed for RHS® Part #12328 and #12329.



ULTRA-GOLD™ ARC ALUMINUM ROLLER ROCKER ARMS

- Next gen Ultra-Gold™ ARC Rockers increase power, enhance valve train stability and improve oiling while fitting under stock valve covers
- New extrusion based on improvements developed through FEA analysis, therefore resulting in a stronger body without compromising mass
- Arced channel and contoured top create the best strength-to-weight ratio possible
- Exclusive spiral lock type clips replace retaining clips

SHAFT MOUNT ALUMINUM ROCKER SYSTEMS

- Rigidity of the shaft system adds stability to the cylinder heads and the valve train setup
- Made from 2024 aluminum with an 8620 hardened steel shaft for optimum durability
- Designed using the latest CAD and FEA technology and field tested by experts in every racing discipline

Part #	Description	Ratio		Offset	
		In.	Ex.	In.	Ex.
GM LS					
1500	LS1/2/6 Cathedral Port Heads	1.7	1.7	.000"	.000"
1501	LS1/2/6 Cathedral Port Heads	1.8	1.8	.000"	.000"
1521	LS3/L92 Rectangle Port Heads	1.7	1.7	.215"	.000"
1523	LS7	1.8	1.8	.000"	.000"
1525	LS7/RHS® Raised Port	1.8	1.8	.000"	.000"
CHRYSLER					
1515	Small Block (273-360) OEM Iron Head Single (OE Through Shaft Oiling)	1.5	1.5	.000"	.000"
1516	Big Block (383-440) OEM Iron Head Single (OE Through Shaft Oiling)	1.5	1.5	.250"	.080"
1517	Big Block (383-440) Indy Head 440-1 & 440-C Single (OE Through Shaft Oiling)	1.5	1.5	.800"	.000"
1522	426 Hemi OEM Iron Head	1.6	1.5	1.950"	.000"
FORD					
1514	289-351W Production Head	1.6	1.6	.000"	.000"
PONTIAC					
1518	Edelbrock P8	1.5	1.5	.080"	.080"

VALVE TRAIN

ROCKER STUDS & STUD GIRDLES



ROCKER ARM STUDS

- **Magnum studs** are best for moderate lift and spring pressure applications
- **Hi-Tech™ Race Rocker Studs** work in all high-end applications
- **Hi-Tech™ Race Rocker Studs** feature thin jam nut for rocker clearance, rolled threads for maximum contact and ground flat top for accurate valve adjustment
- **Black oxide finish** prevents oxidation and corrosion of the threads



STUD GIRDLES

- Made of **6061-T6 aluminum** for light weight and anodized to reduce windage
- Available in solid bar one-piece and spring loaded two-piece designs
- Kits come complete with hex head adjusting nuts, interlocking set screws and all necessary hardware

Part #	Description	Base Dia.	Thread Length	Stud Dia.	Stud Length
4502-16	Magnum Rocker Stud	7/16"	.680"	3/8"	1.750"
4503-16	Magnum Rocker Stud	7/16"	.825"	7/16"	1.750"
4504-16	Magnum Rocker Stud for Ford	5/16"	.680"	3/8"	1.750"
4500-16	High Energy™ Rocker Stud	7/16"	.680"	3/8"	1.750"
4501-16	High Energy™ Rocker Stud	7/16"	.825"	7/16"	1.750"
4505-16	Hi-Tech™ Race Rocker Stud	7/16"	.680"	3/8"	1.750"
4515-16	Hi-Tech™ Race Rocker Stud	7/16"	.710"	3/8"	1.895"
4506-16	Hi-Tech™ Race Rocker Stud	7/16"	.710"	7/16"	1.750"
4554-16 ^A	Hi-Tech™ Race Rocker Stud for GM Gen III/LS1/LS2/LS6	8mm	.800"	3/8"	1.500"
4512-16	Hi-Tech™ Race Rocker Stud for Chevrolet Big Block	7/16"	.750"	7/16"	1.900"
4507-8	Hi-Tech™ Race Exhaust for 396-454 for Chevrolet w/ Aluminum Heads	7/16"	1.680"	7/16"	2.000"
4514-16	Hi-Tech™ Race Rocker Stud for Chevrolet Big Block Mark V & Mark VI	3/8"	.750"	7/16"	1.900"

^A Replacement components only, must be used with #13705-KIT and #13703-KIT.

Part #	Description	Stud Dia.
CHEVROLET		
4007	265-400 Solid Bar Design	3/8"
4009	265-400 Solid Bar Design	7/16"
4001	265-400 Spring Loaded Design	3/8"
4004	265-400 Spring Loaded Design	7/16"
4010 ^A	265-400 Alum. Bowtie Cyl. Head Solid Bar Design	7/16"
4011	265-400 Brownfield Cyl. Head Solid Bar Design	7/16"
4021	396-454 Solid Bar Design Standard Stud Spacing, Brodix-2	7/16"
FORD		
4013	289-302, 351W Standard Head	3/8"
4014	289-302, 351W Standard Head	7/16"
4015	289-302, 351W RHS® Pro Action™ or Motorsport Aluminum Head	7/16"

All COMP Cams® Ford stud girdles shown above are solid bar design.

^A Cast iron Bowtie heads and Dart Iron Eagle heads use standard Chevrolet girdles (#4007, #4009, #4001 and #4004).



ULTRA-GOLD™ STUD GIRDLES

- Engineered from durable but light-weight **6061-T6 aluminum** for superior strength characteristics
- Available in solid bar one-piece and spring loaded two-piece designs
- Perfect for use with Ultra-Gold™ ARC Aluminum Roller Rocker Arms
- Comes with hex head adjusting nuts, interlocking set screws and all other required hardware

Part #	Description	Rocker Stud
CHEVROLET		
4027	265-400 Spring Loaded Design	3/8"
4022	265-400 Spring Loaded Design	7/16"
4036	265-400 for RHS® Head Spring Loaded Design	7/16"
4026	265-400 Solid Bar Design	3/8"
4023	265-400 Solid Bar Design	7/16"
4025	396-454 Solid Bar Design	7/16"
4035	396-454 for RHS® Head	7/16"
FORD		
4030	289-302, 351W Solid Bar Design	3/8"
4024	289-302, 351W Solid Bar Design	7/16"

Kits are complete with hex head adjusting nuts, interlocking set screws and all hardware.

VALVE TRAIN

POLYLOCKS & GUIDE PLATES

Part #	Description	Stud Dia.
4600-16	Hi-Tech™ Polylock for Aluminum and Ultra Pro Magnum™ Rockers	7/16"
4601-16	Hi-Tech™ Polylock for Aluminum and Ultra Pro Magnum™ Rockers	3/8"
4602-16	Magnum Polylock	3/8"
4603-16	Magnum Polylock	7/16"
4508-1	Stud Girdle Adjusting Nut	7/16"
4508-16	Stud Girdle Adjusting Nut (12) #4508 & (4) #4508S	7/16"
4508S-1	Stud Girdle Adjusting Nut (w/ Snap Ring to Hold Girdle Bar)	7/16"
4509-1	Stud Girdle Adjusting Nut	3/8"
4509-16	Stud Girdle Adjusting Nut (12) #4509 & (4) #4509S	3/8"
4509S-1	Stud Girdle Adjusting Nut (w/ Snap Ring to Hold Girdle Bar)	3/8"
4510-8	Stud Girdle Adjusting Nut, Intake BB Chevrolet	7/16"
4511-16	Stud Girdle Adjusting Nut, BB Ford Threaded Through Full Length	7/16"



POLYLOCKS

- Designed for unmatched strength and superior locking force
- Magnum™ Polylocks are designed specifically for moderate lift and spring pressure applications
- Hi-Tech™ Polylocks work well in all high end race applications
- Stud girdle polylocks are precision ground for minimum runout & tapered for extra strength in locking area

Part #	Description	Type	Pushrod Size	Stud Dia.
CHEVROLET				
4800-8 ^A	265-400	Raised	5/16"	7/16"
4802-8 ^A	265-400	Raised	3/8"	7/16"
4808-8 ^A	265-400	Flat	5/16"	7/16"
4810-8 ^A	265-400	Flat	3/8"	7/16"
4806-8	396-454	Raised	3/8"	7/16"
4820-8	396-454	Raised	7/16"	7/16"
GM LS				
4854-8 ^B	LS1/LS6	Flat	5/16"	8mm
4856-8 ^B	LS1/LS6	Flat	3/8"	8mm
CHRYSLER				
4825-8 ^C	Magnum V8	Flat	5/16"	5/16"
FORD				
4816-8 ^A	289-351W	Flat	5/16"	7/16"
4818-8 ^A	289-351W	Flat	3/8"	7/16"



GUIDE PLATES

- Designed using stereo lithography techniques for precise fit
- Hardened and black oxide finished
- Feature exact stud placement and rounded contact points
- Available in many different configurations to fit your engine's needs

^A Some applications require machine work.

