



HARLEY DAVIDSON® CATALOG

- Twin Cam®
- Evolution®
- Sportster®
- Shovelhead®
- Panhead®
- Ironhead®
- V-Rod®



High Performance Valvetrain Components Manufacturer



WHY USE AV&V™



Today's market offers many choices of valves and valve guides for similar applications. What makes AV&V™ stand out?

What about valves?

Valve coatings: The two most popular valve coatings processes used in today's valve manufacturing are chrome coating and nitride coating. When looking at valves that have run for a period of time you may have remarked that a "black" valve will usually last longer. The reason is that on a chrome valve, it is not possible to apply more than few micron of chrome with a process known as flash chrome. This process entails the valve being quickly submerged in a chrome solution to let the chrome adhere to the stem. Some people call these valves "hard chrome valves", however it's important not to confuse these two processes. With a hard chrome treatment - like on a hydraulic cylinder - a thick layer of chrome is applied and the surface becomes very hard. Try to pass a file on the surface of a hydraulic shaft and then do the same with a chrome stem valve and the difference is evident. The reason manufacturers can't apply more chrome on the stem is that with the heat and expansion involved, it would cause a thick chrome layer to crack.



At **AV&V™** all of our valves are one piece forged from 21-4N stainless steel alloy and we offer them mostly in the Black version. We have chosen a liquid nitriding process, followed by a precise heat treat process that will produce a very hard surface for optimal wear characteristics on the stem by keeping a soft grain structure in the center of the stem to prevent valve breakage in the case of a valve to valve or valve to piston contact. We take extra care to centerless grind the stems to a micro finish surface before the final nitriding process to give the valves that very slippery surface resulting in exceptional wear characteristics. For the valve tip we have chosen to go with a friction weld bearing alloy; this hard tip can be reground in the future and is more suitable with rocker arm application.

Another improvement in the design of our 5/16 valves is the 45° angle just below the lock groove. This groove was created to help valve seal installation without having to use a plastic sleeve protector.

On the stem diameters, our tolerances are the tightness in the industry and we have made the exhaust models slightly smaller than the intakes so an engine builder can use the same reamer on both intake & exhaust guides (with AV&V manganese bronze guides only; cast iron guides require slightly more clearance).

There are two series of valves available from **AV&V™**; the replacement series and the High Flow series. Both feature the same material and surface characteristic.

Why use AV&V

On the **Extreme-duty replacement series**, the valves respect the OEM dimensions (except for the shovel head intake which is 1.955" instead of 1.940" to achieve a better 3 angle seat job) The head shape has been optimized & swirl polished to improve flow characteristic. **On the High Flow series**, we have spent countless hours of flow testing to improve the shape of the valve for better airflow. The smooth dish face on the intake valve helps for good combustion in the chamber. The exhaust valve features a thick margin for better flow and all chamfer or radius have been optimized. For optimum airflow, in Evo or Twin Cam engine you can try our 1.585" exhaust valve (AV1585) and see that with the seat and bowl well prepared, this valve can flow the same or outflow 1.625" valves on the market. This valve gives you more intake & exhaust space so by not having to machine the intake seat as deep you also can gain on the intake flow. For bigger engines, you can use our 1.610D with a bigger seat opening for bigger flow numbers.

Valve specifications



All our valves are one-piece forged from racing-grade stainless steel alloy. Each valve is nitride-processed and specially heat-treated for optimum performance.

1. Bearing-quality hardened tip.
2. Valve seal installation is a breeze with this 45° chamfer on the bottom edge of the locking groove.
3. Following several years of flow-bench testing, the valve head is designed for greater airflow.
4. A precision 45° face is ground after the nitriding process.

What about valve guides?

Typically, valve guides have been the neglected child in the valvetrain family, with no one stepping up to meet the needs of serious engine builders. To ensure a proper job, we were always required to "prepare" a valve guide to facilitate installation.



There are three ways of installing a guide in a head: with a driver and hammer; with a fixture and a press; or with a puller tool. With the first method, the guide must be polished to prevent aluminum scraping in the guide receiver hole. Then the driver is aligned as closely as possible with the centerline of the hole and hammered down until the guide is at its installed height. Sometimes you have to measure the protrusion and drive it in again to adjust it correctly.

With both puller and press methods, there was no point in freezing the guide to shrink it before installation because in the time required for installation, the hot head will have raised its temperature back up.

Take a look at the features and benefits of AV&V™ valve guides:

- CNC machined to exact specifications for each application.
- Smooth finish to prevent damaging the head receiver holes.
- A self-centering tapered section on each guide allows for fast, effortless and precise installation.
- Chamfered on both sides: no need for chamfering after reaming or honing - it's already done! The chamfer prevents the oil from being scraped off with every valve stroke, which causes premature stem wear.
- A super-grip finish for valve seals: **AV&V™** valve seal areas come in two different finishes, designed after extensive testing with a variety of valve seals. Our valve seals will stay on.
- **Note: We still recommend the use of a very small amount of Loctite as insurance for OEM-style (metal-clad) seals.**
- Shorter valve seal area for high lift applications on every valve guide (except EVO®/Twin Cam® stock replacement models). We also incorporate a small flange on every EVO®/Twin Cam® guide to stop the guide at the correct depth - another way to save time and make sure the job is done right.
- Viton O-rings: these rings are free insurance to prevent against oil infiltration between guide and head, which can happen when previous guide removal or installation work was done incorrectly.
- CNC engraved part number: Useful to identify part number, model and oversize.
- Unfinished guide I.D.: after the guide is installed, it is ready to be precision-reamed with **AV&V™**'s special reamers, or honed through the Sunnen method.

Valve guide materials: Myths and facts

AV&V™ manufactures valve guides from two different materials: manganese bronze and micrograin cast iron (for Ironhead Sportsters®).

The manganese bronze alloy valve guide was developed some thirty years ago, with the introduction of high-performance aluminum heads for car racing. Manufacturers sought a material that would dissipate the heat from the valves better than cast iron, and would also increase lubrication between valve stems and guides.

They first introduced a silicon-based bronze alloy, an unsatisfactory choice due to high wear. Next, they began using high nickel-bronze alloy (AMPCO 45 or C630) which provided greater longevity but required more clearance to prevent valve sticking. This alloy is still in use today, particularly for exhaust valve guides in high heat applications (including nitro-methane) as its high nickel content is suited for these specific applications alone.

After much research and material evolution, the market has developed a new series of copper alloys. These include manganese, now used by manufacturers of High Performance cylinder head for their valve guides. This alloy offers engine builders superior heat transfer and the ability to fit the guides at a tighter clearance, providing better oil film control and longer life.

This alloy should properly be called zinc-bronze rather than manganese-bronze as it contains nearly 30% zinc (the bearing ingredient) and only 2-3% manganese (the hard component).

Some small-engine aluminum connecting rods run directly on the crank, without any bearings, and survive under hard abuse and occasionally no maintenance; they contain zinc, which is a self-lubricating bearing alloy.

The advantages of manganese bronze guides

- This self-lubricating material allows a tighter valve-to-guide clearance - .0008" for the intake and .001" for the exhaust (for EVO® and Twin Cam® using **AV&V™** valves only). Other models may require more clearance on the exhaust.
- A tighter clearance results in the exhaust valve dissipating heat more rapidly and rocking less, which contributes to longer life.
- The valve stem will last longer, thanks to the slippery properties of manganese bronze.
- If a problem occurs and the valves bend, these guides will not crack and break apart like cast iron guides, which can destroy the engine.
- Customers report that engines with a tighter valve-to-guide clearance run more quietly.

Valve guide specifications



1. A shorter valve seal area provides added room for high lift application, except for EVO® and Twin Cam® stock replacement models.
2. Super-Grip finish provides a nonslip surface for all valves seal styles.
3. A special high-temperature Viton o-ring prevents oil infiltration between the guide and the head.
4. The self-centering area is tapered for easier installation.
5. The tapered nose design is specifically designed to produce better airflow than conventional guides.

Tips for valve guide removal and installation

At **J Precision's AV&V™ Performance and Testing Lab**, we have removed and installed hundreds of guides every year with no comeback and without damaging the heads, by proceeding as follows:

Removal

For **Pan®, Shovel®, Ironhead® and early, soft cast iron EVO® guides**, we use a piloted counterbore tool on the press drill. We install the head on a fixture and cut down the top portion of the guide flush with the spring seat surface.

Next, the heads are put into the oven at 140°C (300°F) for half an hour, after which we place them on two 2" x 4" wooden blocks and drive out the guides with a hammer & driver. The guide exits on the chamber side.

For **late EVO® and early Twin Cam® with 5/16 or hardened cast iron guides**, we first spray WD-40 penetrating oil on the guide tops and then use a hydraulic press to press the guides out through the combustion chamber.

For **late Twin Cam® with 7 mm guides**, we first spray WD-40 penetrating oil on the guide tops and then remove the circlip. Then we use the hydraulic press to press the guides out through the combustion chamber.

Why use AV&V

Installation

For installation, we use the shrink-fit method. Before the heads go into the oven, we chamfer the guide receiver holes with a hand deburring tool. We blow out the chips and visually inspect the holes. Next, the heads are put into the oven at 140°C (300°F) for half an hour.

We apply pressfit lubricant on the new guides and put them in dry ice (a freezer can also be used). After a few minutes, the first head comes out of the oven and is placed on two 2" x 4" wooden blocks. We then retrieve the first guide from the dry ice and install it as quickly as possible with a hammer and driver.

If you follow the correct process, the guide should enter the head half way before you need to hammer on the driver, and no superhuman hammering effort will be required. If this occurs, it is due to choosing an oversize that is too large.

Repeat the same process with the other guides.

Reaming advantages of using AV&V™ carbide reamers



There are two ways of fitting a valve guide: reaming and honing.

In the past, good engine builders had no choice but to hone the guides to fit them to the correct specifications. Reamers were available, but their piloted section was too short and small for proper alignment when reaming. In addition, high-speed steel reamers were not designed to ream special bronze alloy valve guides.

When using the Sunnen method, you must choose your mandrel and stones and use coolant. Remember to hone, measure, and re-hone until the correct fit is achieved. Take care not to hone your guides with a taper in the centre, and remember to wash the heads and your hands to complete this operation. The entire process usually takes 20-30 minutes.

With the **AV&V™** carbide reamers (photos on our website), it only takes 3-4 seconds to fit a guide to exact tolerances with no taper, and there is no need to wash anything before going on the seat machine.

AV&V™ valve stem diameters are designed to require the same **AV&V™** reamer to fit both the intake and exhaust valve:

- **AV&V™** VGRC3120 reamer will fit all of our EVO®/Twin Cam® valves
- VGRC3782 fits all of our Pan®/Shovel® valves
- VGRC2766 fits all **AV&V™** and other Harley 7MM valve brands

As no crosshatch is left in the valve guide I.D., the tight clearance achieved will lead to longer valve and guide life.

The seat job may now be started. As these reamers are made from solid carbide, they will last much longer than any high-speed reamer.

Tired of losing your time honing and fitting valve guides?

Here is why AV&V reamers are now used by the top cylinder head shops in the industry



The same three reamers have been in use in our tech lab for years. We still appreciate them with every use, even after reaming thousands of guides. The world's top cylinder head companies and shops now use **AV&V™** valves, valve guides and reamer system to improve production time and the quality of their work.

We take great pride in the fact that over the last decade, the most respected cylinder head specialists in the industry have switched to **AV&V™** products in order to deliver final products at the highest possible standard. This select customer group includes T-Man Performance, S&S, ULTIMA, Revolution Performance, Branch & O'Keefe, and many other dedicated cylinder head shops.

We hope you enjoyed this article. For more information, visit us at **www.av-v.com**.



TWIN CAM®

- High Flow Valves
- Valves Guides
- Valves Seals
- Compression Release Valves
- Valves Spring kits
- Valves Spring Shims



AV&V Black & Chrome Tulip Extreme Duty Valves (5/16 stem)

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent premature wear with high-lift cams.

AV&V's 5/16 stem valves also features a 45° angle below the lock groove to facilitate valve seal installation.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



High Flow Valves

AVI585

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.585"	4.505"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- .020" oversize (TC)
- 5/16" stem



High Flow Valves

AVI610D

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.610"	4.510"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Dished valve
- 5/16" stem



High Flow Valves

AVI610S

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.610"	4.565"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- For use with S&S heads
- 5/16" stem



High Flow Valves

AVI650

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.650"	4.515"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Oversize valve for Jims 120" and S/E 110" Heads
- 5/16" stem



High Flow Valves		AVI700C			
Exhaust					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.700"	4.445"	.3106"	Chrome	.200"	Single
Note					
<ul style="list-style-type: none">• 25° back angle tulip• For Merch Heads• 5/16" stem					



High Flow Valves		AVI700A			
Exhaust					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.700"	4.510"	.3106"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none">• 25° back angle tulip• .235" Tip can be grinded to shorten valve• 5/16" stem					



High Flow Valves		AVI700U			
Exhaust					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.700"	4.655"	.3106"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none">• 25° back angle tulip• For Ultima Heads• 5/16" stem					



High Flow Valves		AVI900			
Intake					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.900"	4.440"	.3108"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none">• 25° back angle tulip• .055" oversize valve• For use in stock heads• 5/16" stem					

AV&V Black & Chrome Tulip Extreme Duty Valves (5/16 stem)

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent premature wear with high-lift cams.

AV&V's 5/16 stem valves also features a 45° angle below the lock groove to facilitate valve seal installation.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



High Flow Valves

AV900S

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.900"	4.415"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- .025" shorter and .055" oversize valve
- For use in stock heads
- 5/16" stem



High Flow Valves

AVI940

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.940"	4.440"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Oversize valve larger
- If used in stock heads larger seats must be installed
- 5/16" stem



High Flow Valves

AVI990

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.990"	4.440"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Oversize valve
- If used in stock heads larger seats must be installed
- 5/16" stem



High Flow Valves

AV2020A

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.020"	4.440"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Also good for Merch Heads
- Larger seats could be required
- 5/16" stem



High Flow Valves

AV2020

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.020"	4.490"	.3108"	Chrome	.200"	Single

Note

- 25° back angle tulip
- .050" longer than AV2020A
- Larger seats could be required
- 5/16" stem



High Flow Valves

AV2020S

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.020"	4.510"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- For use with S&S Heads
- 5/16" stem



High Flow Valves

AV2060LC

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.060"	4.510"	.3108"	Chrome	.200"	Single

Note

- 24° back angle tulip
- Used with S&S Heads
- Oversize valve
- 5/16" stem



High Flow Valves

AV2100

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.100"	4.475"	.3108"	Black nitride	.200"	Single

Note

- 24° back angle tulip
- For Jims 120" and S/E 110" Heads
- Oversize valve
- 5/16" stem

AV&V Black & Chrome Tulip Extreme Duty Valves (5/16 stem)

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent premature wear with high-lift cams.

