

WHY DO YOU NEED C.H.E. VALVE GUIDES?



In one word: Performance. CHE valve guides use proprietary bronze alloys that exhibit excellent thermal conductivity and wear characteristics – but that’s just the start. In an industry where the typical bronze valve guide is around .004 total indicator reading (T.I.R.), CHE uses its own tooling to produce valve guides that are .001 T.I.R. or less.

Using material with predictable and consistent expansion rates allows you to run tighter stem-to-guide clearance – as tight as .0006! A tighter valve guide keeps unwanted lateral valve movement under control, which in turn reduces wear on the guide, seat and valve face. That may not sound like a significant benefit to you – but consider this: an engine that wears slower continues to make power longer. For example, a Championship Winston Cup team reported that, before a 500 mile race their engine was making 785 horsepower and after the race the engine was making 710 horsepower. However, after installing CHE valve guides, the team reported that the engine was typically making 750 horsepower after 500 miles. Any way you slice it, it is a clear advantage over the competition, which is why CHE valve guides have remained one of the racing world’s best kept secrets.

ISN'T A SEAT JUST A SEAT?

All professional engine builders will tell you that a valve seat’s function is more than just a place for the valve to land – it is a heat sink. When intake and exhaust valves are subjected to the extreme temperatures of the combustion chamber, the only chance they have to get rid of the heat is by discharging it through the guide and seat. That is why CHE valve seats are made from proprietary alloys and are typically thicker than competitive seats, so they can extract as much heat from the valve as possible.

For after market performance applications, CHE offers their own ductile iron seats that are both denser and more evenly structured than competitive seats. They are hardened to RC 32-38 or 40-45 and then OD ground to $\pm .0002$ inch diameter and surface ground to $\pm .001$ inch thickness.

For competition applications, CHE offers 4 of their own specially-formulated copper alloys. These materials have been developed for the kind of temperature cycling that intake valve seats typically experience and have thermal conductivity characteristics far superior to ductile iron. 2 of these materials were designed to resist the extreme exhaust temperatures generated by racing engines and features thermal conductivity that is 15% greater than that of beryllium copper. These materials have been designed to minimize valve bounce at a high RPM, and have a rate of expansion very close to that of the aluminum used in the casting of aftermarket cylinder heads. Any angle, multiple angles, radius and multiple radii can be machined inside the valve seat to suit the customer’s specific application.

Want to know more about how C.H.E. Precision valve guides and seats can improve the performance and longevity of your racing engines? Call us at (805) 499-8885 or email: sales@cheprecision.com.



“Quality Isn’t Expensive – It’s Priceless”

Manufacturing

By using state of the art CNC machining equipment, CHE can manufacture components efficiently and repeatedly with unparalleled accuracy. You can be sure you will get a CHE “PRECISION” part manufactured here in the USA!



Materials

CHE uses the finest materials available today. With 50-years of industry experience, CHE has developed its own proprietary material that has revolutionized the industry by setting a new standard for wear and performance.

Research & Development

Testing and Developing is part of this industry. CHE goes to great lengths to continually research and develop products that will ultimately benefit the end user. From Spintron & Dyno testing to racing, you can be sure you will have the very best components available.



Quality Control

“Quality Isn’t Expensive – It’s Priceless” There is a lot to be said about this quote. If you have a component in your engine of less quality, it could cost you much more. CHE Precision prides itself on performance and customer satisfaction.