^B Replacement components only, must be used with #13703-KIT and #13705-KIT.

^C Only for engines with stud mount rockers. No machine work required. For 3.9L V6 use -6 suffix; for 8.0L V10 trucks use -10 suffix.

Part #	Description	Type	Pushrod Size	Stud Dia.
CHEVROLET				
4835-8	265-400	Flat Adjustable	5/16"	7/16"
4839-8	265-400	Flat Adjustable	3/8"	7/16"
4811-8 ^A	396-454	Raised Adjustable	3/8"	7/16"
FORD				
4835-8 ^A	289-351W	Flat Adjustable	5/16"	7/16"
4839-8	289-351W	Flat Adjustable	3/8"	7/16"



2-PIECE ADJUSTABLE GUIDE PLATES

- Small Block Chevy and Ford plates are designed for use on cylinder heads with relocated intake ports
- Big Block Chevy guide plate is designed for use with RHS® or other aftermarket cylinder heads
- Able to be welded after final adjustment

^A Requires 7/16" stud base thread (standard on RHS® and other aftermarket heads).

VALVE TRAIN

PUSHRODS

Made from one-piece chromemoly steel tubing, COMP Cams® Magnum and Hi-Tech™ Pushrods are heat-treated for both durability and guide plate compatibility. The black oxide finish with laser-etched part number and length give these pushrods a great performance look and also shed oil, providing you smoother, more efficient valve train operation. The Magnum series is designed for street performance and mild racing, while the Hi-Tech™ series is ideal for the increased demands of hardcore street and race applications.



MAGNUM .080" WALL PUSHRODS

Part #	Description	Guide Plates	Dia.	Length Int./Ex.	End
CHEVROLET					
7608-16	V8 265-400 + 90° V6 200-262 w/ OEM Hyd. Roller Cam	Yes	5/16"	7.200"	F-F
7609-16	V8 265-400 + 90° V6 w/ Retro-Fit Hydraulic Roller Cam	Yes	5/16"	7.300"	F-F
7372-16	V8 265-400 + 90° V6 200-262, Hardened Stock Length	Yes	5/16"	7.800"	F-F
7693-16	V8 265-400 + 90° V6 200-262, +.100" Hardened	Yes	5/16"	7.900"	F-F
7694-16	V8 265-400 + 90° V6 200-262, +.150" Hardened	Yes	5/16"	7.950"	F-F
7695-16	V8 265-400 + 90° V6 200-262, +.200" Hardened	Yes	5/16"	8.000"	F-F
7472-16	V8 265-400 + 90° V6 200-262, +.350" Hardened	Yes	5/16"	8.144"	F-F
7513-16	V8 265-400 + 90° V6 200-262, Hardened Stock Length	Yes	3/8"	7.800"	D-D
7684-16	V8 265-400 + 90° V6 200-262, +.100" Hardened	Yes	3/8"	7.900"	D-D
7154-16	V8 396-454, #7131 Intake – #7141 Exhaust (Standard Length, Standard Block)	Yes	3/8"	8.280"/9.250"	D-D
7663-16	V8 396-454, #7164 Intake – #7174 Exhaust (w/ Retro-Fit Hydraulic Roller Cam, Standard Block)	Yes	3/8"	7.750"/8.700"	D-D
7654-16	V8 366-427, #7651 Intake – #7661 Exhaust (Truck & Marine Tall Deck Block)	Yes	3/8"	8.680"/9.652"	D-D
FORD					
7632-16	V8 221-302, 1962-69	Yes	5/16"	6.800"	F-F
7631-16	V8 302, 1969-85 Non-Roller, Non-H.O.	Yes	5/16"	6.900"	F-F
7492-16	V8 Boss 302, 1969-70 Boss	Yes	5/16"	7.605"	E-E
7472-16	V8 351W, 1969-78	Yes	5/16"	8.150"	F-F

*5/16" Non-oiling cup and 3/8" non-oiling formed tip.



END TYPES

- A. 5/16" Non-Oiling Pressed-In Cup
- B. 5/16" Non-Oiling Welded Ball
- C. 5/16" Non-Oiling Pressed-In Ball
- D. 3/8" Body w/ 5/16" Oiling Formed Tip
- E. 5/16" Oiling Pressed-In Ball
- F. 5/16" Body w/ 5/16" Oiling Formed Tip
- G. 3/8" Body w/ 5/16" Oiling Pressed-In Tip

All end types and other applications available.
See website for full listing.

VALVE TRAIN

PUSHRODS

HI-TECH™ PUSHRODS

Part #	Description	Wall Thickness	Dia.	Length Int./Ex.
CHEVROLET				
7940-16	-.600" Short Standard Length V8 262-400 or OE Hydraulic Roller Lifter B45	.080"	5/16"	7.200"
7944-16	-.550" Short V8 262-400	.080"	5/16"	7.250"
7949-16	-.500" Short V8 262-400 Retro-Fit Standard Length Hydraulic Roller Lifter	.080"	5/16"	7.300"
7950-16	-.450" Short V8 262-400	.080"	5/16"	7.350"
7963-16	-.100" Short V8 262-400	.080"	5/16"	7.700"
7970-16	-.050" Short V8 262-400	.080"	5/16"	7.750"
7972-16	Standard Length V8 262-400	.080"	5/16"	7.800"
7974-16	+.050" Long V8 262-400	.080"	5/16"	7.850"
7993-16	+.100" Long V8 262-400	.080"	5/16"	7.900"
7994-16	+.150" Long V8 262-400	.080"	5/16"	7.950"
7995-16	+.200" Long V8 262-400	.080"	5/16"	8.000"
7996-16	+.250" Long V8 262-400	.080"	5/16"	8.050"
7913-16	Standard Length V8 262-400, 3/8" Diameter	.080"	3/8"	7.800"
7984-16	+.100" Long V8 262-400, 3/8" Diameter	.080"	3/8"	7.900"
7954-16	Standard Length V8 396-454 Set (8) – #7931 Intake and (8) – #7941 Exhaust	.080"	3/8"	8.280"/9.250"
7982-16	Standard V8 396-454 +.100" Long Set (8) – #7969 Intake and (8) – #7979 Exhaust	.080"	3/8"	8.380"/9.350"
7998-16	Standard V8 396-454 w/ Retro-Fit Hydraulic Roller Cam Set (8) – #8905 Intake and (8) – #7907 Exhaust	.080"	3/8"	7.750"/8.700"
7964-16	Standard Length V8 396-454 Tall Deck Set (8) – #7951 Intake and (8) – #7961 Exhaust	.080"	3/8"	8.680"/9.650"
7942-16	+ .100" Long V8 396-454 Tall Deck Set (8) – #7968 Intake and (8) – #7978 Exhaust	.080"	3/8"	8.780"/9.750"
7962-16	Standard Length V8 396-454 Set (8) – #7911 Intake and (8) – #7988 Exhaust	.125"	7/16"	8.275"/9.250"
7952-16	Standard Length V8 396-454 Tall Deck Set (8) – #7943 Intake and (8) – #7953 Exhaust	.125"	7/16"	8.675"/9.650"
GM LS				
7949-16	-.100" Short GM Gen III/LS1/LS2/LS6	.080"	5/16"	7.300"
7950-16	-.050" Short GM Gen III/LS1/LS2/LS6	.080"	5/16"	7.350"
7955-16	Standard Length GM Gen III/LS1/LS2/LS6	.080"	5/16"	7.400"
7956-16	+.050" Long GM Gen III/LS1/LS2/LS6	.080"	5/16"	7.450"
7957-16	+.100" Long GM Gen III/LS1/LS2/LS6	.080"	5/16"	7.500"
FORD				
7929-16	Standard Length Small Block Ford 1962-69 221-302	.080"	5/16"	6.800"
7930-16	+.050" Long Small Block Ford 1962-69 221-302	.080"	5/16"	6.850"
7933-16	+.100" Long Small Block Ford 1962-69 221-302	.080"	5/16"	6.900"
7930-16	Standard Length Small Block Ford 1968-85 255 and 302	.080"	5/16"	6.850"
7935-16	+.100" Long Small Block Ford 1968-85 255 and 302	.080"	5/16"	6.950"
7997-16	-.050" Short Small Block Ford 1969-78 351W	.080"	5/16"	8.100"
7965-16	Standard Length Small Block Ford 1969-78 351W	.080"	5/16"	8.150"
7966-16	+.050" Long Small Block Ford 1969-78 351W	.080"	5/16"	8.200"

Other lengths and wall thicknesses available.
Custom pushrod kits available.