AV&V's 5/16 stem valves also features a 45° angle below the lock groove to facilitate valve seal installation.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



High Flow Valves

AV2100BC (no tip, no groove)

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.100"	5.700"	.3108"	Chrome	---	---

Note

- 24° back angle tulip
- 5/16" stem heads
- Blank valve (no tip, no groove)
- Bi-metal (can be hardened)



High Flow Valves

AV2100S

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.100"	4.570"	.3108"	Chrome	.200"	Single

Note

- 24° back angle tulip
- S&S 124" and 131"
- Oversize valve
- 5/16" stem



High Flow Valves

AV2100U

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.100"	4.590"	.3108"	Black nitride	.200"	Single

Note

- 23° back angle tulip
- For Ultima Heads
- 5/16" stem



High Flow Valves

AV2150

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.150"	4.480"	.3108"	Chrome	.200"	Single

Note

- 24° back angle tulip
- Oversize valve for Jims 120" and 131" heads
- 5/16" stem



High Flow Valves

AVI700BC (no tip, no groove)

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.700"	5.700"	.3106"	Chrome	---	---

Note

- 25° back angle tulip
- 5/16" stem blank valve
- Bi-metal (can be hardened)



High Flow Valves

AV2200BC (no tip, no groove)

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.200"	5.700"	.3108"	Chrome	---	---

Note

- 25° back angle tulip
- 5/16" stem blank valve
- Bi-metal (can be hardened)

AV&V Black & Chrome Tulip Extreme Duty Valves (7MM stem)

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent premature wear with high-lift cams.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



High Flow Valves

AV610-7TGB

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.610"	4.545"	.2755"	Black nitride	.085"	Triple

Note

- 25° back angle tulip
- .040" oversize valve
- For use in stock heads
- 7MM stem



High Flow Valves

AV610-7TGC

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.610"	4.545"	.2755"	Chrome	.085"	Triple

Note

- 25° back angle tulip
- .040" oversize valve
- For use in stock heads
- 7MM stem



High Flow Valves

AV850-7TGB

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.850"	4.455"	.2757"	Black nitride	.085"	Triple

Note

- 24° back angle tulip
- .040" oversize valve
- For use in stock heads
- 7MM stem



High Flow Valves

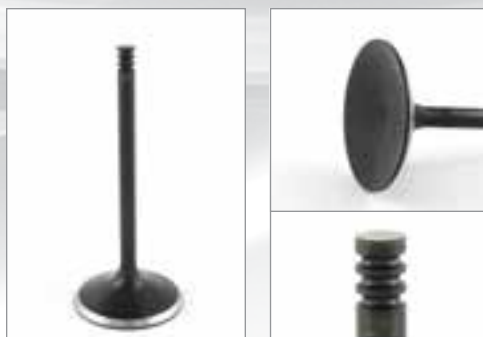
AV850-7TGC

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.850"	4.455"	.2757"	Chrome	.085"	Triple

Note

- 24° back angle tulip
- .040" oversize valve
- For use in stock heads
- 7MM stem



High Flow Valves		AVI900-7TGB			
Intake					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.900"	4.445"	.2757"	Black nitride	.085"	Triple
Note					
<ul style="list-style-type: none">• 24° back angle tulip• .090" oversize valve• For use in stock heads• 7MM stem					



High Flow Valves		AV1900-7TGC			
Intake					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.900"	4.445"	.2757"	Chrome	.085"	Triple
Note					
<ul style="list-style-type: none">• 24° back angle tulip• .090" oversize valve• For use in stock heads• 7MM stem					



High Flow Valves		AV1980-7TGB			
Intake					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.980"	4.455"	.2757"	Black nitride	.085"	Triple
Note					
<ul style="list-style-type: none">• 25° back angle tulip• .170" oversize valve• If used in stock heads larger seats must be installed• 7MM stem					

AV&V Extreme Duty Replacement Valves 5/16

These superb valves are one piece forged from a racing grade stainless steel alloy.

Our liquid nitriding process creates a valve that is smoother and stronger than traditional O.E.M. or replacement valves.

The stems are centerless grinded to a micro finish for longer life.

AV&V™ Extreme Duty valves also feature a 45° angle below the lock groove to facilitate valve seal installation.



HD11					
Intake					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.845"	4.440"	.3108"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none"> • 25° back angle tulip • Also good for stock replacement • 5/16" stem Twin Cam® 					



HD12					
Exhaust					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.570"	4.525"	.3106"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none"> • 25° back angle tulip • Twin cam® stock replacement • 5/16" stem 					

AV&V Extreme Duty Replacement Valves 7MM

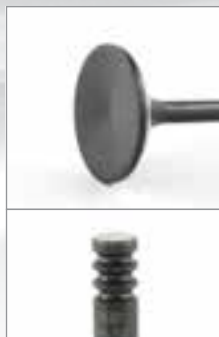


TWIN CAM

These superb valves are one piece forged from a racing grade stainless steel alloy.

The stems are centerless grinded to a micro finish for longer life.

Our liquid nitriding process creates a valve that is smoother and stronger than traditional O.E.M. or replacement valves.



AVI575-7TGB

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.575"	4.560"	.2755"	Black nitride	.085"	Triple

Note

- 25° back angle tulip
- Twin cam® stock replacement
- 7MM stem



AVI575-7TGC

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.575"	4.560"	.2755"	Chrome	.085"	Triple

Note

- 25° back angle tulip
- Twin cam® stock replacement
- 7MM stem



AVI810-7TGB

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.810"	4.455"	.2757"	Black nitride	.085"	Triple

Note

- 25° back angle tulip
- Twin cam® stock replacement
- 7MM stem



AVI810-7TGC

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.810"	4.455"	.2757"	Chrome	.085"	Triple

Note

- 25° back angle tulip
- Twin cam® stock replacement
- 7MM stem

AV&V Extreme Duty Manganese Bronze Valve Guides (5/16 valves)

- AV&V's Manganese bronze valve guides are CNC machined. Our alloy allows you to fit both intake and exhaust valves at tighter clearances for better heat dissipation, quieter running and longer engine life.
- Special Hi-temp. Viton O'rings are used to prevent oil infiltration between guide & head.
- Tapered & radiused nose for easier installation and better air flow.
- Unique Super Grip valve seal section : use either OEM style or viton seals.
- Unfinished I.D. ready to be easily finished with AV&V's Carbide reamers. (see *reamers section*)



O.D.	I.D.	Overize	Overall Length	Intake	Exhaust
High Lift & High Flow application					
.5625"	.308"	Std	2.100"	VG5600	VG5700
.5635"	.308"	.001"	2.100"	VG5601	VG5701
.5645"	.308"	.002"	2.100"	VG5602	VG5702
.5655"	.308"	.003"	2.100"	VG5603	VG5703
.5665"	.308"	.004"	2.100"	VG5604	VG5704
.5675"	.308"	.005"	2.100"	VG5605	VG5705
.5685"	.308"	.006"	2.100"	VG5606	VG5706
.5725"	.308"	.010"	2.100"	VG5610	VG5710
.5875"	.308"	.025"	2.100"	VG5625	VG5725

- Use with .531" Viton valve seals (V312531).
- Shorter seal area for high lift application.
- Profiled for optimum airflow.



O.D.	I.D.	Overize	Overall Length	Intake	Exhaust
High Lift & High Flow application					
.5625"	.308"	Std	2.100"	VG5600S	VG5700S
.5630"	.308"	.0005"	2.100"	VG5600-5S	VG5700-5S
.5635"	.308"	.001"	2.100"	VG5601S	VG5701S

- Same guides as above except for seal diameter.
- Use with .421" Viton valve seals (V312421), or O.E. style valve seals (K312420)



O.D.	I.D.	Overize	Overall Length	Intake & Exhaust
Stock replacement				
.5625"	.308"	Std	2.250"	VG5500
.5635"	.308"	.001"	2.250"	VG5501
.5645"	.308"	.002"	2.250"	VG5502
.5655"	.308"	.003"	2.250"	VG5503
.5665"	.308"	.004"	2.250"	VG5504
.5875"	.308"	.025"	2.250"	VG5525

- Use with .531" O.E. style valve seals (K312530).
- Stock length
- Stock replacement

AV&V Extreme Duty Manganese Bronze Valve Guides (7MM valves)



TWIN CAM

- AV&V's Manganese bronze valve guides are CNC machined. Our alloy allows you to fit both intake and exhaust valves at tighter clearances for better heat dissipation, quieter running and longer engine life.
- Special Hi-temp. Viton O'rings are used to prevent oil infiltration between guide & head.
- Tapered & radiused nose for easier installation and better air flow.
- Unique Super Grip valve seal section : use either OEM style or viton seals.
- Unfinished I.D. ready to be easily finished with AV&V's Carbide reamers. (see reamers section)



O.D.	I.D.	Oversize	Overall Length	Intake	Exhaust
High Lift & High Flow application					
.5625"	.273"	Std	2.040"	VG6600	VG6700
.5635"	.273"	.001"	2.040"	VG6601	VG6701
.5645"	.273"	.002"	2.040"	VG6602	VG6702
.5655"	.273"	.003"	2.040"	VG6603	VG6703
.5665"	.273"	.004"	2.040"	VG6604	VG6704
.5675"	.273"	.005"	2.040"	VG6605	VG6705
.5685"	.273"	.006"	2.040"	VG6606	VG6706
.5725"	.273"	.010"	2.040"	VG6610	VG6710
.5875"	.273"	.025"	2.040"	VG6625	VG6725

- Use with O.E. style Viton valve seals (V7MMOE).
- Profiled for optimum airflow.

AV&V Universal Valve Guides



O.D.	I.D.	Overall Length	Intake & Exhaust
Universal Repair Guides			
.740"	.273"	2.700"	UVG7MM
.740"	.308"	2.700"	UVG308
.735"	.375"	2.700"	UVG378

- Manganese bronze alloy
- Ready to be machined

AV&V Valve Seals



Viton Seals

V3I242I

Specifications

Stem Dia.	Seal section O.D.
.312"	.421"

Note

- High Temperature viton seal

- For 5/16" valve Twin Cam® / Evo® / Sportster®
- This seal offers more press fit on the guide allowing installation on both Bronze and Cast iron guides.
- We strongly recommend the use of our valve seal driver #VSD312 to install this seal.



Viton Seals

V3I253I

Specifications

Stem Dia.	Seal section O.D.
.312"	.531"

Note

- High Temperature viton seal

- For 5/16" valve Twin Cam® / Evo® / Sportster®
- This seal offers more press fit on the guide allowing installation on both Bronze and Cast iron guides.
- We strongly recommend the use of our valve seal driver #VSD312 to install this seal.



Viton Seals

V7MM-100

Specifications

Stem Dia.	Seal section O.D.
7MM	.562"

Note

- High Temperature viton seal

- For 7MM valve Twin Cam®, Sportster®
- Replace 7MM O.E. seal when using larger spring & lower collar.
- We strongly recommend the use of our valve seal driver #VSD7MM to install this seal.



Viton Seals

V7MMOE-100

Specifications

Stem Dia.	Seal section O.D.
7MM	.562"

Note

- High Temperature viton seal

- For 7MM valve Twin Cam®, Sportster®
- Replacement for the 7MM O.E. seal.
- The viton and steel sections are bounded together to prevent oil infiltration.



O.E. Style Seals

K3I242O

Specifications

Stem Dia.	Seal section O.D.
.312"	.421"

Note

- O.E. Style metal clad seal

- For 5/16" valve, TwinCam, Evo and Sportster



O.E. Style Seals

K3I253O

Specifications

Stem Dia.	Seal section O.D.
.312"	.531"

Note

- O.E. Style metal clad seal

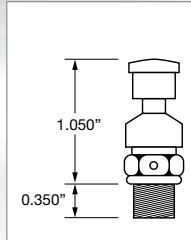
- For 5/16" valve, TwinCam®, Evo® and Sportster®

AV&V Compression Release Valves



- AV&V compression release valves are easier to install due to their short thread section.(# JCR10A & JCR10B). You don't need to machine the heads as deep as if you were using O.E.M. style CR'S
- O.E.M. style also available (# JCR10D)

- Ideal for stock replacement
- Also their high-temperature resistant knobs are charcoal colored for a better match with texture black or silver heads.

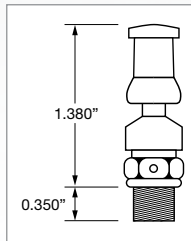


JCR 10A

Protrusion	Thread section	Thread
1.050"	.350"	M10x1

Note

- Mostly Evo's®
- Short protrusion
- Short thread section

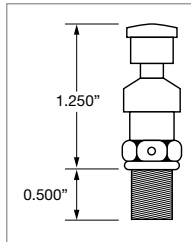


JCR 10B

Protrusion	Thread section	Thread
1.380"	.350"	M10x1

Note

- All mostly Twin Cams®
- Short protrusion
- Short thread section



JCR 10D

Protrusion	Thread section	Thread
1.250"	.500"	M10x1

Note

- O.E.M. Style
- Long protrusion
- Long thread section

AV&V High Performance Valve Spring kits (5/16 valves)



VSK600S

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Available with chromoly(S) or titanium(T) retainers.



SPRINGS - S600-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.600"	155lbs @ 1.885"		405 lbs @ 1.260"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.790"	Double springs

RETAINER - R311CS-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxide	Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	



VSK600T

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Available with chromoly(S) or titanium(T) retainers.



SPRINGS - S600-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.600"	155 lbs @ 1.885"		405 lbs @ 1.260"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.790"	Double springs

RETAINER - R311CT-4

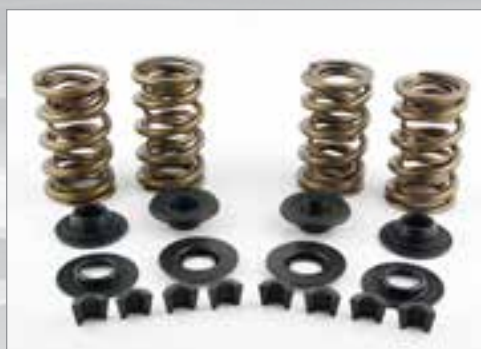
Alloy	Traitement	Notes
Titanium		Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	


VSK650S

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.


SPRINGS - S650-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.650"	185 lbs @ 1.860"		460 lbs @ 1.160"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.790"	Double springs

RETAINER - R311CS-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	


VSK650T

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Titanium retainers.


SPRINGS - S650-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.650"	185 lbs @ 1.860"		460 lbs @ 1.160"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.790"	Double springs

RETAINER - R311CT-4

Alloy	Traitement	Notes
Titanium		Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	

AV&V High Performance Valve Spring kits (5/16 valves)



VSK675T

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Titanium retainers.



SPRINGS - S675-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.675"	185 lbs @ 1.860"	460 lbs @ 1.160"
Coil Bind Height	O.D.	I.D.
1.080"	1.460"	0.790"
Type		
Double springs		

RETAINER - R311CT-4

Alloy	Traitement	Notes
Titanium		Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	



VSK6000

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 9 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

S6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

S6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500"



SPRINGS - S6000-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.600"	165 lbs @ 1.860"	384 lbs @ 1.250"
Coil Bind Height	Type	
1.200"	Beehive springs	

RETAINER - R6000-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 9°

LOWER COLLAR - LSC6000-4

Thickness	O.D.	I.D.	Alloy
.050"	1.425"	.565"	Heat treated steel

VALVE LOCKS - VL311C-8

Tapper	Notes
Angle 9°	


VSK6500

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 9 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

S6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

S6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500


SPRINGS - S6500-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.650"	178lbs @ 1.860"	385 lbs @ 1.200"
Coil Bind Height	Type	
1.150"	Beehive springs	

RETAINER - R6500-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 9°

LOWER COLLAR - LSC6500-4

Thickness	O.D.	I.D.	Alloy
.040"	1.485"	.565"	Heat treated steel

VALVE LOCKS - VL311C-8

Tapper	Notes
Angle 9°	

AV&V High Performance Beehive Valve Spring kits (7MM valves)

(Fit both Single Groove and Triple Groove valves)



VSK60007SG

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 7 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500"



SPRINGS - S6000-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.600"	165lbs @ 1.860"	384 lbs @ 1.250"
Coil Bind Height	Type	
1.200"	Beehive springs	

RETAINER - R60007SG-4

Alloy	Traitement	Notes
4140 Chromely steel	Black Oxyde	Angle 7°

LOWER COLLAR - LSC6000-4

Thickness	O.D.	I.D.	Alloy
.050"	1.425"	.565"	Heat treated steel

VALVE LOCKS - VL7MMSG

Tapper	Notes
Angle 7°	For 7MM single or triple groove valves with Beehive springs



VSK65007SG

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 9 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

S6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

S6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500"



SPRINGS - S6500-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.650"	178lbs @ 1.860"	385 lbs @ 1.200"
Coil Bind Height	Type	
1.150"	Beehive springs	

RETAINER - R6500-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 9°

LOWER COLLAR - LSC6500-4

Thickness	O.D.	I.D.	Alloy
.040"	1.485"	.565"	Heat treated steel

VALVE LOCKS - VL7MMSGC-8

Tapper	Notes
Angle 9°	For 7MM single or triple groove valves with Beehive springs

- This Valve Spring Shim allows the engine builder to adjust spring pressure by combining various thickness shims.
- Using the different thickness is of great help when trying to obtain consistent spring pressure across all valves.