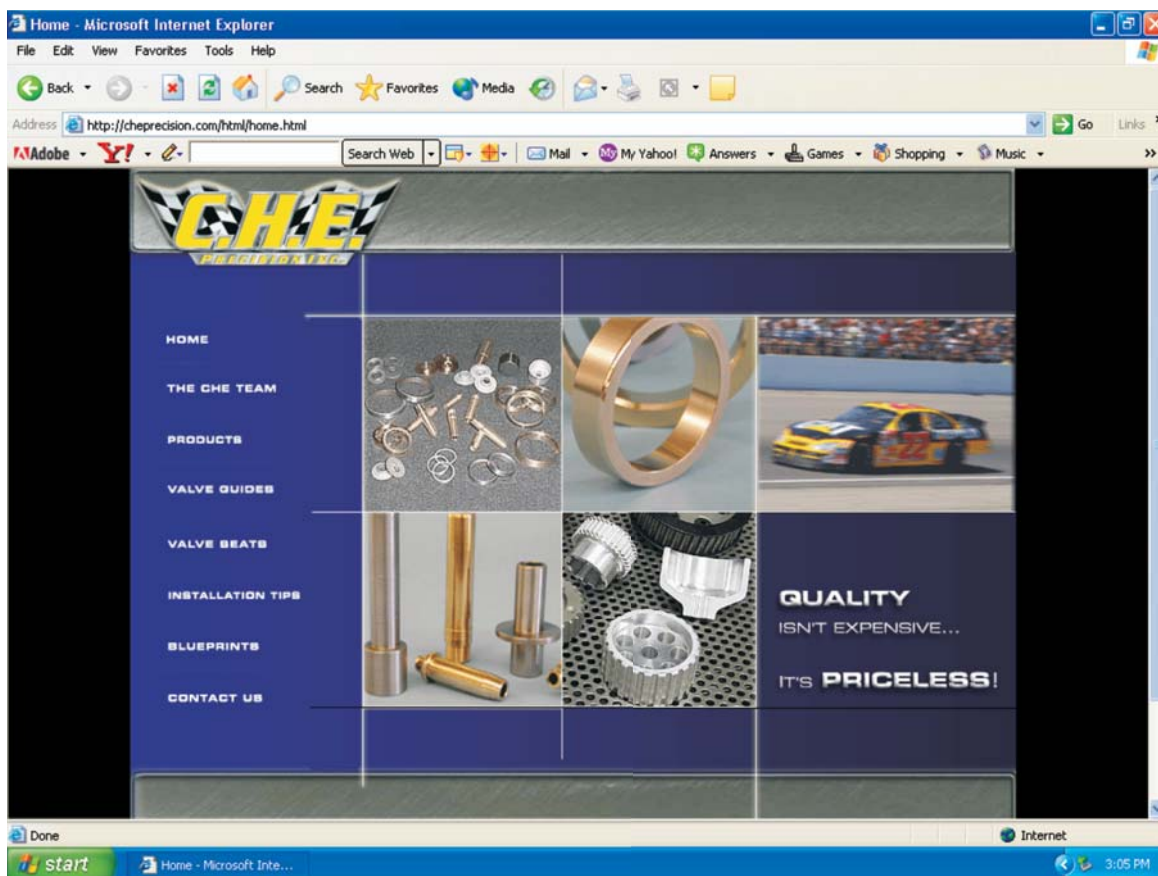
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Visit us on the Web at: www.cheprecision.com





“Quality Isn’t Expensive – It’s Priceless”

Valve Guides

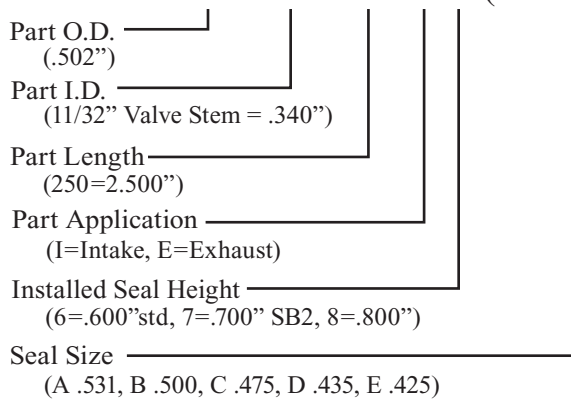


Valve guides can be manufactured from a variety of materials, but CHE’s **Proprietary Blended Bronze Alloys** have extraordinary wear resistance and greater thermal properties than all other bronze alloys tested. This material is excellent for extreme temperatures and high RPM engines. Our guides are manufactured for longevity and performance. Using our **Proprietary Blended Bronze Alloy** materials in valve guides allows for a more predictable and consistent expansion rate. This will allow you to run tighter stem-to-guide clearances as tight as 0.0006”. A tighter valve keeps unwanted lateral valve movement under control, which in turn reduces wear on the guide, seat and valve face.