VALVE TRAIN

TIMING SETS & GEAR DRIVES



LS TIMING SETS FOR RAISED CAM BLOCKS

- Engineered for use with cam blocks raised .388" above stock, which includes the popular RHS® LS Race Block
- Available in a wide variety of options, including 3-keyway, 9-keyway or Hex Adjust; 1 or 4 pole reluctors; and 1- or 3-bolt cam cores

Part #	Description
GM LS	
9158KT	LS Single Chain Hex Adjust Type for 3-Bolt Cam, 1 Pole Reluctor (24x)
9172KT	LS Single Chain Hex Adjust Type for 3-Bolt Cam, 4 Pole Reluctor (58x)
9673T3	LS Single Chain 3 Keyway for 1-Bolt Cam, 4 Pole Reluctor (58x)
9658T3	LS Single Chain 3 Keyway for 3-Bolt Cam, 1 Pole Reluctor (24x)
9672T3	LS Single Chain 3 Keyway for 3-Bolt Cam, 4 Pole Reluctor (58x)
9673T9	LS Single Chain 9 Keyway for 1-Bolt Cam, 4 Pole Reluctor (58x)
9658T9	LS Single Chain 9 Keyway for 3-Bolt Cam, 1 Pole Reluctor (24x)
9672T9	LS Single Chain 9 Keyway for 3-Bolt Cam, 4 Pole Reluctor (58x)
3173KT	LS Double Chain Hex Adjust Type for 3-Bolt Cam, 1 Pole Reluctor (24x)
3154	LS Double Chain 3 Keyway for 3-Bolt Cam, 1 Pole Reluctor (24x)
9167KT	LS7 Single Chain Hex Adjust Type for 3 Bolt Cam, 4-Pole Reluctor (58x), One-Piece Oil Cog w/ Gear
9667T3	LS7 Single Chain 3 Keyway for 3-Bolt Cam, 4 Pole Reluctor (58x)
9302	LS Replacement Single Chain
9132	LS Replacement Double Chain



GEAR DRIVES

- Precision machined, heat-treated billet steel gears ensure timing accuracy and durability
- Unique design virtually eliminates timing movement throughout the entire RPM range
- Complete ready-to-install kit, including bolts and lock plate, ideal for street performance applications that desire that whining blower sound

Part #	Description
CHEVROLET	
4100	Chevrolet Small Block Gear Drive System
4136 ^A	Chevrolet V8 305, 350 w/ Factory Roller Cam Gear Drive System
4110	Chevrolet Big Block Gear Drive System
4100BW	Replacement Brass Washer for #4100 Gear Drive System
4110BW	Replacement Brass Washer for #4110 Gear Drive System
GM LS	
5490	RHS® LS Sprint Car Front Cover with Gear Drive
5491	GM LS Sprint Car Front Cover with Gear Drive
FORD	
4120	Ford Small Block Gear Drive System

^A Not for use in LT1 engines.

SPORTSMAN VALVES

COMP Cams® Sportsman Valves are available in a variety of materials, diameters and stem lengths for street and competition engines. The stainless steel valves are made from 21-4N forged steel alloy with 50 HRc minimum hard tips (eliminates lash caps); these valves deliver tremendous performance and durability. The hard chrome-plated 11/32" stems utilize proprietary oil retention surfacing. For extremely high revving LS applications, RHS® engineers developed titanium valves. Weighing 35 percent less than stainless steel, titanium valves are a must for race applications where valve float is not an option. For high temperature and high boost applications, valves constructed from Inconel superalloy are also available.



Part #	Description	Material	Overall Length	Lock Groove	Valve Type	Head Dia.	Stem Size
CHEVROLET							
6006-8	Chevrolet 265-400	Solid Stainless	4.911"	Single	Intake	1.940"	11/32"
6014-8	Chevrolet 265-400	Solid Stainless	5.011"	Single	Intake	1.940"	11/32"
6004-8	Chevrolet 265-400	Solid Stainless	4.911"	Single	Intake	2.020"	11/32"
6001-8	Chevrolet 265-400	Solid Stainless	5.011"	Single	Intake	2.020"	11/32"
6009-8	Chevrolet 265-400	Solid Stainless	5.111"	Single	Intake	2.020"	11/32"
6018-8	Chevrolet 265-400	Solid Stainless	5.011"	Single	Intake	2.055"	11/32"
6013-8	Chevrolet 265-400	Solid Stainless	4.911"	Single	Intake	2.080"	11/32"
6003-8	Chevrolet 265-400	Solid Stainless	5.011"	Single	Intake	2.080"	11/32"
6007-8	Chevrolet 265-400	Solid Stainless	5.111"	Single	Intake	2.080"	11/32"
6016-8	Chevrolet 265-400	Solid Stainless	4.911"	Single	Exhaust	1.500"	11/32"
6011-8	Chevrolet 265-400	Solid Stainless	4.911"	Single	Exhaust	1.600"	11/32"
6002-8	Chevrolet 265-400	Solid Stainless	5.011"	Single	Exhaust	1.600"	11/32"
6012-8	Chevrolet 265-400	Solid Stainless	5.111"	Single	Exhaust	1.600"	11/32"
6022-8	Chevrolet 396-454	Solid Stainless	5.468"	Single	Intake	2.250"	See Note Below*
6021-8	Chevrolet 396-454	Solid Stainless	5.468"	Single	Intake	2.300"	See Note Below*
6023-8	Chevrolet 396-454	Solid Stainless	5.454"	Single	Exhaust	1.880"	See Note Below*
GM LS							
6039-8	Gen III LS1/LS2/LS6	Solid Stainless	4.900"	Single	Intake	2.020"	8mm
6046-8	Gen III LS1/LS2/LS6	Solid Stainless	4.900"	Single	Intake	2.055"	8mm
6047-8	Gen III LS1/LS2/LS6	Solid Stainless	4.900"	Single	Intake	2.080"	8mm
6048-8	Gen III LS1/LS2/LS6	Solid Stainless	4.930"	Single	Exhaust	1.570"	8mm
6049-8	Gen III LS1/LS2/LS6	Solid Stainless	4.930"	Single	Exhaust	1.600"	8mm
6051-8	Gen III LS1/LS2/LS6	Solid Stainless	5.450"	Single	Intake	2.080"	8mm
6052-8	Gen III LS1/LS2/LS6	Solid Stainless	5.450"	Single	Intake	2.040"	8mm
6053-8	Gen III LS1/LS2/LS6	Solid Stainless	5.450"	Single	Exhaust	1.600"	8mm
6054-8	Gen III LS1/LS2/LS6	Solid Stainless	5.450"	Single	Exhaust	1.570"	8mm
6062-8	Gen III RHS® LS7	Hollow Stem Stainless	5.550"	Single	Intake	2.200"	8mm
6063-8	Gen III RHS® LS7	Solid Stainless	5.590"	Single	Exhaust	1.615"	8mm
6064-8	Gen III RHS® LS7	Titanium	5.565"	Single	Intake	2.200"	8mm
6066-8	Gen III RHS® LS7	Titanium	5.595"	Single	Intake	2.200"	8mm
6067-8	Gen III RHS® LS7	Inconel	5.590"	Single	Exhaust	1.615"	8mm

*Big Block Chevrolet factory valve stem size is 3/8", however all COMP Cams® Big Block Chevy valves listed feature 11/32" valve stem diameter for increased flow and less weight.

VALVE COVERS & GASKETS

VALVE COVERS

These RHS® Valve Covers are the perfect addition to your performance engine. The sleek and durable DuPont black-wrinkle powder coat finish with a polished laser etched logo is sure to provide that performance look you desire.

These valve covers are perimeter bolt style and include two chrome breathers with laser etched logos, two black rubber grommets and installed baffles. The installed baffles are welded in place to ensure no oil enters the breathers. The chrome breathers are present on both valve covers which allows for proper crankcase ventilation. In addition, these covers were designed tall enough to provide necessary clearance to accommodate aftermarket valve trains. They are manufactured and packaged in the U.S.A.

Also available is the SBC billet aluminum adapter kit that enables mounting traditional Gen I Small Block Chevy valve covers on a Gen III/IV LS engine. Specifically, the adapters work with center bolt LS heads and perimeter bolt traditional SBC valve covers.