Shim	VSS5015	
Thickness	I.D.	O.D.
.015"	.600"	1.480"
Note		
<ul style="list-style-type: none"> • Perfect Evo®/Twin Cam® fit • Specily designed for Harley Davidson® heads • Heat Treated Steel 		



Shim	VSS5030	
Thickness	I.D.	O.D.
.030"	.600"	1.480"
Note		
<ul style="list-style-type: none"> • Perfect Evo®/Twin Cam® fit • Heat Treated Steel 		



Shim	VSS6022	
Thickness	I.D.	O.D.
.022"	1.010"	1.441"
Note		
<ul style="list-style-type: none"> • Use with Twin Cam® O.E. Style umbrella seals (2005 - up) • Heat Treated Steel 		



EVOLUTION®

- High Flow Valves
- Valves Guides
- Valves Seals
- Compression Release Valves
- Valves Spring kits
- Valves Spring Shims



AV&V Black & Chrome Tulip Extreme Duty Valves (5/16 stem)

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent premature wear with high-lift cams.

AV&V's 5/16 stem valves also features a 45° angle below the lock groove to facilitate valve seal installation.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



High Flow Valves

AVI610D

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.610"	4.510"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Dished valve
- 5/16" stem



High Flow Valves

AVI610S

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.610"	4.565"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- For use with S&S heads
- 5/16" stem



High Flow Valves

AVI650

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.650"	4.515"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Oversize valve for Jims 120" and S/E 110" Heads
- 5/16" stem



High Flow Valves

AVI700A

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.700"	4.535"	.3106"	Black nitride	.235"	Single

Note

- 25° back angle tulip
- .235" Tip can be grinded to shorten valve
- 5/16" stem



High Flow Valves		AVI700C			
Exhaust					
Head Dia.	Overall Lenght	Stem Dia.	Coating	Tip Length	Groove
1.700"	4.445"	.3106"	Chrome	.200"	Single
Note					
<ul style="list-style-type: none">• 25° back angle tulip• For Merch Heads• 5/16" stem					



High Flow Valves		AVI700U			
Exhaust					
Head Dia.	Overall Lenght	Stem Dia.	Coating	Tip Length	Groove
1.700"	4.655"	.3106"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none">• 25° back angle tulip• For Ultima Heads• 5/16" stem					



High Flow Valves		AVI900			
Intake					
Head Dia.	Overall Lenght	Stem Dia.	Coating	Tip Length	Groove
1.900"	4.440"	.3108"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none">• 25° back angle tulip• .055" oversize valve• For use in stock heads• 5/16" stem					



High Flow Valves		AVI900S			
Intake					
Head Dia.	Overall Lenght	Stem Dia.	Coating	Tip Length	Groove
1.900"	4.415"	.3108"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none">• 25° back angle tulip• .025" shorter and .055" oversize valve• For use in stock heads• 5/16" stem					

AV&V Black & Chrome Tulip Extreme Duty Valves (5/16 stem)

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent premature wear with high-lift cams.

AV&V's 5/16 stem valves also features a 45° angle below the lock groove to facilitate valve seal installation.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



High Flow Valves

AVI940

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.940"	4.440"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Oversize valve larger
- If used in stock heads larger seats must be installed
- 5/16" stem



High Flow Valves

AVI990

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.990"	4.440"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Oversize valve
- If used in stock heads larger seats must be installed
- 5/16" stem



High Flow Valves

AV2020A

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.020"	4.440"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Also good for Merch Heads
- Larger seats could be required
- 5/16" stem



High Flow Valves

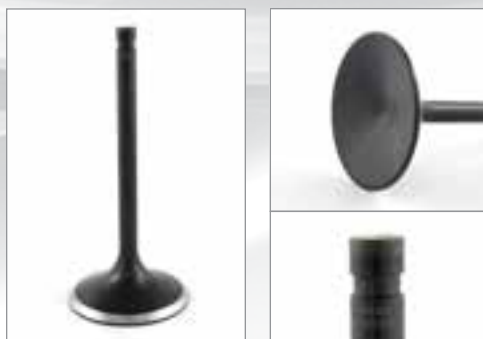
AV2020

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.020"	4.490"	.3108"	Chrome	.200"	Single

Note

- 25° back angle tulip
- .050" longer than AV2020A
- Larger seats could be required
- 5/16" stem


High Flow Valves
AV2020S
Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.020"	4.510"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- For use with S&S Heads
- 5/16" stem


High Flow Valves
AV2060LC
Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.060"	4.510"	.3108"	Chrome	.200"	Single

Note

- 24° back angle tulip
- Used with S&S Heads
- Oversize valve
- 5/16" stem


High Flow Valves
AV2100
Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.100"	4.475"	.3108"	Black nitride	.200"	Single

Note

- 24° back angle tulip
- For Jims 120" and S/E 110" Heads
- Oversize valve
- 5/16" stem


High Flow Valves
AV2100BC (no tip, no groove)
Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.100"	5.700"	.3108"	Chrome	---	---

Note

- 24° back angle tulip
- 5/16" stem heads
- Blank valve (no tip, no groove)
- Bi-metal (can be hardened)

AV&V Black & Chrome Tulip Extreme Duty Valves (5/16 stem)

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent premature wear with high-lift cams.

AV&V's 5/16 stem valves also features a 45° angle below the lock groove to facilitate valve seal installation.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



High Flow Valves

AV2100S

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.100"	4.570"	.3108"	Chrome	.200"	Single

Note

- 24° back angle tulip
- S&S 124" and 131"
- Oversize valve
- 5/16" stem



High Flow Valves

AV2100U

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.100"	4.590"	.3108"	Black nitride	.200"	Single

Note

- 23° back angle tulip
- For Ultima Heads
- 5/16" stem



High Flow Valves

AV2150

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.150"	4.480"	.3108"	Chrome	.200"	Single

Note

- 24° back angle tulip
- Oversize valve for Jims 120" and 131" heads
- 5/16" stem



High Flow Valves

AVI700BC (no tip, no groove)

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.700"	5.700"	.3106"	Chrome	---	---

Note

- 25° back angle tulip
- 5/16" stem blank valve
- Bi-metal (can be hardened)



High Flow Valves

AV2200BC (no tip, no groove)

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
2.200"	5.700"	.3108"	Chrome	---	---

Note

- 25° back angle tulip
- 5/16" stem blank valve
- Bi-metal (can be hardened)

AV&V Extreme Duty Replacement Valves

These superb valves are one piece forged from a racing grade stainless steel alloy.

Our liquid nitriding process creates a valve that is smoother and stronger than traditional O.E.M. or replacement valves.

The stems are centerless grinded to a micro finish for longer life.

AV&V™ Extreme Duty valves also feature a 45° angle below the lock groove to facilitate valve seal installation.



HDIO

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.615"	4.525"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- 5/16" stem
- Stock replacement for Evo 1340



HDII

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.845"	4.440"	.3108"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- 5/16" stem
- Stock replacement for Evo 1340

AV&V Extreme Duty Manganese Bronze Valve Guides (5/16 valves)



- AV&V's Manganese bronze valve guides are CNC machined. Our alloy allows you to fit both intake and exhaust valves at tighter clearances for better heat dissipation, quieter running and longer engine life.
- Special Hi-temp. Viton O'rings are used to prevent oil infiltration between guide & head.
- Tapered & radiused nose for easier installation and better air flow.
- Unique Super Grip valve seal section : use either OEM style or viton seals.
- Unfinished I.D. ready to be easily finished with AV&V's Carbide reamers. (see reamers section)



O.D.	I.D.	Oversize	Overall Length	Intake	Exhaust
High Lift & High Flow application					
.5625"	.308"	Std	2.100"	VG5600	VG5700
.5635"	.308"	.001"	2.100"	VG5601	VG5701
.5645"	.308"	.002"	2.100"	VG5602	VG5702
.5655"	.308"	.003"	2.100"	VG5603	VG5703
.5665"	.308"	.004"	2.100"	VG5604	VG5704
.5675"	.308"	.005"	2.100"	VG5605	VG5705
.5685"	.308"	.006"	2.100"	VG5606	VG5706
.5725"	.308"	.010"	2.100"	VG5610	VG5710
.5875"	.308"	.025"	2.100"	VG5625	VG5725

- Use with .531" Viton valve seals (V312531).
- Shorter seal area for high lift application.
- Profiled for optimum airflow.



O.D.	I.D.	Oversize	Overall Length	Intake	Exhaust
High Lift & High Flow application					
.5625"	.308"	Std	2.100"	VG5600S	VG5700S
.5630"	.308"	.0005"	2.100"	VG5600-5S	VG5700-5S
.5635"	.308"	.001"	2.100"	VG5601S	VG5701S

- Same guides as above except for seal diameter.
- Use with .421" Viton valve seals (V312421), or O.E. style valve seals (K312420)



O.D.	I.D.	Oversize	Overall Length	Intake & Exhaust
Stock replacement				
.5625"	.308"	Std	2.250"	VG5500
.5635"	.308"	.001"	2.250"	VG5501
.5645"	.308"	.002"	2.250"	VG5502
.5655"	.308"	.003"	2.250"	VG5503
.5665"	.308"	.004"	2.250"	VG5504
.5875"	.308"	.025"	2.250"	VG5525

- Use with .531" O.E. style valve seals (K312530).
- Stock length
- Stock replacement

AV&V Universal Valve Guides (5/16 valves)

UVG308



O.D.	I.D.	Overall Length	Intake & Exhaust
Universal Repair guides			
.740"	.308"	2.700"	UVG308
<ul style="list-style-type: none"> Maganese bronze alloy Ready to be machined 			

AV&V Valve Seals



Viton Seals		V3I242I
Specifications		<ul style="list-style-type: none"> For 5/16" valve Twin Cam® / Evo® / Sportster® This seal offers more press fit on the guide allowing installation on both Bronze and Cast iron guides. We strongly recommend the use of our valve seal driver #VSD312 to install this seal.
Stem Dia.	Seal section O.D.	
.312"	.421"	
Note		<ul style="list-style-type: none"> High Temperature viton seal



Viton Seals		V3I253I
Specifications		<ul style="list-style-type: none"> For 5/16" valve Twin Cam® / Evo® / Sportster® This seal offers more press fit on the guide allowing installation on both Bronze and Cast iron guides. We strongly recommend the use of our valve seal driver #VSD312 to install this seal.
Stem Dia.	Seal section O.D.	
.312"	.531"	
Note		<ul style="list-style-type: none"> High Temperature viton seal



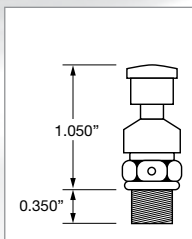
O.E. Style Seals		K3I242O
Specifications		<ul style="list-style-type: none"> For 5/16" valve, TwinCam®, Evo® and Sportster®
Stem Dia.	Seal section O.D.	
.312"	.421"	
Note		<ul style="list-style-type: none"> O.E. Style metal clad seal



O.E. Style Seals		K3I253O
Specifications		<ul style="list-style-type: none"> For 5/16" valve, TwinCam®, Evo® and Sportster®
Stem Dia.	Seal section O.D.	
.312"	.331"	
Note		<ul style="list-style-type: none"> O.E. Style metal clad seal

- AV&V compression release valves are easier to install due to their short thread section.(# JCR10A & JCR10B). You don't need to machine the heads as deep as if you were using O.E.M. style CR'S
- O.E.M. style also available (# JCR10D)

- Ideal for stock replacement
- Also their high-temperature resistant knobs are charcoal colored for a better match with texture black or silver heads.

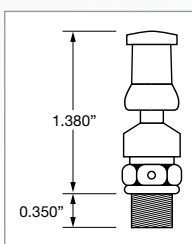


JCR 10A

Protrusion	Thread section	Thread
1.050"	.350"	M10x1

Note

- Mostly Evo's®
- Short protrusion
- Short thread section

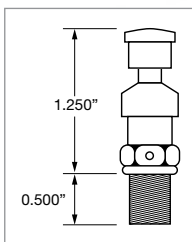


JCR 10B

Protrusion	Thread section	Thread
1.380"	.350"	M10x1

Note

- All mostly Twin Cams®
- Short protrusion
- Short thread section



JCR 10D

Protrusion	Thread section	Thread
1.250"	.500"	M10x1

Note

- O.E.M. Style
- Long protrusion
- Long thread section

AV&V High Performance Valve Spring kits (5/16 valves)



VSK600S

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Available with chromoly(S) or titanium(T) retainers.



SPRINGS - S600-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.600"	155lbs @ 1.885"		405 LBS @ 1.260"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.79"	Double springs

RETAINER - R311CS-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxide	Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	



VSK600T

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Available with chromoly(S) or titanium(T) retainers.



SPRING - S600-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.600"	155lbs @ 1.885"		405 LBS @ 1.260"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.79"	Double springs

RETAINER - R311CT-4

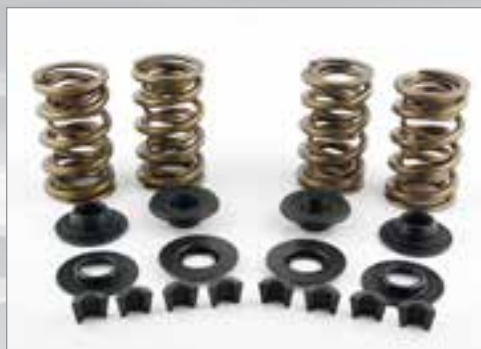
Alloy	Traitement	Notes
Titanium		Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	


VSK650S

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.


SPRINGS - S650-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.650"	185lbs @ 1.860"		460 LBS @ 1.160"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.79"	Double springs

RETAINER - R311CS-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	


VSK650T

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Titanium retainers.


SPRING - S650-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.650"	185lbs @ 1.860"		460 LBS @ 1.160"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.79"	Double springs

RETAINERS- R311CT-4

Alloy	Traitement	Notes
Titanium		Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	

AV&V High Performance Valve Spring kits (5/16 valves)



VSK675T

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Titanium retainers.



SPRINGS - S675-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.675"	185lbs @ 1.860"	460 LBS @ 1.160"
Coil Bind Height	O.D.	I.D.
1.080"	1.460"	0.790"
Type		
Double springs		

RETAINER - R311CT-4

Alloy	Traitement	Notes
Titanium		Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	



VSK6000

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 9 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500"



SPRINGS - S6000-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.600"	165lbs @ 1.860"	384 LBS @ 1.250"
Coil Bind Height	Type	
1.200"	Beehive springs	

RETAINER - R6000-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 9°

LOWER COLLAR - LSC6000-4

Thickness	O.D.	I.D.	Alloy
.050"	1.425"	.565"	Heat treated steel

VALVE LOCKS - VL311C-8

Tapper	Notes
Angle 9°	



VSK6500

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 9 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500



SPRINGS - S6500-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.650"	178lbs @ 1.860"	385 LBS @ 1.200"
Coil Bind Height	Type	
1.150"	Beehive springs	

RETAINER - R6500-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 9°

LOWER COLLAR - LSC6500-4

Thickness	O.D.	I.D.	Alloy
.040"	1.485"	.565"	Heat treated steel

VALVE LOCKS - VL311C-8

Tapper	Notes
9°	

AV&V Valve Spring Shims

- This Valve Spring Shim allows the engine builder to adjust spring pressure by combining various thickness shims.
- Using the different thickness is of great help when trying to obtain consistent spring pressure across all valves.



Shim	VSS5015	
Thickness	I.D.	O.D.
.015"	.600"	1.480"
Note		
<ul style="list-style-type: none"> • Perfect Evo®/Twin Cam® fit • Specily designed for Harley Davidson® heads • Heat Treated Steel 		



Shim	VSS5030	
Thickness	I.D.	O.D.
.030"	.600"	1.480"
Note		
<ul style="list-style-type: none"> • Perfect Evo®/Twin Cam® fit • Heat Treated Steel 		



Shim	VSS6022	
Thickness	I.D.	O.D.
.022"	1.010"	1.441"
Note		
<ul style="list-style-type: none"> • Use with Twin Cam® O.E. Style umbrella seals (2005 - up) • Heat Treated Steel 		



SPORTSTER®

- High Flow Valves
- Valves Guides
- Valves Seals
- Compression Release Valves
- Valves Spring kits
- Valves Spring Shims



AV&V Black & Chrome Tulip Extreme Duty Valves (5/16 stem)

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent premature wear with high-lift cams.