6mm Intake (C,D or E)	7mm Intake (B,C or D)	5/16" Intake (A or B)	5/16" Exhaust (A or B)	11/32" Intake (A or B)	11/32" Exhaust (A or B)
502-235-250-I-6	502-274-200-I-6	502-309-200-I-6	502-309-200-E-6	502-340-250-I-6	502-340-200-E-6
502-235-250-I-7	502-274-225-I-6	502-309-235-I-6	502-309-212-E-6	502-340-200-I-6	502-340-220-E-6
502-235-260-I-6	502-274-235-I-6	502-309-260-I-6	502-309-220-E-6	502-340-220-I-6	502-340-240-E-6
503-235-260-I-7	502-274-250-I-6	502-309-260-I-7	502-309-250-E-6	502-340-240-I-6	502-340-250-E-6
503-235-250-I-6	502-274-250-I-7	503-309-220-I-6	503-309-250-E-7	502-340-250-I-6	503-340-200-E-7
503-235-260-I-6	502-274-260-I-6	503-309-220-I-7	503-309-200-E-6	502-340-260-I-6	503-340-200-E-6
	503-274-260-I-7	503-309-250-I-6	503-309-220-E-6	503-340-200-I-7	503-340-220-E-6
6mm Exhaust (C,D or E)	503-274-250-I-6	503-309-250-I-7	503-309-250-E-6	503-340-200-I-6	503-340-250-E-6
502-235-220-E-6	503-274-260-I-6	504-309-250-I-6	504-309-250-E-7	503-340-220-I-6	504-340-200-E-7
502-235-220-E-7	504-274-260-I-7	504-309-250-I-7	504-309-220-E-6	503-340-250-I-6	504-340-200-E-6
	520-274-250-I-6	520-309-250-I-7	513-309-200-E-6	504-340-200-I-7	504-340-220-E-6
	520-274-260-I-6		545-309-200-E-6	504-340-250-I-6	504-340-250-E-6
			545-309-220-E-6	505-340-250-I-6	505-340-250-E-6
Guide Blanks	7mm Exhaust (B,C or D)			513-340-250-I-6	513-340-200-E-6
562-274-300-Blanks	502-274-220-E-6			545-340-200-I-6	545-340-200-E-6
625-309-300-Blanks	502-274-220-E-7			545-340-210-I-6	545-340-220-E-6
750-340-300-Blanks	502-274-250-E-7			545-340-220-I-6	546-340-200-E-6
	502-274-260-E-7			546-340-220-I-6	546-340-220-E-6
				547-340-220-I-6	

Valve Guide Part Numbering Index

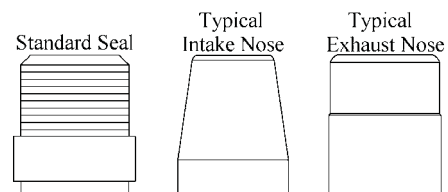
502-340-250-I-6-(ABCD or E)



Installation Tech Tip!

- Press fitment of .002" is recommended.

The use of adhesives or sealants is 'not' recommended as they can inhibit heat transfer.



CHE Precision can custom machine any valve guide to your specific application. Refer to our Valve Guide order work sheet on Page 10 & 11.