Part #	Description
VC-12000	Small Block Chevy Valve Covers
VC-11000	Big Block Chevy Valve Covers
VC-35000	Small Block Ford Valve Covers
NG4011	Small Block Chevy Valve Cover Adapter Kit for LS Engines

GASKETS

Properly changing cylinder heads cannot be completed without replacing the gaskets that were disturbed when the old heads were removed. RHS® offers high-quality intake, exhaust and valve cover gaskets to suit many GM and Ford applications. The intake manifold and valve cover gaskets are made from a silicone-reinforced material for superb sealing characteristics and are designed for reliable, leak-free performance – even when used in high-powered race engines. The header gaskets feature reinforced graphite construction for maximum heat resistance and protection against blowing out, ensuring that your exhaust system operates at peak efficiency.



Part #	Application	Description	Port Dimensions
INTAKE GASKETS			
1707	Small Block Chevy	.060" Thick Paper w/ Silicone	1.32" x 2.22"
1710	Big Block Chevy	.060" Thick Paper w/ Silicone	1.85" x 2.55"
1713	Small Block Ford	.060" Thick Paper w/ Silicone	1.29" x 2.12"
EXHAUST GASKETS			
1708	Small Block Chevy	Graphite	1.51" x 1.56"
1711	Big Block Chevy	Graphite	1.89" x 1.95"
1714	Small Block Ford	Graphite	1.30" x 1.60"
1716	GM Gen III LS1/2/6	Graphite	1.57" x 1.76"
VALVE COVER GASKETS			
1709	Small Block Chevy	.120" Thick Paper w/ Silicone	N/A
1712	Big Block Chevy	.120" Thick Paper w/ Silicone	N/A
1715	Small Block Ford	.120" Thick Paper w/ Silicone	N/A
HEADER GASKETS			
549400-SET	GM LS	.036" Compressed Thickness	4.000" Bore
549401-SET	GM LS	.036" Compressed Thickness	4.165" Bore
549402-SET	GM LS	.036" Compressed Thickness	4.200" Bore

INTAKE MANIFOLDS

FAST™ LSX_R™ & LSX_{RT}™ INTAKE MANIFOLDS

FAST™ engineers teamed up with the airflow specialists at RHS® to develop the LSX_R™ Intake Manifolds for rectangular port GM LS3 and LS7 engines and cathedral port LS1, -2, -6 engines, as well as the LSX_{RT}™ for GM 4.8/5.3/6.0L cathedral port truck engines and cathedral port LS1, -2, -6 race applications where hood clearance is not a concern. Each intake manifold is constructed from an advanced polymer material that offers a host of benefits over aluminum aftermarket intakes, including lighter weight, increased strength and improved heat dissipating characteristics. The LSX_R™ and LSX_{RT}™ series of manifolds also feature a 102mm air inlet that is perfectly suited to the FAST™ Big Mouth 102mm Throttle Body™, but the manifolds can also be used with OEM or aftermarket 90mm or 92mm throttle bodies.

Other features include an innovative multi-layer design with removable runners for quick and easy disassembly and porting, integrated nitrous bungs and a precise bolt-on fit that permits the use of factory accessories and OEM fuel/emission connections without adjustments or clearance issues.



- **LSX_R™ Intake Manifold produced gains of 16+ HP and 26+ RWHP on a near stock 500c.i. engine with a Big Mouth 102mm Throttle Body™**
- **LSX_{RT}™ Intake Manifold yielded an incredible 25 peak HP gain over the stock intake on a stock 6.0L engine with a Big Mouth 102mm Throttle Body™**

LS Port Identification

Raised Rectangle Port



Use Part #146202

Rectangle Port

LS3
LS9
L76
L92
L99
LSA
LSX_R™

Use Part #146102

Cathedral Port



Part #146302
or Part #146602



Part #	Description
INTAKE MANIFOLDS	
146302	LSX _R ™ 102mm Intake Manifold – LS1, -1, -6 Car
146102	LSX _R ™ 102mm Intake Manifold – LS3 Car
146202	LSX _R ™ 102mm Intake Manifold – LS7 Car
146602	LSX _{RT} ™ 102mm Intake Manifold
COMPONENTS	
146000	LSX _R ™ 102mm Upper Shell – Universal
146301	LSX _R ™ 102mm Lower Shell – LS1, -2, -6 Car
146001	LSX _R ™ 102mm Lower Shell – LS3 Car
146201	LSX _R ™ 102mm Lower Shell – LS7 Car
146100	LSX _{RT} ™ 102mm Upper Shell
146601	LSX _{RT} ™ 102mm Lower Shell
FUEL RAIL KITS	
146032-KIT	LSX _R ™ LS1/LS6 Billet Fuel Rail Kit
146021-KIT	LSX _R ™ LS2-Style OEM Fuel Rail Kit For LS1/LS6 (Non-Billet)
146033-KIT	LSX _R ™ LS2 Billet Fuel Rail Kit
146020-KIT	LSX _R ™ LS3/LS7 OEM Car Fuel Rail Kit (Non-Billet)
146025-KIT	LSX _R ™ LS3/LS7 OEM Fuel Injector Adapter Kit (No Fuel Rails)
146027-KIT	LSX _R ™ LS3/LS7 Car Billet Fuel Rail Kit
146028-KIT ^A	LSX _{RT} ™ Gen III Billet Fuel Rail Kit
146030-KIT	LSX _{RT} ™ Round OEM Fuel Rail Bracket Kit (No Fuel Rails)
146031-KIT	LSX _{RT} ™ Square OEM Fuel Rail Bracket Kit (No Fuel Rails)

^A For use with OEM GM Truck/SUV injectors and FAST™ LS2 injectors. LSX_R™ and LSX_{RT}™ parts are NOT interchangeable.

INTAKE MANIFOLDS & THROTTLE BODIES

23° ALUMINUM INTAKE MANIFOLDS

The RHS® 23° Aluminum Intake Manifolds are engineered specifically to port match fit RHS® 23° Small Block Chevy cylinder heads. Additionally, these manifolds are the only ones designed with a 4150 flange and bolt machining to fit all versions of Small Block Chevy cylinder heads, including classic originals, Vortec GM heads and late model perimeter corner vertical bolt style crate engine heads. They provide the power and strong torque curve throughout the mid-RPM range that is required for performance street, circle track and drag race applications up to 434c.i. The manifolds also feature auxiliary water ports, integral water crossover and dual sided distributor mounting points. Female pipe fittings at all four corners allow external water lines for reverse cooling applications.

RHS® and sister company FAST™ have teamed up to design a revolutionary port fuel injection version of these manifolds. Unlike the competition, the EFI manifold features port angle optimized injector bung mounting and machining features. FAST™ engineers laid the injectors down on an angle that points injectors directly at the valve stem. Additionally, the EFI manifold features integral sensors improving function, fitment and packaging. This is the only 4BBL-type EFI manifold on the market with an integral idle air control circuit.



Part #	Description
12902	23° Intake Manifold for Carbureted Applications
12902P	23° Intake Manifold for Carbureted Applications, Polished
12903	23° Intake Manifold for EFI Applications
12903P	23° Intake Manifold for EFI Applications, Polished

FAST™ BIG MOUTH THROTTLE BODIES™

When it comes to improving your engine's performance, increased airflow is a key ingredient. The Big Mouth 92mm or 102mm Throttle Bodies™ for the LSX_R™ and LSX_{RT}™ Intake Manifolds increase airflow through a series of innovative design changes and a slightly enlarged throttle opening. Significant testing and engineering was conducted to optimize cross-sectional flow and eliminate airflow turbulence, especially at part-throttle operation.

The throttle blade's thickness eliminates deflection, especially in boosted applications. To improve throttle response, the blade pivot is offset, while the beefed up linkage and dual throttle spring mechanism ensure total throttle control.



- **Better airflow than OEM or aftermarket 90mm units due to enlarged opening and modified internal design**
- **Dual throttle spring mechanism and beefed up linkage provide absolute throttle control**
- **Increased thickness of the throttle blade and the shaft resists deflection, especially in boosted applications**
- **Offset blade pivot allows for smoother operations and significantly improves throttle response**

Part #	Description
54092	Big Mouth 92mm Throttle Body™
54095	Big Mouth 92mm Throttle Body™ w/ TPS (No IAC)
54102	Big Mouth 102mm Throttle Body™
54103	Big Mouth 102mm Throttle Body™ w/ TPS (No IAC)

SPARK PLUGS



RHS® offers many application-specific spark plugs for our lineup of high performance cylinder heads. For street performance applications, ZEX™ Hyperperformance™ Spark Plugs are offered, and for racing usage a specially-designed line of Champion spark plugs is available with a wide assortment of heat ranges.