AV&V's 5/16 stem valves also features a 45° angle below the lock groove to facilitate valve seal installation.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



High Flow Valves

AVI480

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.480"	4.640"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Sportster® 883 to 1200 conversion
- Seats must be machined deeper and their I.D. bored
- 5/16" stem



High Flow Valves

AVI485

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.485"	4.560"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Sportster® 1200 and Buell®
- Also good as stock replacement
- 5/16" stem
-



High Flow Valves

AVI580

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.580"	4.575"	.3106"	chrome	.200"	Single

Note

- 25° back angle tulip
- Sportster® 1200, Buell® (fits Thunderstorm)
- 5/16" stem



High Flow Valves

AVI720B

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.720"	4.480"	.3108"	Black nitride	.200"	Single

Note

- 23° back angle tulip
- Sportster® 1200 and Buell®
- Also good as stock replacement
- 5/16" stem



High Flow Valves

AVI770

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.770"	4.480"	.3108"	Black nitride	.200"	Single

Note

- 23° back angle tulip
- 1200 Sportster® & Buell®
- .050" oversize valve
- 5/16" stem



High Flow Valves

AVI813

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.812"	4.485"	.3108"	Chrome	.200"	Single

Note

- 24° back angle tulip
- Sportster 1200® and Buell®
- 5/16" stem



High Flow Valves

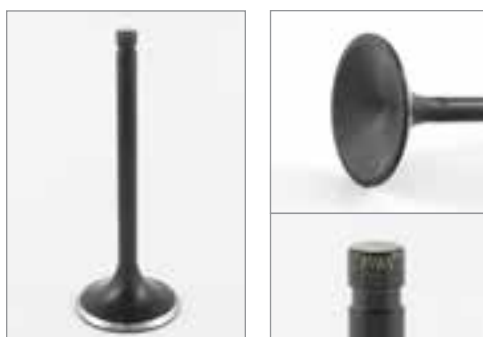
AVI851

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.851"	4.485"	.3108"	Chrome	.200"	Single

Note

- 24° back angle tulip
- Sportster® 1200 and Buell®
- Oversize valve
- 5/16" stem



High Flow Valves

AVI720

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.720"	4.560"	.3108"	Black nitride	.200"	Single

Note

- 22° back angle tulip
- Sportster® 883 to 1200 conversion
- Seats must be machined deeper and their I.D. bored
- 5/16" stem

AV&V Black & Chrome Tulip Extreme Duty Valves (7mm stem)

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent premature wear with high-lift cams.

Each valve is heat treated with a special process and their stems are centerless grinded to a micro finish for longer life.



High Flow Valves

AVI485-7TGB

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.485"	4.680"	.2755"	Black nitride	.085"	Triple

Note

- 23° back angle tulip
- Sportster® 883 to 1200 conversion
- 7MM stem



High Flow Valves

AVI576-7TGB

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.575"	4.620"	.2755"	Black nitride	.085"	Triple

Note

- 25° back angle tulip
- 1200 Sportster®, Buell XB9® et XB12®
- Also good as stock replacement
- 7MM stem



High Flow Valves

AVI725-7TGB

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.725"	4.580"	.2757"	Black nitride	.085"	Triple

Note

- 23° back angle tulip
- Sportster® 883 to 1200 conversion (2004 and up)
- 7MM stem



High Flow Valves

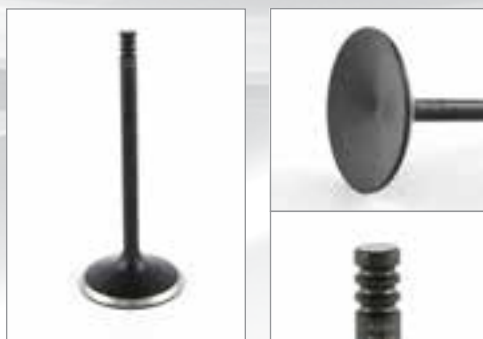
AVI811-7TGB

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.810"	4.480"	.2757"	Black nitride	.085"	Triple

Note

- 24° back angle tulip
- 1200 Sportster®, Buell XB9® and XB12®
- Also good as stock replacement
- 7MM stem



High Flow Valves

AVI85I-7TGB

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.851"	4.520"	.2757"	Black nitride	.085"	Triple

Note

- 24° back angle tulip
- 1200 Sportster®, Buell XB9® et XB12®
- .040" Oversize valves
- 7MM stem

AV&V Extreme Duty Replacement Valves

These superb valves are one piece forged from a racing grade stainless steel alloy.

The stems are centerless grinded to a micro finish for longer life.

Our liquid nitriding process creates a valve that is smoother and stronger than traditional O.E.M. or replacement valves.



AVI355

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.355"	4.635"	.3106"	Black nitride	.200"	Single

Note

- 23° back angle tulip
- Sportster® 883
- 5/16" stem



AVI485

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.485"	4.560"	.3106"	Black nitride	.200"	Single

Note

- 25° back angle tulip
- Sportster® 1200 and Buell®
- 5/16" stem

AV&V Extreme Duty Replacement Valves

These superb valves are one piece forged from a racing grade stainless steel alloy.

Our liquid nitriding process creates a valve that is smoother and stronger than traditional O.E.M. or replacement valves.

The stems are centerless grinded to a micro finish for longer life.

AV&V™ Extreme Duty 5/16" valves also feature a 45° angle below the lock groove to facilitate valve seal installation.



AVI590					
Intake					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.590"	4.550"	.3108"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none"> • 23° back angle tulip • Sportster® 883 • 5/16" stem 					



High Flow Valves		AVI720B			
Intake					
Head Dia.	Overall Lenght	Stem Dia.	Coating	Tip Length	Groove
1.720"	4.480"	.3108"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none">• 23 ° back angle tulip• 5/16" stem• Sportster® 1200 and Buell®					



High Flow Valves		AVI576-7TGB			
Exhaust					
Head Dia.	Overall Lenght	Stem Dia.	Coating	Tip Length	Groove
1.575"	4.620"	.2755"	Black nitride	.085"	Triple
Note					
<ul style="list-style-type: none">• 25° back angle tulip• 1200 Sportster®, Buell XB9® and XB12®• 7MM stem					



High Flow Valves		AVI811-7TGB			
Intake					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.810"	4.480"	.2757"	Black nitride	.085"	Triple
Note					
<ul style="list-style-type: none">• 24° back angle tulip• 1200 Sportster®, Buell XB9® and XB12®• 7MM stem					

AV&V Extreme Duty Manganese Bronze Valve Guides (5/16 valves)



- AV&V's Manganese bronze valve guides are CNC machined. Our alloy allows you to fit both intake and exhaust valves at tighter clearances for better heat dissipation, quieter running and longer engine life.
- Special Hi-temp. Viton O'rings are used to prevent oil infiltration between guide & head.
- Tapered & radiused nose for easier installation and better air flow.
- Unique Super Grip valve seal section : use either OEM style or viton seals.
- Unfinished I.D. ready to be easily finished with AV&V's Carbide reamers. (see reamers section)



O.D.	I.D.	Oversize	Overall Length	Intake	Exhaust
High Lift & High Flow application					
.5625"	.308"	Std	2.100"	VG5600	VG5700
.5635"	.308"	.001"	2.100"	VG5601	VG5701
.5645"	.308"	.002"	2.100"	VG5602	VG5702
.5655"	.308"	.003"	2.100"	VG5603	VG5703
.5665"	.308"	.004"	2.100"	VG5604	VG5704
.5675"	.308"	.005"	2.100"	VG5605	VG5705
.5685"	.308"	.006"	2.100"	VG5606	VG5706
.5725"	.308"	.010"	2.100"	VG5610	VG5710
.5875"	.308"	.025"	2.100"	VG5625	VG5725

- Use with .531" Viton valve seals (V312531).
- Shorter seal area for high lift application.
- Profiled for optimum airflow.



O.D.	I.D.	Oversize	Overall Length	Intake	Exhaust
High Lift & High Flow application					
.5625"	.308"	Std	2.100"	VG5600S	VG5700S
.5630"	.308"	.0005"	2.100"	VG5600-5S	VG5700-5S
.5635"	.308"	.001"	2.100"	VG5601S	VG5701S

- Same guides as above except for seal diameter.
- Use with .421" Viton valve seals (V312421), or O.E. style valve seals (K312420)



O.D.	I.D.	Oversize	Overall Length	Intake & Exhaust
Stock replacement				
.5625"	.308"	Std	2.250"	VG5500
.5635"	.308"	.001"	2.250"	VG5501
.5645"	.308"	.002"	2.250"	VG5502
.5655"	.308"	.003"	2.250"	VG5503
.5665"	.308"	.004"	2.250"	VG5504
.5875"	.308"	.025"	2.250"	VG5525

- Use with .531" O.E. style valve seals (K312530).
- Stock length
- Stock replacement

AV&V Extreme Duty Manganese Bronze Valve Guides (7MM valves)

- AV&V's Manganese bronze valve guides are CNC machined. Our alloy allows you to fit both intake and exhaust valves at tighter clearances for better heat dissipation, quieter running and longer engine life.
- Special Hi-temp. Viton O'rings are used to prevent oil infiltration between guide & head.
- Tapered & radiused nose for easier installation and better air flow.
- Unique Super Grip valve seal section : use either OEM style or viton seals.
- Unfinished I.D. ready to be easily finished with AV&V's Carbide reamers. (see *reamers section*)



O.D.	I.D.	Oversize	Overall Length	Intake	Exhaust
High Lift & High Flow application					
.5625"	.273"	Std	2.040"	VG6600	VG6700
.5635"	.273"	.001"	2.040"	VG6601	VG6701
.5645"	.273"	.002"	2.040"	VG6602	VG6702
.5655"	.273"	.003"	2.040"	VG6603	VG6703
.5665"	.273"	.004"	2.040"	VG6604	VG6704
.5675"	.273"	.005"	2.040"	VG6605	VG6705
.5685"	.273"	.006"	2.040"	VG6606	VG6706
.5725"	.273"	.010"	2.040"	VG6610	VG6710
.5875"	.273"	.025"	2.040"	VG6625	VG6725

- Use with O.E. style Viton valve seals (V7MMOE).
- Profiled for optimum airflow.

AV&V Universal Valve Guides (5/16 and 7MM valves)



O.D.	I.D.	Overall Length	Intake & Exhaust
Universal Repair guides			
.740"	.273"	2.700"	UVG7MM
.740"	.308"	2.700"	UVG308

- Manganese bronze alloy
- Ready to be machined


Viton Seals
V3I242I
Specifications

Stem Dia.	Seal section O.D.
.312"	.421"

Note

- High Temperature viton seal

- For 5/16" valve Twin Cam® / Evo® / Sportster®
- This seal offers more press fit on the guide allowing installation on both Bronze and Cast iron guides.
- We strongly recommend the use of our valve seal driver #VSD312 to install this seal.


Viton Seals
V3I253I
Specifications

Stem Dia.	Seal section O.D.
.312"	.531"

Note

- High Temperature viton seal

- For 5/16" valve Twin Cam® / Evo® / Sportster®
- This seal offers more press fit on the guide allowing installation on both Bronze and Cast iron guides.
- We strongly recommend the use of our valve seal driver #VSD312 to install this seal.


Viton Seals
V7MM-100
Specifications

Stem Dia.	Seal section O.D.
7MM	.562"

Note

- High Temperature viton seal

- For 7MM valve Twin Cam®, Sportster®
- Replace 7MM O.E. seal when using larger spring & lower collar.
- We strongly recommend the use of our valve seal driver #VSD7MM to install this seal.


Viton Seals
V7MMOE-100
Specifications

Stem Dia.	Seal section O.D.
7MM	.562"

Note

- High Temperature viton seal

- For 7MM valve Twin Cam®, Sportster®
- Replacement for the 7MM O.E. seal.
- The viton and steel sections are bounded together to prevent oil infiltration.


O.E. Style Seals
K3I242O
Specifications

Stem Dia.	Seal section O.D.
.312"	.421"

Note

- O.E. Style metal clad seal

- For 5/16" valve, TwinCam®, Evo® and Sportster®


O.E. Style Seals
K3I253O
Specifications

Stem Dia.	Seal section O.D.
.312"	.531"

Note

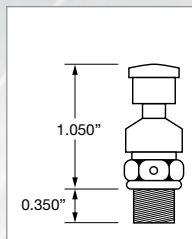
- O.E. Style metal clad seal

- For 5/16" valve, TwinCam, Evo and Sportster

AV&V Compression Release Valves

- AV&V compression release valves are easier to install due to their short thread section.(# JCR10A & JCR10B). You don't need to machine the heads as deep as if you were using O.E.M. style CR'S
- O.E.M. style also available (# JCR10D)

- Ideal for stock replacement
- Also their high-temperature resistant knobs are charcoal colored for a better match with texture black or silver heads.

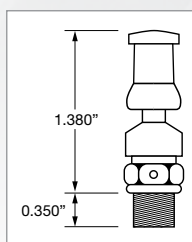


JCR 10A

Protrusion	Thread section	Thread
1.050"	.350"	M10x1

Note

- Mostly Evo's®
- Short protrusion
- Short thread section

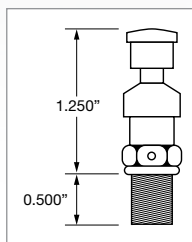


JCR 10B

Protrusion	Thread section	Thread
1.380"	.350"	M10x1

Note

- All mostly Twin Cams®
- Short protrusion
- Short thread section



JCR 10D

Protrusion	Thread section	Thread
1.250"	.500"	M10x1

Note

- O.E.M. Style
- Long protrusion
- Long thread section



VSK600S

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Available with chromoly(S) or titanium(T) retainers.



SPRINGS - S600-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.600"	155lbs @ 1.885"		405 LBS @ 1.260"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.79"	Double springs

RETAINER - R311CS-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	



VSK600T

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Available with chromoly(S) or titanium(T) retainers.



SPRINGS - S600-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.600"	155lbs @ 1.885"		405 LBS @ 1.260"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.79"	Double springs

RETAINER - R311CT-4

Alloy	Traitement	Notes
Titanium	----	Angle 10°

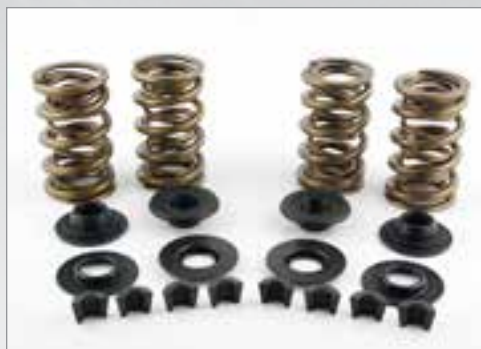
LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	

AV&V High Performance Valve Spring kits (5/16 valves)



VSK650S

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.



SPRINGS - S650-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.650"	185lbs @ 1.860"		460 LBS @ 1.160"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.79"	Double springs

RETAINER - R311CS-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	



VSK650T

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.
- Titanium retainers.



SPRINGS - S650-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.650"	185lbs @ 1.860"		460 LBS @ 1.160"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.79"	Double springs

RETAINER - R311CT-4

Alloy	Traitement	Notes
Titanium		Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	



VSK675T

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.
- 1.375" Top retainers for better clearance inside rocker covers.



SPRINGS - S675-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.675"	185lbs @ 1.860"		460 LBS @ 1.160"
Coil Bind Height	O.D.	I.D.	Type
1.080"	1.460"	0.790"	Double springs

RETAINER - R311CT-4

Alloy	Traitement	Notes
Titanium	---	Angle 10°

LOWER COLLAR - LSC600-4

Thickness	O.D.	I.D.	Alloy
.040"	1.418"	.562"	Heat treated steel

VALVE LOCKS - VL311A-8

Tapper	Notes
Jumbo 10°	



VSK6000

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 9 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500



SPRINGS - S6000-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.600"	165lbs @ 1.860"		384 LBS @ 1.250"
Coil Bind Height	Type		
1.200"	Beehive springs		

RETAINER - R6000-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 9°

LOWER COLLAR - LSC6000-4

Thickness	O.D.	I.D.	Alloy
.050"	1.425"	.565"	Heat treated steel

VALVE LOCKS - VL311C-8

Tapper	Notes
Angle 9°	

AV&V High Performance Valve Spring kits (5/16 valves)



VSK6500

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 9 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500



SPRINGS - S6500-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.650"	178lbs @ 1.860"	385 LBS @ 1.200"
Coil Bind Height	Type	
1.150"	Beehive springs	

RETAINER - R6500-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 9°

LOWER COLLAR - LSC6500-4

Thickness	O.D.	I.D.	Alloy
.040"	1.485"	.565"	Heat treated steel

VALVE LOCKS - VL311C-8

Tapper	Notes
9°	

AV&V High Performance Beehive Valve Spring kits (7MM valves)

(Fit both Single Groove and Triple Groove valves)



VSK60007SG

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 7 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500



SPRINGS - S6000-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.600"	165lbs @ 1.860"	384 LBS @ 1.250"
Coil Bind Height	Type	
1.200"	Beehive springs	

RETAINER - R60007SG-4

Alloy	Traitement	Notes
4140 Chromely steel	Black Oxyde	Angle 7°

LOWER COLLAR - LSC6000-4

Thickness	O.D.	I.D.	Alloy
.050"	1.425"	.565"	Heat treated steel

VALVE LOCKS - VL7MMSG

Tapper	Notes
Angle 7°	For 7MM single or triple groove valves with Beehive springs



VSK65007SG

- Manufactured from ultra-clean high-silicon Kobe alloy wire, then nano-peened and polished, they are 100% load-sorted to exceed our customers' expectations.
- CNC machined Extreme Duty 9 deg. locks.
- Ultralite Chromoly forged retainers.

NOTE

6000 springs - Small end ID: .650", OD: 1.085" / Large end ID: 1.000", OD: 1.445"

6500 springs - Small end ID: .740", OD: 1.185" / Large end ID: 1.055", OD: 1.500



SPRINGS - S6500-4

Max. Recommended Lift	Seat Pressure	Open Pressure (lbs@mm)
.650"	178lbs @ 1.860"	385 LBS @ 1.200"
Coil Bind Height	Type	
1.150"	Beehive springs	

RETAINER - R6500-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 9°

LOWER COLLAR - LSC6500-4

Thickness	O.D.	I.D.	Alloy
.040"	1.485"	.565"	Heat treated steel

VALVE LOCKS - VL7MMSGC-8

Tapper	Notes
Angle 9°	

AV&V Valve Spring Shims

- This Valve Spring Shim allows the engine builder to adjust spring pressure by combining various thickness shims.
- Using the different thickness is of great help when trying to obtain consistent spring pressure across all valves.



Shim	VSS5015	
Thickness	I.D.	O.D.
.015"	.600"	1.480"
Note		
<ul style="list-style-type: none"> • Perfect Evo®/Twin Cam® fit • Specily designed for Harley Davidson® heads • Heat Treated Steel 		



Shim	VSS5030	
Thickness	I.D.	O.D.
.030"	.600"	1.480"
Note		
<ul style="list-style-type: none"> • Perfect Evo®/Twin Cam® fit • Heat Treated Steel 		



Shim	VSS6022	
Thickness	I.D.	O.D.
.022"	1.010"	1.441"
Note		
<ul style="list-style-type: none"> • Use with Twin Cam® O.E. Style umbrella seals (2005 - up) • Heat Treated Steel 		



SHOVEL HEAD®

- Extreme Duty Replacement Valves
- Valves Guides
- Valves Seals
- Compression Release Valves
- Valves Spring kits



AV&V Extreme Duty Replacement Valves

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve has a bearing quality hardened tip to prevent pre-mature wear with high-lift cams.

AV&V's 3/8" stem valves also features a 45° angle below the lock groove to facilitate valve seal installation.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



HDO7					
Exhaust					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.750"	3.830"	.3764"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none"> • 25° back angle tulip • 3/8" stem 					



HDO9					
Intake					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.955"	3.875"	.3770"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none"> • 20° back angle tulip • Shovel Head 1200 and 1340 • 3/8" stem 					

- AV&V's Manganese bronze valve guides are CNC machined. Our alloy allows you to fit both intake and exhaust valves at tighter clearances for better heat dissipation, quieter running and longer engine life.
- Special Hi-temp. Viton O'rings are used to prevent oil infiltration between guide & head.
- Tapered & radiused nose for easier installation and better air flow.
- Unique Super Grip valve seal section : use either OEM style or viton seals.
- Unfinished I.D. ready to be easily finished with AV&V's Carbide reamers. (see reamers section)



O.D.	I.D.	Oversize	Overall Length	Intake & Exhaust
Stock replacement				
.6250"	.375"	Std	1.900"	VG5400
.6260"	.375"	.001"	1.900"	VG5401
.6270"	.375"	.002"	1.900"	VG5402
.6280"	.375"	.003"	1.900"	VG5403
.6290"	.375"	.004"	1.900"	VG5404
.6300"	.375"	.005"	1.900"	VG5405
.6310"	.375"	.006"	1.900"	VG5406
.6350"	.375"	.010"	1.900"	VG5410
.6400"	.375"	.015"	1.900"	VG5415
.6500"	.375"	.025"	1.900"	VG5425

- 1340 Shovel Head (1979-84)t



O.D.	I.D.	Oversize	Overall Length	Intake & Exhaust
Stock replacement				
.5660"	.375"	Std	1.900"	VG5300
.5670"	.375"	.001"	1.900"	VG5301
.5680"	.375"	.002"	1.900"	VG5302
.5690"	.375"	.003"	1.900"	VG5303
.5700"	.375"	.004"	1.900"	VG5304
.5710"	.375"	.005"	1.900"	VG5305
.5720"	.375"	.006"	1.900"	VG5306
.5740"	.375"	.008"	1.900"	VG5308
.5760"	.375"	.010"	1.900"	VG5310
.5810"	.375"	.015"	1.900"	VG5315
.5910"	.375"	.025"	1.900"	VG5325

- 1200 Shovel Heads (1948-79)

AV&V Universal Valve Guides (3/8 valves)

UVG375



O.D.	I.D.	Overall Length	Intake & Exhaust
Universal Repair guides			
.740"	.375"	2.700"	UVG375
<ul style="list-style-type: none"> Manganese bronze alloy Ready to be machined 			

AV&V Valve Seals



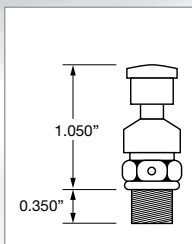
O.E. Style Seals		K375562
Description		<ul style="list-style-type: none"> Shovel Head® (1948-1979)
Stem Dia.	Seal section O.D.	
.375"	.562"	
Note		<ul style="list-style-type: none"> O.E. Style metal clad seal



O.E. Style Seals		K375625
Description		<ul style="list-style-type: none"> Shovel Head® (1980-1984)
Stem Dia.	Seal section O.D.	
.375"	.625"	
Note		<ul style="list-style-type: none"> O.E. Style metal clad seal

- AV&V compression release valves are easier to install due to their short thread section.(# JCR10A & JCR10B). You don't need to machine the heads as deep as if you were using O.E.M. style CR'S
- O.E.M. style also available (# JCR10D)

- Ideal for stock replacement
- Also their high-temperature resistant knobs are charcoal colored for a better match with texture black or silver heads.

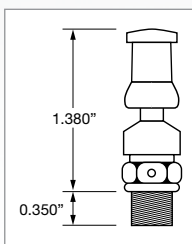


JCR 10A

Protrusion	Thread section	Thread
1.050"	.350"	M10x1

Note

- Mostly Evo's®
- Short protrusion
- Short thread section

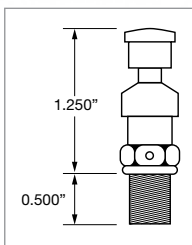


JCR 10B

Protrusion	Thread section	Thread
1.380"	.350"	M10x1

Note

- All mostly Twin Cams®
- Short protrusion
- Short thread section



JCR 10D

Protrusion	Thread section	Thread
1.250"	.500"	M10x1

Note

- O.E.M. Style
- Long protrusion
- Long thread section

AV&V High Performance Valve Spring kits



VSK470

- Manufactured from ultra clean high silicon & vanadium alloy wire.
- CNC machined tight fit locks.
- Light weight 1.375" chromoly top retainers; for better clearance inside rocker covers.



SPRINGS - S470-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.470"	155lb @ 1.375"		300lb @ .980"
Coil Bind Height	O.D.	I.D.	Type
.850"	1.640"	1.010"	Double springs

RETAINER - R530-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 15°

LOWER COLLAR - LSC530-4

Thickness	O.D.	I.D.	Alloy
.055" / .180"	1.495"	.755"	Heat treated steel

VALVE LOCKS - VL375-8

Tapper	Notes
Jumbo 15°	OE replacement and AV&V470, AV&V530, VSK590



VSK530

- Manufactured from ultra clean high silicon & vanadium alloy wire.
- CNC machined tight fit locks.
- Light weight 1.375" chromoly top retainers; for better clearance inside rocker covers.



SPRINGS - S530-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.530"	155lb @ 1.455"		320b @ 0.980"
Coil Bind Height	O.D.	I.D.	Type
.980"	1.640"	.970"	Double springs

RETAINER - R530-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 15°

LOWER COLLAR - LSC530-4

Thickness	O.D.	I.D.	Alloy
.055" / .180"	1.495"	.755"	Heat treated steel

VALVE LOCKS - VL375-8

Tapper	Notes
Jumbo 15°	OE replacement and AV&V470, AV&V530, VSK590



VSK590

- Manufactured from ultra clean high silicon & vanadium alloy wire.
- CNC machined tight fit locks.
- Light weight 1.375" chromoly top retainers; for better clearance inside rocker covers.



SPRINGS - S590-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.625"	175lbs @ 1.455"		350lbs @ .980"
Coil Bind Height	O.D.	I.D.	Type
.850"	1.625"	.965"	Double springs

RETAINER - R530-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 15°

LOWER COLLAR - LSC530-4

Thickness	O.D.	I.D.	Alloy
.055" / .180"	1.495"	.755"	Heat treated steel

VALVE LOCKS - VL375-8

Tapper	Notes
Jumbo 15°	OE replacement and AV&V470, AV&V530, VSK590

NOTE: These Pan/Shovel valve springs are not bolt-in items. Always make sure to check the minimum spring spacing and to keep a minimum of .060" before coil bind, at full lift.

Early 1948-1980 heads must be machined to accept AV&V's late style lower collars.

You may need to machine the spring seat with Goodson spring seat cutter #VSS-1680HD and/or use AV&V upper spring collar kit #R530-4 and/or machine the valve seats deeper to get the correct spring spacing.

For reference, on late style Shovel (1980-1984), with a 1.630" valve stem protrusion, the spring spacing is +/- 1.375".



PAN HEAD®

- Extreme Duty Replacement Valves
- Valves Guides
- Valves Seals
- Valves Springs kit



AV&V Extreme Duty Replacement Valves

These superb valves are one piece forged from a racing grade stainless steel alloy.

Our liquid nitriding process creates a valve that is smoother and stronger than traditional O.E.M. or replacement valves.

The stems are centerless grinded to a micro finish for longer life.

AV&V™ Extreme Duty valves also feature a 45° angle below the lock groove to facilitate valve seal installation.



HDO7					
Exhaust					
Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.750"	3.830"	.3764"	Black nitride	.200"	Single
Note					
<ul style="list-style-type: none"> • 25° back angle tulip • 3/8" stem 					

AV&V Extreme Duty Manganese Bronze Valve Guides

- AV&V's Manganese bronze valve guides are CNC machined. Our alloy allows you to fit both intake and exhaust valves at tighter clearances for better heat dissipation, quieter running and longer engine life.
- Special Hi-temp. Viton O'rings are used to prevent oil infiltration between guide & head.
- Tapered & radiused nose for easier installation and better air flow.
- Unique Super Grip valve seal section : use either OEM style or viton seals.
- Unfinished I.D. ready to be easily finished with AV&V's Carbide reamers. (see *reamers section*)



O.D.	I.D.	Oversize	Overall Length	Intake & Exhaust
Stock replacement				
.5660"	.375"	Std	1.900"	VG5300
.5670"	.375"	.001"	1.900"	VG5301
.5680"	.375"	.002"	1.900"	VG5302
.5690"	.375"	.003"	1.900"	VG5303
.5700"	.375"	.004"	1.900"	VG5304
.5710"	.375"	.005"	1.900"	VG5305
.5720"	.375"	.006"	1.900"	VG5306
.5740"	.375"	.008"	1.900"	VG5308
.5760"	.375"	.010"	1.900"	VG5310
.5810"	.375"	.015"	1.900"	VG5315
.5910"	.375"	.025"	1.900"	VG5325

- Pan Head® 1200 (1948-79)

AV&V Universal Valve Guides (3/8 valves)



O.D.	I.D.	Overall Length	Intake & Exhaust
Universal Repair guides			
.740"	.375"	2.700"	UVG375
<ul style="list-style-type: none"> Maganese bronze alloy Ready to be machined 			

AV&V Valve Seals



O.E. Style Seals		K375562
Description		<ul style="list-style-type: none"> Pan Head® (1948-1979)
Stem Dia.	Seal section O.D.	
.375"	.562"	
Note		<ul style="list-style-type: none"> O.E. Style metal clad seal

AV&V High Performance Valve Spring kit



VSK470

- Manufactured from ultra clean high silicon & vanadium alloy wire.
- CNC machined tight fit locks.
- Light weight 1.375" chromoly top retainers; for better clearance inside rocker covers.



SPRINGS - S470-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.470"	155lb @ 1.375"		300lb @ .980"
Coil Bind Height	O.D.	I.D.	Type
.850"	1.640"	1.010"	Double springs

RETAINER - R530-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 15°

LOWER COLLAR - LSC530-4

Thickness	O.D.	I.D.	Alloy
.055" / .180"	1.495"	.755"	Heat treated steel

VALVE LOCKS - VL375-8

Tapper	Notes
Jumbo 15°	OE replacement and AV&V470, AV&V530, VSK590



VSK530

- Manufactured from ultra clean high silicon & vanadium alloy wire.
- CNC machined tight fit locks.
- Light weight 1.375" chromoly top retainers; for better clearance inside rocker covers.



SPRINGS - S530-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.530"	155lb @ 1.455"		320b @ 0.980"
Coil Bind Height	O.D.	I.D.	Type
.980"	1.640"	.970"	Double springs

RETAINER - R530-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 15°

LOWER COLLAR - LSC530-4

Thickness	O.D.	I.D.	Alloy
.055" / .180"	1.495"	.755"	Heat treated steel

VALVE LOCKS - VL375-8

Tapper	Notes
Jumbo 15°	OE replacement and AV&V470, AV&V530, VSK590


VSK590

- Manufactured from ultra clean high silicon & vanadium alloy wire.
- CNC machined tight fit locks.
- Light weight 1.375" chromoly top retainers; for better clearance inside rocker covers.


SPRINGS - S590-4

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.625"	175lbs @ 1.455"		350lbs @ .980"
Coil Bind Height	O.D.	I.D.	Type
.850"	1.625"	.965"	Double springs

RETAINER - R530-4

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 15°

LOWER COLLAR - LSC530-4

Thickness	O.D.	I.D.	Alloy
.055" / .180"	1.495"	.755"	Heat treated steel

VALVE LOCKS - VL375-8

Tapper	Notes
Jumbo 15°	OE replacement and AV&V470, AV&V530, VSK590

NOTE: These Pan/Shovel valve springs are not bolt-in items. Always make sure to check the minimum spring spacing and to keep a minimum of .060" before coil bind, at full lift.