The ZEX™ spark plugs feature Igniter Core™ Technology, which allows them to conduct electricity more than five times better than platinum and nearly three times better than iridium. This results in more horsepower-producing spark energy and greater detonation resistance than either platinum or iridium. Meanwhile, Champion, a great name in aftermarket spark plug design, has also created a line of top performing racing plugs for RHS®. These plugs incorporate an exclusive Heat-Active™ alloy that provides maximum heat dissipation and conductivity to maintain stable operating temperatures.

- **Application-specific spark plugs designed for perfect RHS® compatibility and maximum performance**
- **ZEX™ spark plug line designed for street performance and Champion spark plug line for racing applications**
- **ZEX™ spark plugs feature Igniter Core™ Technology for increased spark energy**
- **Assortment of heat ranges to tune for specific needs and engine combinations**

Part #	Description	Size	Seat
ZEX™			
82003	Hyperperformance™ – Nickel Shell, Copper Core	14mm, .708" Reach, 5/8" Hex	Flat
82070	Power Tune™ – Nickel Shell, Copper Core	14mm, .750" Reach, 5/8" Hex	Tapered
CHAMPION			
82209	Projected Tip – Nickel Shell, Copper Core #S57YC	14mm, .708" Reach, 5/8" Hex	Tapered
82210	Projected Tip – Nickel Shell, Copper Core #S59YC	14mm, .708" Reach, 5/8" Hex	Tapered
82211	Cut Back Round – Nickel Shell, Copper Core #V59C	14mm, .460" Reach, 5/8" Hex	Tapered
82212	Cut Back Round – Nickel Shell, Copper Core #V57C	14mm, .460" Reach, 5/8" Hex	Tapered
82213	Fine Wire – Nickel Shell, Copper Core #C59	14mm, .750" Reach, 5/8" Hex	Flat
82214	Fine Wire – Nickel Shell, Copper Core #C57	14mm, .750" Reach, 5/8" Hex	Flat
82215	Projected Tip – Nickel Shell, Copper Core #C59YC	14mm, .750" Reach, 5/8" Hex	Flat
82216	Projected Tip – Nickel Shell, Copper Core #C57YC	14mm, .750" Reach, 5/8" Hex	Flat

Also available in set of (8); add (-8) to end of part number.

Due to revised spark plug location some applications may require a "shorty" style spark plug for header clearance.

TOOLS

TOOLS

For maximum efficiency and ease-of-use, RHS® offers a multitude of tools to aid you in cylinder head installation and/or modification. In addition to tools and measuring instruments, our simulation software will ensure that you find the optimal performance package without the hassle of trial and error.

Part #	Description
CYLINDER HEAD TOOLS	
POW101330	14mm Bolt Style (Most Engines) TDC Stops: Head On
POW351015	Heavy-Duty Manual Valve Spring Compressor
POW351140	125cc x .2cc Pro Head CC Kit
POW351150	100cc x .2cc Pro Head CC Kit
POW351155	100cc x 1cc Pro Head CC Kit
POW351160	250cc x 1cc Pro Head CC Kit
POW351170	50cc X .1cc x .2cc Pro Head CC Kit
4733	1.440" Spring Seat Cutter for .560" Guide
4735	1.580" Spring Seat Cutter for .560" Guide
4741	1.680" Spring Seat Cutter for .560" Guide
4718	1.440" Spring Seat Cutter for .630" Guide
4719	1.550" Spring Seat Cutter for .630" Guide
POW351520	Set of 4 Block & Head Handles
POW351590	Stud Remover/Installer
POW351400	V-Style Aluminum Head Holders, Pair
POW351405	V-Style Steel Head Holders, Pair
POW351410	Peg-Style Head Holders, Pair
POW735001	Valve Train Organizer - Valves, Springs & Retainers
POW735002	Valve Train Organizer - Rockers, Lifters & Pushrods
ENGINE BLOCK TOOLS	
549106	LS Engine Main Cap Puller
549150	RHS® LS Block Torque Plates
PUSHROD TOOLS	
7705 ^A	Hi-Tech™ Master Checking Pushrod Kit
7900 ^A	Magnum Master Checking Pushrod Kit
SPARK PLUG TOOLS	
POW301055	Spark Plug Indexing Board
POW301080	Pro Spark Plug Viewer
ABRASIVES	
POW351510	3 Piece Porting Mandrel Kit 1", 4", 8"
POW351705	Cartridge Roll Assortment
SIMULATION SOFTWARE	
186011	DeskTop Dyno 5™
186401	DeskTop Drag 5™
186301	DeskTop FastLap 5™
181501	Dyno Sim 5™
181601	Drag Sim 5™
181701	FastLap Sim 5™
181810	Dynomation 5™

MERCHANDISE

Show your support with RHS® merchandise – from apparel to banners to decals! All t-shirts are 100% cotton. The RacingHeadService white t-shirt is available in sizes Medium through XXXL, while the black RHS® “Use Your Head” t-shirt comes in sizes Medium through XXL. Also available is the RHS® hat, made from an unstructured black cotton twill with orange vents and the full color RHS® logo embroidered on the front and the RHS® website on the adjustable back band. One size fits all.

Or you can show your support for RHS® by displaying one of our lightweight 3' x 8' fabric banners in your shop or by putting an RHS® decal on your vehicle.

Part #	Description
APPAREL	
R1011-SIZE	T-Shirt (M-XXXL)
R1013-SIZE	“Use Your Head” T-Shirt (M-XXL)
R635B	Hat
MERCHANDISE	
100	Contingency Decal
408	3' x 8' Banner



FREQUENTLY ASKED QUESTIONS

I've picked out a set of heads, any ideas on an intake manifold?

Look at velocity for low RPM torque and flow for high RPM horsepower. Most carbureted performance intake manifolds are divided into two categories – dual plane and single plane. Dual plane manifolds are better for low and mid-range torque, and single plane manifolds (e.g., open plenum intake manifolds) emphasize mid and upper-RPM horsepower. In general, dual plane manifolds are better for street use; single plane manifolds are better for track use. Check with your intake manifold's manufacturer for specific information. EFI manifolds differ in design characteristics, with improved mid-range and top end horsepower being common advantages of aftermarket EFI intakes.

Based on my cylinder head choice, what is the right pushrod size for my engine?

Some variables influencing pushrod length are engine block deck height, cylinder head dimensions, camshaft specifications, and many other characteristics that vary between individual engines. We recommend you measure using a simple, inexpensive pushrod length-checking tool to verify geometry, and contact us so we can set you up with the correct pushrods the first time around.

What valve springs should I run with my cylinder head?

Valve springs should be chosen based on compatibility with the camshaft you plan to use. **Figure 1** lists general guidelines to help you decide which spring to run based on pressure requirements for different types of cams. Your valve springs must also have coil bind clearance of at least .060" over the camshaft's peak lift. All fully assembled cylinder heads offered by RHS® display maximum valve lift in their tech sheets. Beehive™ Springs typically have lighter open and seat pressures than conventional springs. The best way to choose a set of valve springs is to go with your cam manufacturer's recommendation after first verifying that the valve springs will satisfy your cylinder head's spring pocket diameter and installed height requirements.

FIGURE 1.

General Valve Spring Pressure Recommendations*

Camshaft	Seat Pressure	Open Pressure
Hydraulic & Solid Flat Tappet	100-130+ lbs.	270-350+ lbs.
Hydraulic Roller	105-135+ lbs.	280-350+ lbs.
Solid Roller (Street Pattern)	150-180+ lbs.	450-600+ lbs.
Solid Roller (Race Pattern)	190-300+ lbs.	600-1000+ lbs.

*General guideline only – consult with your camshaft manufacturer for exact valve spring recommendations, or contact RACING HEAD HELP™ or verify valve spring specification based on application. RHS® assumes no liability for engine damage due to improperly chosen valve springs.

What kind of camshaft should I run with my new cylinder heads?

Figure 2 lists a “ballpark” range of camshaft durations to consider based on the intake runner volume of various RHS® cylinder heads. Unless you run a high valve lift (above .550") camshaft with 220 or 235cc heads, you may not realize any performance advantage over cylinder heads with smaller intake runners. We do not make recommendations based on advertised duration because of the various rating methods used by cam manufacturers, which makes for poor camshaft comparison. Remember – this is a general guideline. Your intended application or the advice of your engine builder should always take precedent when it comes to cam selection on an individual basis.

FIGURE 2.