Early 1948-1980 heads must be machined to accept AV&V's late style lower collars.

You may need to machine the spring seat with Goodson spring seat cutter #VSS-1680HD and/or use AV&V upper spring collar kit #R530-4 and/or machine the valve seats deeper to get the correct spring spacing.

For reference, on late style Shovel (1980-1984), with a 1.630" valve stem protrusion, the spring spacing is +/- 1.375".



IRON HEAD®

- Extreme Duty Replacement Valves
- Valves Seals
- Valves Guides



AV&V Extreme Duty Replacement Valves

These superb valves are one piece forged from a racing grade stainless steel alloy.

Our liquid nitriding process creates a valve that is smoother and stronger than traditional O.E.M. or replacement valves.

The stems are centerless grinded to a micro finish for longer life.

AV&V™ Extreme Duty valves also feature a 45° angle below the lock groove to facilitate valve seal installation.



HD03

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.561"	3.505"	.3389"	Black nitride	.155"	Single

Note

- 20° back angle tulip
- For 900/1000 Sportster®
- 11/32" stem



HD04

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.812"	3.615"	.3108"	Black nitride	.200"	Single

Note

- 20° back angle tulip
- For 900 Sportster®
- 5/16" stem



HD05

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
1.940"	3.615"	.3108"	Black nitride	.200"	Single

Note

- 20° back angle tulip
- For 1000 Sportster®
- 5/16" stem

AV&V Extreme Duty Cast Iron Valve Guides



- AV&V's Cast iron valve guides are CNC machined. Our alloy allows you to fit both intake and exhaust valves at tighter clearances for better heat dissipation, quieter running and longer engine life.
- Special Hi-temp. Viton O'rings are used to prevent oil infiltration between guide & head.
- Tapered & radiused nose for easier installation and better air flow.
- Unique Super Grip valve seal section : use either OEM style or viton seals.
- Unfinished I.D. ready to be easily finished with AV&V's Carbide reamers. (see reamers section)



O.D.	I.D.	Oversize	Overall Length	Intake	Exhaust
High Lift & High Flow application					
.5645"	.308"	Std	1.750"	VG5100C	
.5655"	.308"	.001"	1.750"	VG5101C	
.5665"	.308"	.002"	1.750"	VG5102C	
.5675"	.308"	.003"	1.750"	VG5103C	
.5645"	.338"	Std	1.750"		VG5200C
.5655"	.338"	.001"	1.750"		VG5201C
.5665"	.338"	.002"	1.750"		VG5202C
.5675"	.338"	.003"	1.750"		VG5203C

- For XL 1957 to early 1983
- Made from G2 Cast Iron
- Shortened seal section allows .530" valve seal installation (K312530 and K341530).
- Profiled for optimum airflow.

AV&V Valve Seals



O.E Style Seals

K312530

Description

Stem Dia.	Seal section O.D.
.312"	.530"

Note

- O.E. Style metal clad seal

- For Iron Head Sportster®



O.E Style Seals

K341530

Description

Stem Dia.	Seal section O.D.
.341"	.530"

Note

- O.E. Style metal clad seal

- For Iron Head Sportster®

IRON HEAD



V-ROD®

- High Flow Valves
- Valves Guides
- Valves Seals
- Valves Spring kits



AV&V Chrome Tulip Extreme Duty Valves for V-Rod

These superb valves feature the highest flow level on the market. They are one piece forged from a racing grade stainless steel alloy.

Each valve is heat treated with a special process and their stems centerless grinded to a micro finish for longer life.



High Flow Valves

AV34-6TGC

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
34.4MM	116.9MM	.2346"	Chrome	.070"	Triple

Note

- 21° back angle tulip
- Stock replacement valve
- 6MM stem



High Flow Valves

AV35-6TGC

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
35.4MM	116.9MM	.2346"	Chrome	.070"	Triple

Note

- 21° back angle tulip
- 1MM oversize valve
- 6MM stem



High Flow Valves

AV40-6TGC

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
40MM	116.28MM	.2351"	Chrome	.070"	Triple

Note

- 18° back angle tulip
- Stock replacement valve
- 6MM stem



High Flow Valves

AV41-6TGC

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
41MM	116.28MM	.2351"	Chrome	.070"	Triple

Note

- 18° back angle tulip
- 1MM oversize valve
- 6MM stem



High Flow Valves

AV35-6SGC

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
35.4MM	116.9MM	.2346"	Chrome	.070"	Single

Note

- 21° back angle tulip
- 1MM Single groove oversize valve (use with AV&V VSK7000SG)
- 6MM stem



High Flow Valves

AV41-6SGC

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
41MM	116.28MM	.2351"	Chrome	.070"	Single

Note

- 18° back angle tulip
- 1MM Single groove oversize valve (use with AV&V VSK7000SG)
- 6MM stem



High Flow Valves

AV35-6B (no tip, no groove)

Exhaust

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
35.4MM	5"	.2346"	Chrome	---	---

Note

- 21° back angle tulip
- 1MM oversize blank valve
- 6MM stem



High Flow Valves

AV41-6B (no tip, no groove)

Intake

Head Dia.	Overall Length	Stem Dia.	Coating	Tip Length	Groove
41MM	5"	.2351"	Chrome	---	---

Note

- 18° back angle tulip
- 1MM oversize blank valve
- 6MM stem

AV&V Extreme Duty Manganese Bronze Valve Guides

- AV&V's Manganese bronze valve guides are CNC machined. Our alloy allows you to fit both intake and exhaust valves at tighter clearances for better heat dissipation, quieter running and longer engine life
- Tapered & radiused nose for easier installation and better air flow.
- Unfinished I.D. ready to be easily finished with AV&V's Carbide reamers. (see *reamers section*)



O.D.	I.D.	Oversize	Overall Length	Intake & Exhaust
Stock replacement				
.3955"	5.9MM	Std	1.950"	VG7000
.3965"	5.9MM	.001"	1.950"	VG7001
.3975"	5.9MM	.002"	1.950"	VG7002
.3985"	5.9MM	.003"	1.950"	VG7003

- Use with O.E. style valve seals (V6MM)
- Profiled for optimum airflow

AV&V Universal Valve Guides



O.D.	I.D.	Overall Length	Intake & Exhaust
Universal Repair guides			
.620"	5.9MM	2.375"	UVG6MM

AV&V Valve Seals



Viton Seals		V6MM
Description		<ul style="list-style-type: none"> • For V-Rod®
Stem Dia.	Seal section O.D.	
6MM	8.5MM	
Note		<ul style="list-style-type: none"> • High Temperature viton seal



VSK7000TG

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.



SPRINGS - S7000-8

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.580"	92 lbs @ 1.500"		288 lbs @ .900"
Coil Bind Height	O.D.	I.D.	Type
.870"	1.100"	.750"	Beehive springs

RETAINER - R7000S-8

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 7°

VALVE LOCKS - VL6MMTG-8

Tapper	Notes
7°	For triple groove valves



VSK7000SG

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.



SPRINGS - S7000-8

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.580"	92 lbs @ 1.500"		288 lbs @ .900"
Coil Bind Height	O.D.	I.D.	Type
.870"	1.100"	.750"	Beehive springs

RETAINER - R7000S-8

Alloy	Traitement	Notes
4140 Chromoly steel	Black Oxyde	Angle 7°

VALVE LOCKS - VL6MMSG-8

Tapper	Notes
7°	For single groove valves

AV&V High Performance Valve Spring kits



VSK7000SGT

- Manufactured from ultra clean high silicon/vanadium Kobe alloy wire.



SPRINGS - S7000-8

Max. Recommended Lift	Seat Pressure		Open Pressure (lbs@mm)
.580"	92 lbs @ 1.500"		288 lbs @ .900"
Coil Bind Height	O.D.	I.D.	Type
.870"	1.100"	.750"	Beehive springs

RETAINER - R7000T-8

Alloy	Traitement	Notes
4340 Chromoly steel	Titanium	Angle 7°

VALVE LOCKS - VL6MMSG-8

Tapper	Notes
7°	For single groove valves



TOOLS & PARTS LIST

- Valves Seat Inserts
- Valves Seal Drivers
- Reamers



AV&V Valve Seat Inserts

AV&V valve seats are made from a highly alloyed material and feature the following :

- Easy oversize identification by the part number
- Easy to machine with cutter and stone

- Resists severe pounding and dissipates heat better
- Work-hardens during running-in
- Radiused for easier installation



Valves Seats	
Description	
O.D.	I.D.
1.630"	1.180"
Thickness	
.385"	

AVI630

- Machining may be required
- For all cylinder head models
- High chrome steel alloy



Valves Seats	
Description	
O.D.	I.D.
1.757"	1.410"
Thickness	
.430"	

AVI757

- Machining may be required
- For all cylinder head models
- High chrome steel alloy



Valves Seats	
Description	
O.D.	I.D.
1.757"	1.371"
Thickness	
.315"	

AVI757S

- No machining required
- For all cylinder head models
- High chrome steel alloy
- Ideal size for 900 and 1000 Iron Head Sportster® (Exhaust)



Valves Seats	
Description	
O.D.	I.D.
1.820"	1.375"
Thickness	
.450"	

AVI820

- Machining may be required
- For all cylinder head models
- High chrome steel alloy
- Universal repair seat



Valves Seats		AVI880
Description		<ul style="list-style-type: none">• Machining may be required• For all cylinder head models• High chrome steel alloy• Universal repair seat
O.D.	I.D.	
1.880"	1.435"	
Thickness		
.410"		



Valves Seats		AVI882
Description		<ul style="list-style-type: none">• Machining may be required• For all cylinder head models• High chrome steel alloy
O.D.	I.D.	
1.882"	1.530"	
Thickness		
.410"		



Valves Seats		AVI944
Description		<ul style="list-style-type: none">• No machining required• High chrome steel alloy• Stock replacement for Shovel Head® (exhaust)
O.D.	I.D.	
1.944"	1.575"	
Thickness		
.400"		



Valves Seats		AVI945
Description		<ul style="list-style-type: none">• Machining may be required• For all cylinder head models• High chrome steel alloy• Universal repair seat
O.D.	I.D.	
1.945"	1.375"	
Thickness		
.440"		

AV&V Valve Seat Inserts

AV&V valve seats are made from a highly alloyed material and feature the following :

- Easy oversize identification by the part number
- Easy to machine with cutter and stone

- Resists severe pounding and dissipates heat better
- Work-hardens during running-in
- Radiused for easier installation



Valves Seats		AV2008
Description		<ul style="list-style-type: none">• Machining may be required• For all cylinder head models• High chrome steel alloy
O.D.	I.D.	
2.008"	1.610"	
Thickness		
.440"		



Valves Seats		AV2040
Description		<ul style="list-style-type: none">• Machining may be required• For all cylinder head models• High chrome steel alloy
O.D.	I.D.	
2.040"	1.700"	
Thickness		
.425"		



Valves Seats		AV2068
Description		<ul style="list-style-type: none">• No machining required• For all cylinder head models• High chrome steel alloy• Ideal size for 1000 Iron Head Sportster® (Intake)
O.D.	I.D.	
2.068"	1.750"	
Thickness		
.315"		



Valves Seats		AV2070
Description		<ul style="list-style-type: none">• Machining may be required• For all cylinder head models• High chrome steel alloy
O.D.	I.D.	
2.070"	1.610"	
Thickness		
.460"		



Valves Seats		AV2132
Description		<ul style="list-style-type: none">• Machining may be required• For all cylinder head models• High chrome steel alloy• Best suited for AV&V 1990 and 1980-7TGB (intake valves)
O.D.	I.D.	
2.132"	1.800"	
Thickness		
.460"		



Valves Seats		AV2135
Description		<ul style="list-style-type: none">• No machining required• For all cylinder head models• High chrome steel alloy• Replacement valve seat for Shovel Head® (intake)
O.D.	I.D.	
2.135"	1.750"	
Thickness		
.400"		



Valves Seats		AV2163
Description		<ul style="list-style-type: none">• Machining may be required• For all cylinder head models• High chrome steel alloy
O.D.	I.D.	
2.163"	1.750"	
Thickness		
.410"		



Valves Seats		AV2257
Description		<ul style="list-style-type: none">• Machining may be required• For all cylinder head models• High chrome steel alloy• Universal repair seat
O.D.	I.D.	
2.257"	1.550"	
Thickness		
.500"		

AV&V Valve Seal Drivers

- Allows easier and more precise installation of both O.E. or viton valve seals.
- Valve seal is installed in centerline with the guide.
- Prevent costly comeback caused by a loose seal.



Aluminium		VSD6MM	
Description			
I.D.	Driving Section I.D.	Handle	OAL
.238"	.400"	.990"	3.500"
Application			
For 6mm valve seals (V-Rod®)			



Aluminium		VSD7MM	
Description			
I.D.	Driving Section I.D.	Handle	OAL
.277"	.480"	.990"	3.500"
Application			
For all 7mm valve seals (Twin Cam®, Evo® and Sportster®)			



Aluminium		VSD312	
Description			
I.D.	Driving Section I.D.	Handle	OAL
.315"	.515"	.990"	3.500"
Application			
For all 5/16 valve seals (Twin Cam®, Evo® and Sportster®)			



Aluminium		VSD343	
Description			
I.D.	Driving Section I.D.	Handle	OAL
.343	.540"	.990"	3.500"
Application			
For all 11/32 valve seals (Iron-Sportster®)			



Aluminium		VSD378	
Description			
I.D.	Driving Section I.D.	Handle	OAL
.380'	.550"	.990"	3.500"
Application			
For all 3/8 valve seals (Shovel Head®)			



Plastic	VSDR
Application	
For OE Style seal K312420	



Plastic	VSDW
Application	
For OE Style seal K375625 (Shovel Head® 1340)	

AV&V Solid Carbide Valve Guide Reamers

- Specially designed by AV&V for use with manganese bronze material, these unique self centering reamers feature a unique design with a long pilot for a perfect alignment with the valve guide while reaming.
- Do not use with cast iron guides
- You will ream a valve guide to exact dimension without any taper in 4 to 5 seconds only.
- Guides will last longer than with the honing method because there is no crosshatch left after reaming.
- One size allows you to fit both intake & exhaust if you use AV&V valves & guides.



Reamer	VGRC6MM	
Diameter	Material	Application
6MM	Solid Carbide	6MM stem valve (V-ROD®)



Reamer	VGRC2766	
Diameter	Material	Application
.2766"	Solid Carbide	*7MM Twin Cam® and Sportster®



Reamer	VGRC3110	
Diameter	Material	Application
.3110"	Solid Carbide	**Evolution®, Twin Cam® and Sportster®



Reamer	VGRC3115	
Diameter	Material	Application
.3115"	Solid Carbide	**Evolution®, Twin Cam® and Sportster®



Reamer	VGRC3120	
Diameter	Material	Application
.3120"	Solid Carbide	Evolution®, Twin Cam® and Sportster®



Reamer	VGRC3777	
Diameter	Material	Application
.3777"	Solid Carbide	For OE 3/8 stem valves PAN® / SHOVEL®



Reamer	VGRC3782	
Diameter	Material	Application
.3782"	Solid Carbide	***For AV&V 3/8 stem valves PAN® / SHOVEL®

- * Harley-Davidson® 7MM valve guides I.D. are actually 7MM+.001" (.2766")
- ** Recommended size for all Evolution® / Twin Cam® AV&V 5/16 valves
- *** Recommended size for all Pan Head® / Shovel Head® AV&V valves

Part Numbers - Valves

PART NUMBER	TYPE	HEAD DIA.	OVERALL LENGTH	STEM DIA.	COATING	TIP LENGTH	GROOVE	PAGE
AV34-6TGC	Exhaust	34.4MM	116.9MM	.2346"	Chrome	.070"	Triple	78
AV35-6TGC	Exhaust	35.4MM	116.9MM	.2346"	Chrome	.070"	Triple	78
AV40-6TGC	Intake	40MM	116.28MM	.2351"	Chrome	.070"	Triple	78
AV41-6TGC	Intake	41MM	116.28MM	.2351"	Chrome	.070"	Triple	78
AV1355	Exhaust	1.355"	4.635"	.3106"	Black nitride	.200"	Single	47
AV1480	Exhaust	1.480"	4.640"	.3106"	Black nitride	.200"	Single	44
AV1485	Exhaust	1.485"	4.560"	.3106"	Black nitride	.200"	Single	44-47
AV1485-7TGB	Exhaust	1.485"	4.680"	.2755"	Black nitride	.085"	Triple	46
AV1575-7TGB	Exhaust	1.575"	4.560"	.2755"	Black nitride	.085"	Triple	15
AV1575-7TGC	Exhaust	1.575"	4.560"	.2755"	Chrome	.085"	Triple	15
AV1576-7TGB	Exhaust	1.575"	4.620"	.2755"	Black nitride	.085"	Triple	48
AV1580	Exhaust	1.580"	4.575"	.3106"	chrome	.200"	Single	44
AV1585	Exhaust	1.585"	4.505"	.3106"	Black nitride	.200"	Single	6
AV1590	Intake	1.590"	4.550"	.3108"	Black nitride	.200"	Single	48
AV1610D	Exhaust	1.610"	4.510"	.3106"	Black nitride	.200"	Single	6
AV1610S	Exhaust	1.610"	4.565"	.3106"	Black nitride	.200"	Single	6
AV1610-7TGB	Exhaust	1.610"	4.545"	.2755"	Black nitride	.085"	Triple	12
AV1610-7TGC	Exhaust	1.610"	4.545"	.2755"	Chrome	.085"	Triple	12
AV1650	Exhaust	1.650"	4.515"	.3106"	Black nitride	.200"	Single	6
AV1700A	Exhaust	1.700"	4.510"	.3106"	Black nitride	.2205"	Single	7-28
AV1700BC	Exhaust	1.700"	5.700"	.3106"	Chrome	---	---	33
AV1700C	Exhaust	1.700"	4.445"	.3106"	Chrome	.200"	Single	7-29
AV1700U	Exhaust	1.700"	4.655"	.3106"	Black nitride	.200"	Single	7-29
AV1720	Intake	1.720"	4.560"	.3108"	Black nitride	.200"	Single	45
AV1720B	Intake	1.720"	4.480"	.3108"	Black nitride	.200"	Single	44-48
AV1725-7TGB	Intake	1.725"	4.580"	.2757"	Black nitride	.085"	Triple	46
AV1770	Intake	1.770"	4.480"	.3108"	Black nitride	.200"	Single	45
AV1810-7TGB	Intake	1.810"	4.455"	.2757"	Black nitride	.085"	Triple	15
AV1810-7TGC	Intake	1.810"	4.455"	.2757"	Chrome	.085"	Triple	15
AV1811-7TGB	Intake	1.810"	4.480"	.2757"	Black nitride	.085"	Triple	46
AV1813	Intake	1.812"	4.485"	.3108"	Chrome	.200"	Single	45
AV1850-7TGB	Intake	1.850"	4.455"	.2757"	Black nitride	.085"	Triple	12
AV1850-7TGC	Intake	1.850"	4.455"	.2757"	Chrome	.085"	Triple	12
AV1851	Intake	1.851"	4.485"	.3108"	Chrome	.200"	Single	45
AV1851-7TGB	Intake	1.851"	4.520"	.2757"	Black nitride	.085"	Triple	47
AV1900	Intake	1.900"	4.440"	.3108"	Black nitride	.200"	Single	7-29
AV1900-7TGB	Intake	1.900"	4.445"	.2757"	Black nitride	.085"	Triple	13
AV1900-7TGC	Intake	1.900"	4.445"	.2757"	Chrome	.085"	Triple	13
AV1900S	Intake	1.900"	4.415"	.3108"	Black nitride	.200"	Single	8-30
AV1940	Intake	1.940"	4.440"	.3108"	Black nitride	.200"	Single	8-30
AV1980-7TGB	Intake	1.980"	4.455"	.2757"	Black nitride	.085"	Triple	13
AV1990	Intake	1.990"	4.440"	.3108"	Black nitride	.200"	Single	8-30
AV2020	Intake	2.020"	4.490"	.3108"	Chrome	.200"	Single	9-31
AV2020A	Intake	2.020"	4.440"	.3108"	Black nitride	.200"	Single	8-30
AV2020S	Intake	2.020"	4.510"	.3108"	Black nitride	.200"	Single	9-31
AV2060LC	Intake	2.060"	4.510"	.3108"	Chrome	.200"	Single	9-31

Part Numbers - Valves

PART NUMBER	TYPE	HEAD DIA.	OVERALL LENGTH	STEM DIA.	COATING	TIP LENGTH	GROOVE	PAGE
AV2100	Intake	2.100"	4.475"	.3108"	Black nitride	.200"	Single	9-31
AV2100BC	Intake	2.100"	5.700"	.3108"	Chrome	---	---	10-32
AV2100S	Intake	2.100"	4.570"	.3108"	Chrome	.200"	Single	10-32
AV2100U	Intake	2.100"	4.590"	.3108"	Black nitride	.200"	Single	10-32
AV2150	Intake	2.150"	4.480"	.3108"	Chrome	.200"	Single	10-32
AV2200BC	Intake	2.200"	5.700"	.3108"	Chrome	---	---	11-33
HD03	Exhaust	1.561"	3.505"	.3389"	Black nitride	.155"	Single	74
HD04	Intake	1.812"	3.615"	.3108"	Black nitride	.200"	Single	74
HD05	Intake	1.940"	3.615"	.3108"	Black nitride	.200"	Single	74
HD07	Exhaust	1.750"	3.830"	.3764"	Black nitride	.200"	Single	60-68
HD09	Intake	1.955"	3.875"	.3770"	Black nitride	.200"	Single	60
HD10	Exhaust	1.615"	4.525"	.3106"	Black nitride	.200"	Single	34
HD11	Intake	1.845"	4.440"	.3108"	Black nitride	.200"	Single	14-34
HD12	Exhaust	1.570"	4.525"	.3106"	Black nitride	.200"	Single	14

Part Numbers - Valve Guides

PART NUMBER	TYPE	O.D.	I.D.	Oversize	Overall Length	PAGE
UVG7MM	---	.740"	.273"	---	2.700"	17-50
UVG308	---	.740"	.308"	---	2.700"	17-36-50
UVG375	---	.740"	.375"	---	2.700"	62-69
UVG6MM	---	.620"	5.9MM		2.375"	80
VG5100C	Intake	.5645"	.308"	Std	1.750"	75
VG5101C	Intake	.5655"	.308"	.001"	1.750"	75
VG5102C	Intake	.5665"	.308"	.002"	1.750"	75
VG5103C	Intake	.5675"	.308"	.003"	1.750"	75
VG5200C	Exhaust	.5645"	.338"	Std	1.750"	75
VG5201C	Exhaust	.5655"	.338"	.001"	1.750"	75
VG5202C	Exhaust	.5665"	.338"	.002"	1.750"	75
VG5203C	Exhaust	.5675"	.338"	.003"	1.750"	75
VG5300	Exhaust - Intake	.5660"	.375"	Std	1.900"	61-68
VG5301	Exhaust - Intake	.5670"	.375"	.001"	1.900"	61-68
VG5302	Exhaust - Intake	.5680"	.375"	.002"	1.900"	61-68
VG5303	Exhaust - Intake	.5690"	.375"	.003"	1.900"	61-68
VG5304	Exhaust - Intake	.5700"	.375"	.004"	1.900"	61-68
VG5305	Exhaust - Intake	.5710"	.375"	.005"	1.900"	61-68
VG5306	Exhaust - Intake	.5720"	.375"	.006"	1.900"	61-68
VG5308	Exhaust - Intake	.5740"	.375"	.008"	1.900"	61-68
VG5310	Exhaust - Intake	.5760"	.375"	.010"	1.900"	61-68
VG5315	Exhaust - Intake	.5810"	.375"	.015"	1.900"	61-68
VG5325	Exhaust - Intake	.5910"	.375"	.025"	1.900"	61-68
VG5400	Exhaust - Intake	.6250"	.375"	Std	1.900"	61
VG5401	Exhaust - Intake	.6260"	.375"	.001"	1.900"	61
VG5402	Exhaust - Intake	.6270"	.375"	.002"	1.900"	61

Part Numbers - Valve Guides

PART NUMBER	TYPE	O.D.	I.D.	Oversize	Overall Length	PAGE
VG5403	Exhaust - Intake	.6280"	.375"	.003"	1.900"	61
VG5404	Exhaust - Intake	.6290"	.375"	.004"	1.900"	61
VG5405	Exhaust - Intake	.6300"	.375"	.005"	1.900"	61
VG5406	Exhaust - Intake	.6310"	.375"	.006"	1.900"	61
VG5410	Exhaust - Intake	.6350"	.375"	.010"	1.900"	61
VG5415	Exhaust - Intake	.6400"	.375"	.015"	1.900"	61
VG5425	Exhaust - Intake	.6500"	.375"	.025"	1.900"	61
VG5500	Exhaust - Intake	.5625"	.308"	Std	2.250"	16-35-49
VG5501	Exhaust - Intake	.5635"	.308"	.001"	2.250"	16-35-49
VG5502	Exhaust - Intake	.5645"	.308"	.002"	2.250"	16-35-49
VG5503	Exhaust - Intake	.5655"	.308"	.003"	2.250"	16-35-49
VG5504	Exhaust - Intake	.5665"	.308"	.004"	2.250"	16-35-49
VG5525	Exhaust - Intake	.5875"	.308"	.025"	2.250"	16-35-49
VG5600	Intake	.5625"	.308"	Std	2.100"	16-35-49
VG5600S	Intake	.5625"	.308"	Std	2.100"	16-35-49
VG5600-5S	Intake	.5630"	.308"	.0005"	2.100"	16-35-49
VG5601	Intake	.5635"	.308"	.001"	2.100"	16-35-49
VG5601S	Intake	.5635"	.308"	.001"	2.100"	16-35-49
VG5602	Intake	.5645"	.308"	.002"	2.100"	16-35-49
VG5603	Intake	.5655"	.308"	.003"	2.100"	16-35-49
VG5604	Intake	.5665"	.308"	.004"	2.100"	16-35-49
VG5605	Intake	.5675"	.308"	.005"	2.100"	16-35-49
VG5606	Intake	.5685"	.308"	.006"	2.100"	16-35-49
VG5610	Intake	.5725"	.308"	.010"	2.100"	16-35-49
VG5625	Intake	.5875"	.308"	.025"	2.100"	16-35-49
VG5700	Exhaust	.5625"	.308"	Std	2.100"	16-35-49
VG5700S	Exhaust	.5625"	.308"	Std	2.100"	16-35-49
VG5700-5S	Exhaust	.5630"	.308"	.0005"	2.100"	16-35-49
VG5701	Exhaust	.5635"	.308"	.001"	2.100"	16-35-49
VG5701S	Exhaust	.5635"	.308"	.001"	2.100"	16-35-49
VG5702	Exhaust	.5645"	.308"	.002"	2.100"	16-35-49
VG5703	Exhaust	.5655"	.308"	.003"	2.100"	16-35-49
VG5704	Exhaust	.5665"	.308"	.004"	2.100"	16-35-49
VG5705	Exhaust	.5675"	.308"	.005"	2.100"	16-35-49
VG5706	Exhaust	.5685"	.308"	.006"	2.100"	16-35-49
VG5710	Exhaust	.5725"	.308"	.010"	2.100"	16-35-49
VG5725	Exhaust	.5875"	.308"	.025"	2.100"	16-35-49
VG6600	Intake	.5625"	.273"	Std	2.040"	17-50
VG6601	Intake	.5635"	.273"	.001"	2.040"	17-50
VG6602	Intake	.5645"	.273"	.002"	2.040"	17-50
VG6603	Intake	.5655"	.273"	.003"	2.040"	17-50
VG6604	Intake	.5665"	.273"	.004"	2.040"	17-50
VG6605	Intake	.5675"	.273"	.005"	2.040"	17-50
VG6606	Intake	.5685"	.273"	.006"	2.040"	17-50
VG6610	Intake	.5725"	.273"	.010"	2.040"	17-50
VG6625	Intake	.5875"	.273"	.025"	2.040"	17-50

Part Numbers - Valve Guides

PART NUMBER	TYPE	O.D.	I.D.	Overize	Overall Length	PAGE
VG6700	Exhaust	.5625"	.273"	Std	2.040"	17-50
VG6701	Exhaust	.5635"	.273"	.001"	2.040"	17-50
VG6702	Exhaust	.5645"	.273"	.002"	2.040"	17-50
VG6703	Exhaust	.5655"	.273"	.003"	2.040"	17-50
VG6704	Exhaust	.5665"	.273"	.004"	2.040"	17-50
VG6705	Exhaust	.5675"	.273"	.005"	2.040"	17-50
VG6706	Exhaust	.5685"	.273"	.006"	2.040"	17-50
VG6710	Exhaust	.5725"	.273"	.010"	2.040"	17-50
VG6725	Exhaust	.5875"	.273"	.025"	2.040"	17-50
VG7000	Exhaust-Intake	.3955"	5.9MM	Std	1.950"	80
VG7001	Exhaust-Intake	.3965"	5.9MM	.001"	1.950"	80
VG7002	Exhaust-Intake	.3975"	5.9MM	.002"	1.950"	80
VG7003	Exhaust-Intake	.3985"	5.9MM	.003"	1.950"	80

Part Numbers - Valve Seals

PART NUMBER	TYPE	Stem Dia.	Seal Section O.D.	PAGE
K312420-4	O.E. Style	5/16"	.421"	18-36-51
K312530-4	O.E. Style	5/16"	.531"	18-36-51-75
K341530-4	O.E. Style	11/32"	.530"	75
K375562	O.E. Style	3/8"	.562"	62-69
K375625-4	O.E. Style	3/8"	.625"	62
V312421-4	Viton	5/16"	.421"	18-36-51
V312531-4	Viton	5/16"	.531"	18-36-51
V6MM-4	Viton	6MM	.335"	80
V7MM-4	Viton	7MM	.562"	18-51
V7MMOE-4	Viton	7MM	.562"	18-51

Part Numbers - Valve Spring Kits

PART NUMBER	MAX. RECOM- MENDED LIFT	SEAT PRESSURE	OPEN PRESSURE	COIL BIND HEIGHT	O.D.	I.D.	Type	PAGE
VSK470	.470"	155 lbs @ 1.375"	300 lbs @ .980"	.850"	1.640"	1.010"	Double	64-70
VSK530	.530"	155 lbs @ 1.455"	320 lbs @ .980"	.980"	1.640"	.970"	Double	64-70
VSK590	.625"	175 lbs @ 1.455"	350 lbs @ .980"	.850"	1.625"	.965"	Double	65-71
VSK600S	.600"	155 lbs @ 1.885"	405 lbs @ 1.260"	1.080"	1.460"	.790"	Double	20-38-53
VSK600T	.600"	155 lbs @ 1.885"	405 lbs @ 1.260"	1.080"	1.460"	.790"	Double	20-38-53
VSK650S	.650"	185 lbs @ 1.860"	460 lbs @ 1.160"	1.080"	1.460"	.790"	Double	21-39-54
VSK650T	.650"	185 lbs @ 1.860"	460 lbs @ 1.160"	1.080"	1.460"	.790"	Double	21-39-54
VSK675T	.675"	185 lbs @ 1.860"	460 lbs @ 1.160"	1.080"	1.460"	.790"	Double	22-40-55
VSK6000	.600"	165 lbs @ 1.860"	384 lbs @ 1.250"	1.200"	---	---	Beehive	22-40-55
VSK6000-7SG	.600"	165 lbs @ 1.860"	384 lbs @ 1.250"	1.200"	---	---	Beehive	24-57
VSK6500	.650"	178 lbs @ 1.860"	385 lbs @ 1.200"	1.150"	---	---	Beehive	23-40-56
VSK6500-7SG	.650"	178 lbs @ 1.860"	385 lbs @ 1.200"	1.150"	---	---	Beehive	24-57
VSK7000TG	.580"	92 lbs @ 1.500"	288 lbs @ .900"	.870"	1.100"	.750"	Beehive	81
VSK7000SG	.580"	92 lbs @ 1.500"	288 lbs @ .900"	.870"	1.100"	.750"	Beehive	81
VSK7000SGT	.580"	92 lbs @ 1.500"	288 lbs @ .900"	.870"	1.100"	.750"	Beehive	82