Camshaft Guidelines Based On Intake Runner Volume*

Cubic Inches	Intake Runner Volume	.050" Camshaft Duration
SMALL BLOCK – SMALL BORE/SHORT STROKE		
UP TO 350	170-180cc	210-225°
302-350	200-210cc	215-235°
347-400+	215-220cc	230-245°
383-421+	235cc	240°+
SMALL BLOCK – LARGE BORE/LONG STROKE		
UP TO 350	180cc	210-225°
302-350	200-210cc	225-235°
347-400+	215-220cc	230-245°
383-421+	235cc	240°+
BIG BLOCK CHEVROLET		
468-500+	320cc	250°+
500-565+	360cc	275°+

*General recommendation only – not meant to replace other methods of camshaft selection. Camshaft/head recommendation “up to 350c.i.” should also be taken to include 351W and other Small Block Ford engines.

FREQUENTLY ASKED QUESTIONS cont.

Any idea on what type of aftermarket headers I can run with RHS® cylinder heads?

In most cases, aftermarket headers are more than acceptable – they are encouraged. They will typically improve the performance potential of any cylinder head (or engine, for that matter). However, RHS® cylinder heads feature spark plug locations that are optimized for better atomization to ensure maximum performance. Therefore, it is important to check for fitment issues prior to ordering aftermarket headers – especially in unique, less common engine applications. In some applications a "shorty" style plug can be used for additional clearance; these plugs allow additional clearance between the spark plug boot and headers.

Can you tell me if I have enough piston-to-valve clearance based on my engine data? And where do rocker arm ratios figure into all of this?

Piston-to-valve clearance varies between individual engines. Not checking it could lead to your camshaft having more lift than clearance, which can bend your valves, or worse, punch holes in your pistons – necessitating engine teardown or even a ground-up engine replacement. Write down your clearance once you've measured it, so if you decide to swap cams, some easy math can tell you if you have enough clearance. Measurement needs to be taken again if engine modification occurs, such as swapping blocks or cylinder heads, machining deck surfaces or changing head gaskets. Refer to your existing measurement to verify fit if you swap to a higher lift camshaft or change to a higher rocker arm ratio.

The following equations help explain the effect rocker arm ratio has on valve lift. As an example, we look at a common rocker swap: Small Block Chevy – switching from the factory 1.5-1.52 ratio to a 1.6 ratio. Assuming a .500" lift camshaft (based on 1.5 ratio), we first need to calculate lobe lift. The equation is as follows:

Valve Lift/Rocker Ratio = Lobe Lift

Plugging in the numbers gives us: $.500"/1.5 = .333"$ lobe lift. Rearranging the equation gives us our gross valve lift with the new rocker ratio:

Lobe Lift x New Rocker Ratio = Valve Lift

Inserting the cam and rocker specs gives us $.333 \times 1.6 = .533"$ – a substantial difference in lift. Many people say, "Switching to a 1.6 from a 1.5 gives .030" more lift!" This is true in some cases, but this number is a ratio – not a constant. Do not assume lift increase will be any set number. Do the math, record the numbers and verify that you have clearance. You'll never have to worry about putting a valve through your brand new forged racing pistons!

* If running a split pattern cam with different intake and exhaust lobe lifts, do the equation twice (once for each lobe) to accurately calculate your gross valve lift.

Basic Engine Formulas

The following equations explain the basic engine measurements needed for more effective cylinder head selection and compatibility. Here, π is used as a mathematical constant that represents the ratio of the bore's circumference to its diameter.

$$\pi = 3.1415927 \quad \frac{\pi}{4} = 0.7853982$$

$$\text{Compression Ratio} = \frac{\text{Cylinder + Chamber Volume}}{\text{Chamber Volume}}$$

$$\text{Chamber Volume} = \left(\frac{\pi}{4} \right) \times \text{Bore}^2 \times \text{Stroke}$$

$$\text{Displacement} = \left(\frac{\pi}{4} \right) \times \text{Bore}^2 \times \text{Stroke} \times \text{No. of Cylinders}$$

$$\text{Stroke} = \frac{\text{Displacement}}{\left(\frac{\pi}{4} \right) \times \text{Bore}^2 \times \text{No. of Cylinders}}$$

$$\text{Bore} = \sqrt{\left(\frac{\text{Displacement}}{\left(\frac{\pi}{4} \right) \times \text{Stroke} \times \text{No. of Cylinders}} \right)}$$

$$\text{Chamber Volume} = \frac{\text{Cylinder Volume}}{\text{Compression Ratio} - 1.0}$$

$$\text{Amt. To Mill} = \left(\frac{\text{New Disp. Ratio} - \text{Old Disp. Ratio}}{\text{New Disp. Ratio} \times \text{Old Disp. Ratio}} \right) \times \text{Stroke}$$

.006" off per cc, Angle Mill .0078" off per cc

$$\text{Displacement Ratio} = \frac{\text{Cylinder Volume}}{\text{Chamber Volume}}$$

$$\text{Piston Speed in FPM} = \frac{2 \times \text{Stroke in Inches} \times \text{RPM}}{12}$$

$$\text{RPM} = \frac{\text{Piston Speed in FPM} \times 6}{\text{Stroke in Inches}}$$

SEAT & VALVE GUIDE MATRIX

When repairing or freshening cylinder heads, a common question many people have is which guide or seat is needed. RHS® has provided you with replacement part numbers in the two charts below based on your cylinder heads' series, your application and your RHS® cylinder head part number.

Cylinder Head Series	Intake Valve		Exhaust Valve	
	Diameter	NEWEN Insert	Diameter	NEWEN Insert
Pro Action™ Small Block Chevy & Small Block Ford	1.940"	NWN B1-591Y	1.600"	NWN B1-680Y
	2.020"	NWN B3-990Y	1.600"	NWN B1-680Y
	2.080"	NWN B3-990Y	1.600"	NWN B1-680Y
Pro Action™ Big Block Chevy	2.250"	NWN B1-918Y	1.880"	NWN B1-919Y
	2.300"	NWN B1-918Y	1.880"	NWN B1-919Y

Cylinder Head Series	Cylinder Head Part #	Exhaust Seat Insert	Intake Seat Insert	Replacement Valve Guide Part #	
				Intake	Exhaust
Pro Action™ Small Block Chevy	12041-12062	31279	31454HB	80007	80007
Pro Action™ Small Block Ford	35010, 35017	31279	102BT027	80007	80007
Pro Action™ Small Block Ford	35011, 35012, 35013, 35015, 35016, 35017	31279	31454HB	80007	80007
Pro Action™ Big Block Chevy	11011-11012	102BT027	102BT028	80007	80008



CYLINDER HEAD SPECIFICATIONS & RELATED PARTS REFERENCE GUIDE

In this section, RHS® provides you with a comprehensive guide to finding the ideal parts for your cylinder head assembly. And for bare heads, we provide crucial information to help you match the proper cylinder heads with your performance engine.



BARE CYLINDER HEADS - APPLICATION GUIDE

Part #	Series	Material	Valve Angle	In. Runner	Ex. Runner	Combustion Chamber	Spark Plug	In. Valve	Ex. Valve	Valve Length	Application
SMALL BLOCK CHEVY											
12052	Pro Action™	Alum.	23°	180cc	74cc	64cc	Straight	2.020"	1.600"	.100" Long	262-350c.i.
12053	Pro Action™	Alum.	23°	180cc	74cc	64cc	Angle	2.020"	1.600"	.100" Long	262-350c.i.
12041	Pro Action™	Alum.	23°	180cc	74cc	72cc	Straight	2.020"	1.600"	.100" Long	262-350c.i.
12042	Pro Action™	Alum.	23°	180cc	74cc	72cc	Angle	2.020"	1.600"	.100" Long	262-350c.i.
12054	Pro Action™	Alum.	23°	200cc	74cc	64cc	Straight	2.020"	1.600"	.100" Long	327-350c.i.
12055	Pro Action™	Alum.	23°	200cc	74cc	64cc	Angle	2.020"	1.600"	.100" Long	327-350c.i.
12043	Pro Action™	Alum.	23°	200cc	74cc	72cc	Straight	2.020"	1.600"	.100" Long	327-350c.i.
12044	Pro Action™	Alum.	23°	200cc	74cc	72cc	Angle	2.020"	1.600"	.100" Long	327-350c.i.
12056	Pro Action™	Alum.	23°	220cc	74cc	64cc	Straight	2.020"	1.600"	.100" Long	383-421c.i.
12059	Pro Action™	Alum.	23°	220cc	74cc	64cc	Angle	2.020"	1.600"	.100" Long	383-421c.i.
12045	Pro Action™	Alum.	23°	220cc	74cc	72cc	Straight	2.020"	1.600"	.100" Long	383-421c.i.
12046	Pro Action™	Alum.	23°	220cc	74cc	72cc	Angle	2.020"	1.600"	.100" Long	383-421c.i.
12080	Pro Elite™	Alum.	23°	228cc	82cc	69cc	Angle	2.055"	1.600"	.100" Long	383-421c.i.
12060	Pro Action™	Alum.	23°	235cc	74cc	64cc	Straight	2.080"	1.600"	.100" Long	383-421c.i.
12062	Pro Action™	Alum.	23°	235cc	74cc	64cc	Angle	2.080"	1.600"	.100" Long	383-421c.i.
12047	Pro Action™	Alum.	23°	235cc	74cc	72cc	Straight	2.080"	1.600"	.100" Long	383-421c.i.
12048	Pro Action™	Alum.	23°	235cc	74cc	72cc	Angle	2.080"	1.600"	.100" Long	383-421c.i.
BIG BLOCK CHEVY											
11011	Pro Action™	Alum.	24°	320cc	135cc	119cc	Angle	2.250"	1.880"	.250" Long In.; .100" Long Ex.	396-632c.i.
11012	Pro Action™	Alum.	24°	320cc	135cc	119cc	Angle	2.300"	1.880"	.250" Long In.; .100" Long Ex.	396-632c.i.
11034	Pro Elite™	Alum.	24°	339cc	135cc	121cc	Angle	2.250"	1.880"	.250" Long In.; .100" Long Ex.	468-540c.i.
11038	Pro Elite™	Alum.	24°	376cc	135cc	121cc	Angle	2.300"	1.880"	.350" Long In.; .100" Long Ex.	540-632c.i.
GM LS											
54300	Pro Action™	Alum.	-	-	-	-	Angle	-	-	-	LS1
54301	Pro Action™	Alum.	-	205cc	85cc	62cc	Angle	2.020"	1.600"	4.900" In.; 4.940" Ex.	LS1
54302	Pro Action™	Alum.	-	225cc	85cc	62cc	Angle	2.020"	1.600"	4.900" Int; 4.940" Ex.	LS1
54320	Pro Action™	Alum.	-	232cc	92cc	68cc	Angle	2.020"	1.600"	4.900" Int; 4.940" Ex.	LS1
54321	Pro Action™	Alum.	-	250cc	92cc	68cc	Angle	2.020"	1.600"	4.900" Int; 4.940" Ex.	LS1
54500	Pro Action™	Alum.	-	-	-	-	Angle	-	-	-	LS3/LS7
54509	Pro Action™	Alum.	-	-	-	-	Angle	-	-	-	LS3/LS7
54501	Pro Action™	Alum.	-	291cc	93cc	69cc	Angle	2.020"	1.615"	5.480" Int; 5.510" Ex.	LS3/LS7
54510	Pro Action™	Alum.	-	291cc	93cc	69cc	Angle	2.020"	1.615"	5.480" Int; 5.510" Ex.	LS3/LS7
SMALL BLOCK FORD											
35010	Pro Action™	Alum.	20°	160cc	66cc	58cc	Angle	1.940"	1.600"	.100" Long	289-351c.i.
35014	Pro Action™	Alum.	20°	160cc	66cc	64cc	Angle	1.940"	1.600"	.100" Long	289-351c.i.
35011	Pro Action™	Alum.	20°	180cc	66cc	58cc	Angle	2.020"	1.600"	.100" Long	289-351c.i.
35015	Pro Action™	Alum.	20°	180cc	66cc	64cc	Angle	2.020"	1.600"	.100" Long	289-351c.i.
35012	Pro Action™	Alum.	20°	200cc	66cc	58cc	Angle	2.020"	1.600"	.100" Long	302-421c.i.
35016	Pro Action™	Alum.	20°	200cc	66cc	64cc	Angle	2.020"	1.600"	.100" Long	302-421c.i.
35013	Pro Action™	Alum.	20°	215cc	66cc	58cc	Angle	2.080"	1.600"	.100" Long	347-421c.i.
35017	Pro Action™	Alum.	20°	215cc	66cc	64cc	Angle	2.080"	1.600"	.100" Long	347-421c.i.
35020	Pro Elite™	Alum.	20°	205cc	79cc	62cc	Angle	2.055"	1.600"	.100" Long	289-351c.i.
35025	Pro Elite™	Alum.	20°	221cc	79cc	62cc	Angle	2.080"	1.625"	.100" Long	289-351c.i.

ASSEMBLED CYLINDER HEADS - APPLICATION GUIDE

Part #	Series	Config.	Material	Intake Runners	Chambers	Spark Plugs	Valve Train	Max Lift	Assembly Kit Part #	In. Valve Part #	In. Valve Size	Ex. Valve Part #	Ex. Valve Size
SMALL BLOCK CHEVY													
12052-01	Pro Action™	23°	Alum.	180cc	64cc	Straight	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12052-02	Pro Action™	23°	Alum.	180cc	64cc	Straight	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12053-01	Pro Action™	23°	Alum.	180cc	64cc	Angle	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12053-02	Pro Action™	23°	Alum.	180cc	64cc	Angle	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12041-01	Pro Action™	23°	Alum.	180cc	72cc	Straight	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12041-02	Pro Action™	23°	Alum.	180cc	72cc	Straight	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12042-01	Pro Action™	23°	Alum.	180cc	72cc	Angle	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12042-02	Pro Action™	23°	Alum.	180cc	72cc	Angle	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12054-01	Pro Action™	23°	Alum.	200cc	64cc	Straight	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12054-02	Pro Action™	23°	Alum.	200cc	64cc	Straight	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12055-01	Pro Action™	23°	Alum.	200cc	64cc	Angle	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12055-02	Pro Action™	23°	Alum.	200cc	64cc	Angle	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12043-01	Pro Action™	23°	Alum.	200cc	72cc	Straight	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12043-02	Pro Action™	23°	Alum.	200cc	72cc	Straight	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12044-01	Pro Action™	23°	Alum.	200cc	72cc	Angle	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12044-02	Pro Action™	23°	Alum.	200cc	72cc	Angle	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12056-01	Pro Action™	23°	Alum.	220cc	64cc	Straight	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12056-02	Pro Action™	23°	Alum.	220cc	64cc	Straight	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12059-01	Pro Action™	23°	Alum.	220cc	64cc	Angle	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12059-02	Pro Action™	23°	Alum.	220cc	64cc	Angle	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12045-01	Pro Action™	23°	Alum.	220cc	72cc	Straight	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12045-02	Pro Action™	23°	Alum.	220cc	72cc	Straight	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12046-01	Pro Action™	23°	Alum.	220cc	72cc	Angle	Flat Tappet	.560"	12972-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12046-02	Pro Action™	23°	Alum.	220cc	72cc	Angle	Hyd. Roller	.600"	12987-01	6001	2.020" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12060-01	Pro Action™	23°	Alum.	235cc	64cc	Straight	Flat Tappet	.560"	12972-02	6003	2.080" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12060-02	Pro Action™	23°	Alum.	235cc	64cc	Straight	Hyd. Roller	.600"	12987-02	6003	2.080" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12062-01	Pro Action™	23°	Alum.	235cc	64cc	Angle	Flat Tappet	.560"	12972-02	6003	2.080" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12062-02	Pro Action™	23°	Alum.	235cc	64cc	Angle	Hyd. Roller	.600"	12987-02	6003	2.080" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12047-01	Pro Action™	23°	Alum.	235cc	72cc	Straight	Flat Tappet	.560"	12972-02	6003	2.080" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12047-02	Pro Action™	23°	Alum.	235cc	72cc	Straight	Hyd. Roller	.600"	12987-02	6003	2.080" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12048-01	Pro Action™	23°	Alum.	235cc	72cc	Angle	Flat Tappet	.560"	12972-02	6003	2.080" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
12048-02	Pro Action™	23°	Alum.	235cc	72cc	Angle	Hyd. Roller	.600"	12987-02	6003	2.080" x 11/32" + .100" Long	6002	1.600" x 11/32" + .100" Long
BIG BLOCK CHEVY													
11011-02	Pro Action™	24°	Alum.	320cc	119cc	Angle	Hyd. Roller	.600"	11924-01	6022	2.250" x 11/32" + .250" Long	6023	1.880" x 11/32" + .100" Long
11011-03	Pro Action™	24°	Alum.	320cc	119cc	Angle	Mech. Roller	.750"	11991-01	6022	2.250" x 11/32" + .250" Long	6023	1.880" x 11/32" + .100" Long
11012-02	Pro Action™	24°	Alum.	360cc	119cc	Angle	Hyd. Roller	.600"	11924-02	6021	2.300" x 11/32" + .250" Long	6023	1.880" x 11/32" + .100" Long
11012-03	Pro Action™	24°	Alum.	360cc	119cc	Angle	Mech. Roller	.750"	11991-02	6021	2.300" x 11/32" + .250" Long	6023	1.880" x 11/32" + .100" Long