Part Numbers - Springs

PART NUMBER	MAX. RECOM- MENDED LIFT	SEAT PRESSURE	OPEN PRESSURE	COIL BIND HEIGHT	O.D.	I.D.	Type	PAGE
S470-4	.470"	155 lbs @ 1.375"	300 lbs @ .980"	.850"	1.640"	1.010"	Double	64-70
S530-4	.530"	155 lbs @ 1.455"	320 lbs @ .980"	.980"	1.640"	.970"	Double	64-70
S590-4	.625"	175 lbs @ 1.455"	350 lbs @ .980"	.850"	1.625"	.965"	Double	64-71
S600-4	.600"	155 lbs @ 1.885"	405 lbs @ 1.260"	1.080"	1.460"	.790"	Double	20-38-53
S650-4	.650"	185 lbs @ 1.860"	460 lbs @ 1.160"	1.080"	1.460"	.790"	Double	21-39-54
S675-4	.675"	185 lbs @ 1.860"	460 lbs @ 1.160"	1.080"	1.460"	.790"	Double	22-40-55
S6000-4	.600"	165 lbs @ 1.860"	384 lbs @ 1.250"	1.200"	---	---	Beehive	22-24-40-55-57
S6500-4	.650"	178 lbs @ 1.860"	385 lbs @ 1.200"	1.150"	---	---	Beehive	23-24-41-56-57
S7000-8	.580"	83 lbs @ 1.500"	280 lbs @ .900"	.870"	1.100"	.750"	Beehive	81-82

Part Numbers - Retainer

PART NUMBER	ALLOY	TRAITEMENT	ANGLE	PAGE
R311CS-4	4140 Chromely Steel	Black Oxyde	10°	20-21-38-39-53-54
R311CT-4	Titanium	---	10°	20-21-22-38-39-40-53-54-55
R530-4	4140 Chromely Steel	Black Oxyde	15°	64-65-70-71
R6000-4	4140 Chromely Steel	Black Oxyde	9°	22-40-55
R60007SG-4	4140 Chromely Steel	Black Oxyde	7°	24-57
R6500-4	4140 Chromely Steel	Black Oxyde	9°	23-24-40-56-57
R7000S-8	4140 Chromely Steel	Black Oxyde	7°	81
R7000T-8	Titanium	---	7°	82

Part Numbers - Lower Collar

PART NUMBER	THICKNESS	O.D.	I.D.	ALLOY	PAGE
LSC530-4	.055" / .0180"	1.495"	.755"	Heat Treated Steel	64-65-70-71
LSC600-4	.040"	1.418"	.562"	Heat Treated Steel	20-21-22-38-39-40-53-54-55
LSC6000-4	.050"	1.425"	.565"	Heat Treated Steel	22-24-40-55-57
LSC6500-4	.040"	1.485"	.565"	Heat Treated Steel	23-24-41-56-57

Part Numbers - Valve Locks

PART NUMBER	STEM	GROOVE	USAGE	TAPPER	PAGE
VL6MMSG-8	6MM	Single	V-Rod	7°	81-82
VL6MMTGC-8	6MM	Triple	V-Rod	7°	81
VL7MMSG-4	7MM	Single or Triple	Beehive Spring	7°	24-57
VL7MMSGC-4	7MM	Single or Triple	Beehive Spring	9°	24-57
VL311A-4	5/16"	---	Double Spring	Jumbo 10°	20-21-22-38-39-40-53-54-55
VL311C-4	5/16"	---	Beehive Spring	9°	22-23-40-41-55-56
VL375-4	5/16"	---	Double Spring	Jumbo 15°	64-65-70-71

Part Numbers - Valve Spring Shims

PART NUMBER	THICKNESS	O.D.	I.D.	ALLOY	PAGE
VSS5015-20	.015"	1.480"	.600"	Heat Treated Steel	25-42-58
VSS5030-20	.030"	1.480"	.600"	Heat Treated Steel	25-42-58
VSS6022-20	.022"	1.010"	1.441"	Heat Treated Steel	25-42-58

Part Numbers - Valve Seat Inserts

PART NUMBER	THICKNESS	O.D.	I.D.	ALLOY	PAGE
AV1630	.385"	1.630"	1.180"	High Chrome Steel	84
AV1757	.430"	1.757"	1.410"	High Chrome Steel	84
AV1757S	.315"	1.757"	1.371"	High Chrome Steel	84
AV1820	.450"	1.820"	1.375"	High Chrome Steel	84
AV1880	.410"	1.880"	1.435"	High Chrome Steel	85
AV1882	.410"	1.882"	1.530"	High Chrome Steel	85
AV1944	.400"	1.944"	1.575"	High Chrome Steel	85
AV1945	.440"	1.945"	1.375"	High Chrome Steel	85
AV2008	.440"	2.008"	1.610"	High Chrome Steel	86
AV2040	.425"	2.040"	1.700"	High Chrome Steel	86
AV2068	.315"	2.068"	1.750"	High Chrome Steel	86
AV2070	.460"	2.070"	1.610"	High Chrome Steel	86
AV2132	.460"	2.132"	1.800"	High Chrome Steel	87
AV2135	.400"	2.135"	1.750"	High Chrome Steel	87
AV2163	.410"	2.163"	1.750"	High Chrome Steel	87
AV2257	.500"	2.257"	1.550"	High Chrome Steel	87

Part Numbers - Valve Seal Drivers

PART NUMBER	I.D.	DRIVING SECTION I.D.	HANDLE	OAL	ALLOY	PAGE
VSD6MM	.238"	.400"	.990"	3.500"	Aluminum	88
VSD7MM	.277"	.480"	.990"	3.500"	Aluminum	88
VSD312	.315"	.515"	.990"	3.500"	Aluminum	88
VSD343	.343"	.540"	.990"	3.500"	Aluminum	88
VSD378	.380"	.550"	.990"	3.500"	Aluminum	89
VSDR	---	---	---	---	Plastic	89
VSDW	---	---	---	---	Plastic	89

Part Numbers - Solid Carbide Valve Guide Reamers

PART NUMBER	DIAMETER	MATERIAL	PAGE	PART NUMBER	DIAMETER	MATERIAL	PAGE
VGRC6MM	6MM	Solid Carbide	90	VGRC3120	.3120"	Solid Carbide	90
VGRC2766	.2766"	Solid Carbide	90	VGRC3777	.3777"	Solid Carbide	90
VGRC3110	.3110"	Solid Carbide	90	VGRC3782	.3782"	Solid Carbide	90
VGRC3115	.3115"	Solid Carbide	90				

Part Numbers - Compression Release Valves

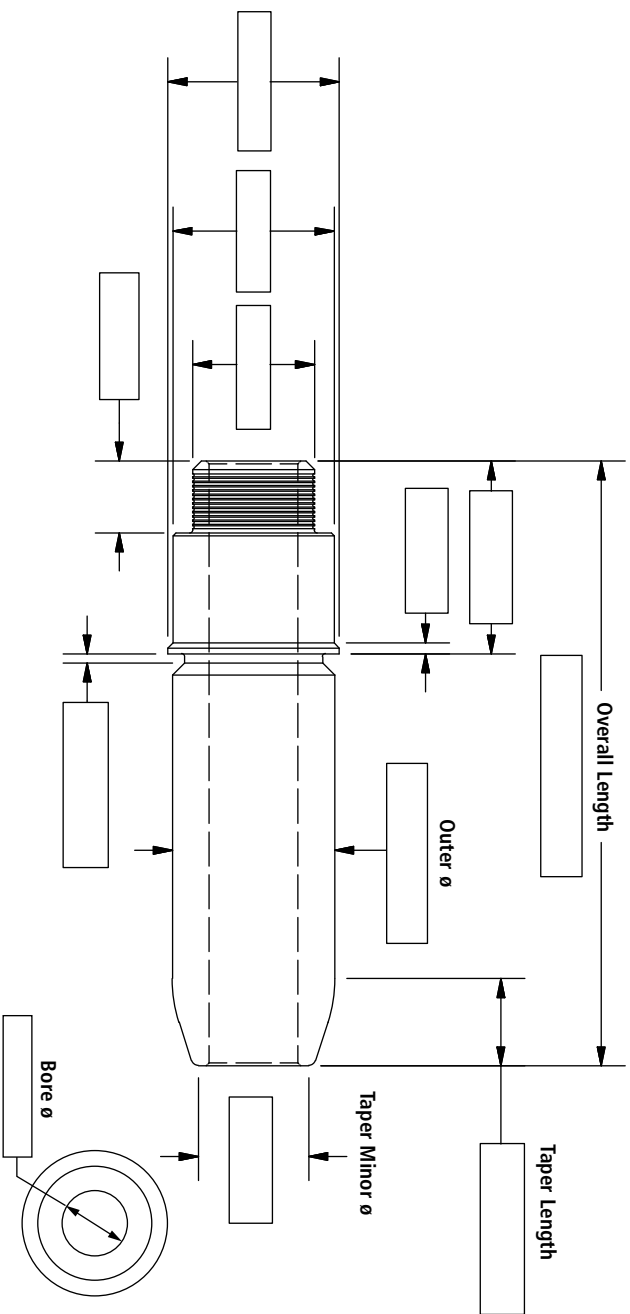
PART NUMBER	PROTRUSION	THREAD SECTION	THREAD	PAGE
JCR 10A	1.05"	.350"	M10x1	19-37-52-63
JCR 10B	1.38"	.350"	M10x1	19-37-52-63
JCR 10D	1.25"	.500"	M10x1	19-37-52-63



CUSTOM GUIDE ORDER FORM

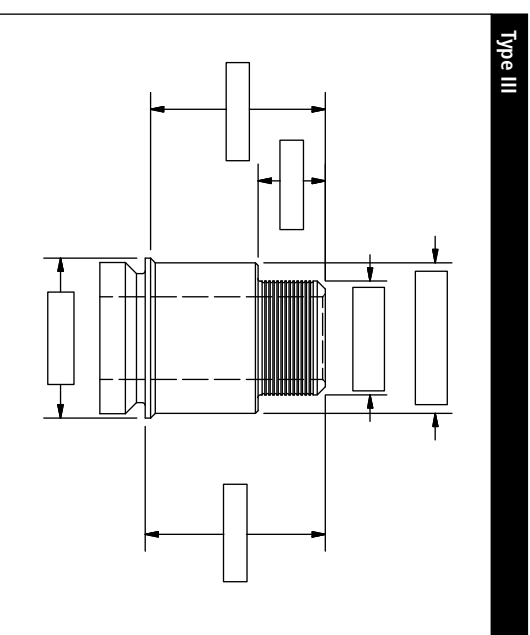
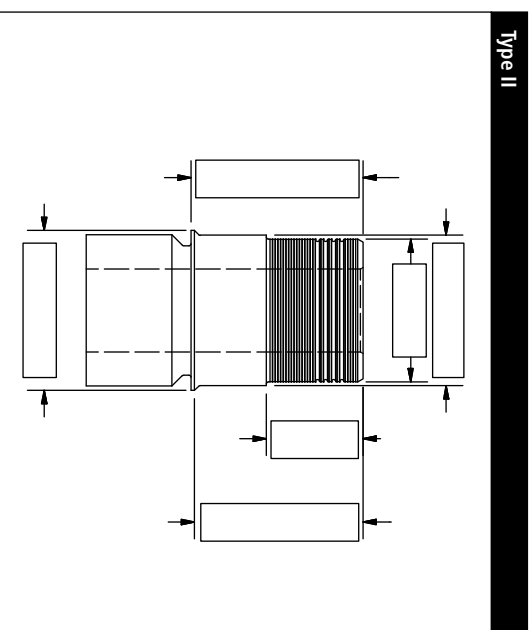
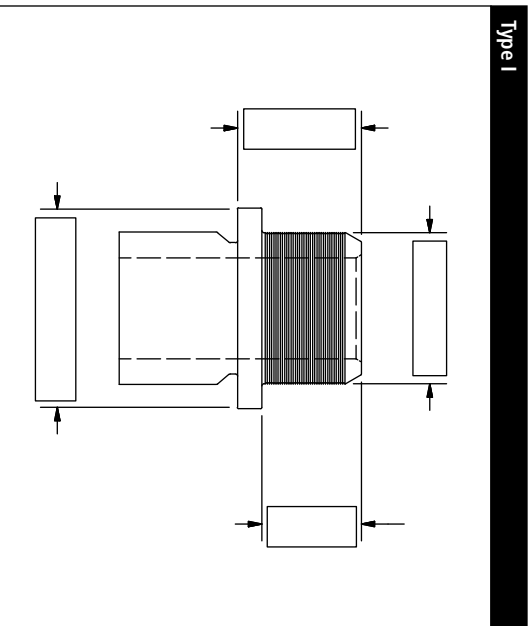
T 450.647.6650 F 450.647.1650
 info@av-v.com www.av-v.com

Make	Model	Disp.	Years
------	-------	-------	-------



Part Number	
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Customer Information	
Company	
Contact	
Phone	
Fax	
E-mail	
Date	
Material	<input type="checkbox"/> Cast Iron <input type="checkbox"/> Manganese
Note	








T 450.647.6650 **F** 450.647.1650
info@av-v.com **www.av-v.com**

[illegible]

Part Number	Blank Part Number
Customer Information	
Company	
Contact	
Phone	
Fax	
E-mail	
Date	
Material	<input type="checkbox"/> S.S. <input type="checkbox"/> Ti <input type="checkbox"/> Orther :
Note	

Groove Dimension			
			
	Radius Groove	Square Groove	Triple Groove
Groove Location			
Groove Minor ϕ			
Groove Width			
Groove Radius		N/A	
Groove Spacing	N/A	N/A	

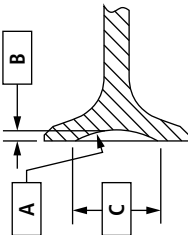
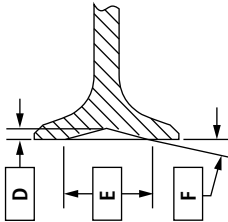
Groove Location is measured from the tip of the valve to the center of the radius or to the top of the square groove (for the triple groove it is measured from the tip of the valve to the center of the middle radius).

The diagram illustrates a shaft with a groove. Dimensions are labeled as follows:

- A**: Undercut
- B**: Undercut Length
- C**: Groove Location
- D**: Groove σ
- E**: Groove Width
- F**: Groove Radius

The formula for the stress concentration factor E is given as:

$$E = 2\sqrt{2F \frac{(A+D)}{(A-D)} - (A+D)^2}$$

Dish Dimensions		Radius Dish		Angle Dish	
	A - Dish Radius	B - Dish Depth	D - Dish Depth	E - Dish Width	F - Dish Angle
					

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- HD
- H-D
- Heritage Softail
- Screamin' Eagle SOftail
- Sportster
- Twin Cam 88
- Twin Cam 88B
- Twin Cam 96
- Twin Cam 96B
- Tri Glide

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It is the sole and exclusive responsibility of the user to determine the suitability of the product for his or her use, and the user shall assume all personal injury risk and legal, liability and all other obligations, duties and risks associated therewith. AV&V™ parts are intended for the very experienced off-road riders only.

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WARRANTY

All AV&V™ merchandise and services are offered for racing use only. AV&V™ warrants to the original purchaser that the racing components listed in this catalog are manufactured by us and free from defects in material and workmanship under normal use and service. Our obligation under this warranty shall be limited to the repair or exchange of any part(s) which may prove defective under normal use and service within 30 days from date of installation by the original purchaser, and which our examination shall disclose to our satisfaction to be defective.



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