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Part #	Series	Config.	Material	Intake Runners	Chambers	Spark Plugs	Valve Train	Max Lift	Assembly Kit Part #	In. Valve Part #	In. Valve Size	Ex. Valve Part #	Ex. Valve Size
GM LS1													
54301-02CS	Pro Action™	15°	Alum.	205cc	62cc	Angle	Hyd. Roller	.600"	-	6056	2.020" x 8mm	6059	1.600" x 8mm
54302-02CS	Pro Action™	15°	Alum.	225cc	62cc	Angle	Hyd. Roller	.600"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54302-02TI	Pro Action™	15°	Alum.	225cc	62cc	Angle	Hyd. Roller	.600"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54302-02TS	Pro Action™	15°	Alum.	225cc	62cc	Angle	Hyd. Roller	.600"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54302-05TI	Pro Action™	15°	Alum.	225cc	62cc	Angle	Hyd. Roller	.660"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54302-05TS	Pro Action™	15°	Alum.	225cc	62cc	Angle	Hyd. Roller	.660"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54302-06TI	Pro Action™	15°	Alum.	225cc	62cc	Angle	Hyd. Roller	.675"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54302-06TS	Pro Action™	15°	Alum.	225cc	62cc	Angle	Hyd. Roller	.675"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54320-02TI	Pro Action™	15°	Alum.	232cc	68cc	Angle	Hyd. Roller	.600"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54320-02TS	Pro Action™	15°	Alum.	232cc	68cc	Angle	Hyd. Roller	.600"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54320-05TI	Pro Action™	15°	Alum.	232cc	68cc	Angle	Hyd. Roller	.660"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54320-05TS	Pro Action™	15°	Alum.	232cc	68cc	Angle	Hyd. Roller	.660"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54320-06TI	Pro Action™	15°	Alum.	232cc	68cc	Angle	Hyd. Roller	.675"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54320-06TS	Pro Action™	15°	Alum.	232cc	68cc	Angle	Hyd. Roller	.675"	-	6057	2.055" x 8mm	6059	1.600" x 8mm
54321-02TI	Pro Action™	15°	Alum.	250cc	68cc	Angle	Hyd. Roller	.600"	-	6061	2.100" x 8mm	6059	1.600" x 8mm
54321-02TS	Pro Action™	15°	Alum.	250cc	68cc	Angle	Hyd. Roller	.600"	-	6061	2.100" x 8mm	6059	1.600" x 8mm
54321-05TI	Pro Action™	15°	Alum.	250cc	68cc	Angle	Hyd. Roller	.660"	-	6061	2.100" x 8mm	6059	1.600" x 8mm
54321-05TS	Pro Action™	15°	Alum.	250cc	68cc	Angle	Hyd. Roller	.660"	-	6061	2.100" x 8mm	6059	1.600" x 8mm
54321-06TI	Pro Action™	15°	Alum.	250cc	68cc	Angle	Hyd. Roller	.675"	-	6061	2.100" x 8mm	6059	1.600" x 8mm
54321-06TS	Pro Action™	15°	Alum.	250cc	68cc	Angle	Hyd. Roller	.675"	-	6061	2.100" x 8mm	6059	1.600" x 8mm
GM LS7													
51501-05HCS	Pro Elite™	12°	Alum.	291cc	69cc	Angle	Hyd. Roller	.660"	-	6062	2.200" x 8mm	6063	1.615" x 8mm
54501-06STS	Pro Elite™	12°	Alum.	291cc	69cc	Angle	Hyd. Roller	.675"	-	6062	2.200" x 8mm	6063	1.615" x 8mm
54501-06STI	Pro Elite™	12°	Alum.	291cc	69cc	Angle	Hyd. Roller	.675"	-	6062	2.200" x 8mm	6063	1.615" x 8mm
54501-06TTSX	Pro Elite™	12°	Alum.	291cc	69cc	Angle	Hyd. Roller	.675"	-	6064	2.200" x 8mm	6067	1.615" x 8mm
54501-06TTIX	Pro Elite™	12°	Alum.	291cc	69cc	Angle	Hyd. Roller	.675"	-	6064	2.200" x 8mm	6067	1.615" x 8mm
54501-06TTS	Pro Elite™	12°	Alum.	291cc	69cc	Angle	Hyd. Roller	.675"	-	6064	2.200" x 8mm	6066	1.615" x 8mm
54501-06TTI	Pro Elite™	12°	Alum.	291cc	69cc	Angle	Hyd. Roller	.675"	-	6064	2.200" x 8mm	6066	1.615" x 8mm
SMALL BLOCK FORD													
35010-01	Pro Action™	20°	Alum.	160cc	58cc	Angle	Flat Tappet	.560"	35972-01	6014	1.940" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35010-02	Pro Action™	20°	Alum.	160cc	58cc	Angle	Hyd. Roller	.600"	35987-01	6014	1.940" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35014-01	Pro Action™	20°	Alum.	160cc	64cc	Angle	Flat Tappet	.560"	35972-01	6014	1.940" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35014-02	Pro Action™	20°	Alum.	160cc	64cc	Angle	Hyd. Roller	.600"	35987-01	6014	1.940" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35011-01	Pro Action™	20°	Alum.	180cc	58cc	Angle	Flat Tappet	.560"	35972-02	6001	2.020" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35011-02	Pro Action™	20°	Alum.	180cc	58cc	Angle	Hyd. Roller	.600"	35987-02	6001	2.020" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35015-01	Pro Action™	20°	Alum.	180cc	64cc	Angle	Flat Tappet	.560"	35972-02	6001	2.020" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35015-02	Pro Action™	20°	Alum.	180cc	64cc	Angle	Hyd. Roller	.600"	35987-02	6001	2.020" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35012-01	Pro Action™	20°	Alum.	200cc	58cc	Angle	Flat Tappet	.560"	35972-02	6001	2.020" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35012-02	Pro Action™	20°	Alum.	200cc	58cc	Angle	Hyd. Roller	.600"	35987-02	6001	2.020" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35016-01	Pro Action™	20°	Alum.	200cc	64cc	Angle	Flat Tappet	.560"	35972-02	6001	2.020" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35016-02	Pro Action™	20°	Alum.	200cc	64cc	Angle	Hyd. Roller	.600"	35987-02	6001	2.020" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35013-01	Pro Action™	20°	Alum.	215cc	58cc	Angle	Flat Tappet	.560"	35972-03	6003	2.080" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35013-02	Pro Action™	20°	Alum.	215cc	58cc	Angle	Hyd. Roller	.600"	35987-03	6003	2.080" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35017-01	Pro Action™	20°	Alum.	215cc	64cc	Angle	Flat Tappet	.560"	35972-03	6003	2.080" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long
35017-02	Pro Action™	20°	Alum.	215cc	64cc	Angle	Hyd. Roller	.600"	35987-03	6003	2.080" x 11/32" +.100" Long	6002	1.600" x 11/32" +.100" Long

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	Spring Part #	Retainer Part #	Lock Part #	Seal Part #	Guide Plate Part #	Spring Locator Part #	Spark Plug Specs	Spark Plug		Recommended Gaskets			Stud Girdle
								ZEX™	Champion	In.	Ex.	Valve Cover	
	26918	774	623	511	-	4705	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26918	774	623	511	-	4705	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26918	772	623	511	-	4705	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26918	1772	623	511	-	4705	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26925	717	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26925	1717	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	1779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26918	772	623	511	-	4705	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26918	1772	623	511	-	4705	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26925	717	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26925	1717	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	1779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26918	772	623	511	-	4705	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26918	1772	623	511	-	4705	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26925	717	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26925	1717	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	1779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26925	713	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	1779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	1779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	1779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	26926	779	623	511	-	4709	14mm, .750" Reach, Gasketed	82003	C57YC	-	-	-	-
	972	743	601	529	4808	4696	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	987	740	611	529	4808	4771	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	972	743	601	529	4808	4696	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	987	740	611	529	4808	4771	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	972	743	601	529	4808	4696	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	987	740	611	529	4808	4771	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	972	743	601	529	4808	4696	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	987	740	611	529	4808	4771	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	972	743	601	529	4808	4696	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	987	740	611	529	4808	4771	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	972	743	601	529	4808	4696	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	987	740	611	529	4808	4771	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	972	743	601	529	4808	4696	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015
	987	740	611	529	4808	4771	14mm, .750" Reach, Gasketed	82003	C57YC	1713	1714	1715	4015

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