“Quality Isn’t Expensive – It’s Priceless”

Valve Seats

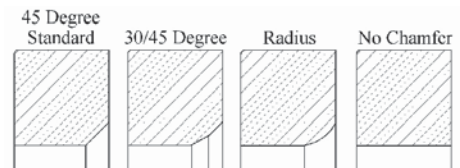
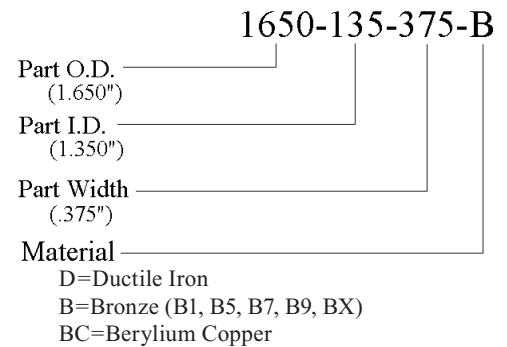


CHE’s **Proprietary Blended Bronze Alloys** have been developed specifically with valve seats in mind. They have extraordinary wear resistance and greater thermal properties than all other bronze alloys tested. These materials are excellent for extreme temperatures as seen in high horsepower applications. These work especially well in Nitrous Oxide and Turbo applications.

CHE also offers Ductile Iron and Beryllium Copper valve seats. All of our seats offer ultra tight tolerances with key dimensions held to within ± 0.0002 ” and finishes better than 16Ra.

Intake (Bronze)	Exhaust (Bronze)	Intake (Iron)	Exhaust (Iron)
2200-181-375-B	1650-135-375-B	2200-160-312-D	1650-135-375-D
2210-181-375-B	1650-135-400-B	2200-181-375-D	1660-135-375-D
2220-181-375-B	1660-135-375-B	2210-181-312-D	1670-135-375-D
2230-181-375-B	1660-135-400-B	2210-181-375-D	1680-135-375-D
2240-181-375-B	1670-136-375-B	2220-181-312-D	1680-135-400-D
2250-181-375-B	1670-136-400-B	2220-181-375-D	1690-135-375-D
2250-181-400-B	1680-137-375-B	2230-181-312-D	1690-135-400-D
2250-165-400-B	1680-137-400-B	2230-181-375-D	1700-135-375-D
2250-165-500-B	1690-137-400-B	2240-181-312-D	1710-135-375-D
2250-181-500-B	1690-137-500-B	2240-181-375-D	1720-135-375-D
2260-181-375-B	1700-137-375-B	2250-181-312-D	1760-135-375-D
2260-181-400-B	1700-135-400-B	2250-181-375-D	1850-135-375-D
2260-181-500-B	1700-137-500-B	2260-181-312-D	2000-135-375-D
2270-181-375-B	1710-137-375-B	2260-181-375-D	2100-160-425-D
2270-181-400-B	1710-137-400-B	2270-181-312-D	2130-160-450-D
2280-181-375-B	1720-137-400-B	2270-181-375-D	2150-160-500-D
2280-181-400-B	1750-137-375-B	2280-181-375-D	2170-160-500-D
2280-165-400-B	1750-137-450-B	2290-181-375-D	2190-160-500-D
2280-181-500-B	1780-137-375-B	2300-200-375-D	
2290-181-375-B	2000-160-375-B	2360-200-375-D	
2290-181-400-B	2100-160-500-B	2450-200-375-D	
2290-165-400-B		2500-200-375-D	
2290-181-500-B		2510-210-375-D	
2290-165-400-B		2520-210-500-D	
2290-181-500-B		2550-210-375-D	
2510-210-500-B		2550-210-500-D	
2610-210-500-B		2600-210-500-D	
2710-210-500-B			

Valve Seat Part Numbering Index



Installation Tech Tip!

- Press fits for Iron Seats:
Iron Heads = 0.006"
Alum. Heads = 0.008"
- Press fit for Bronze Seats:
Alum. Heads = 0.006"

The uses of adhesives or sealants are 'not' recommended as they can inhibit heat transfer.

*CHE Precision can custom machine any valve seats to your specific application.
Refer to our Valve Seat order work sheet on Page 12.*



“Quality Isn’t Expensive – It’s Priceless”

Spring Retainers

CHE's retainers have been extensively engineered and tested to perform under the most extreme conditions. Our racing designed titanium spring retainers are the lightest in the industry and have been proven to have less valve bounce at high RPM. This amazing achievement has been accomplished without sacrificing part longevity. From race teams to streetcars, CHE can manufacture the right retainer to fit your application.



Super 7 (Steel)	Super 7 (Titanium)	Top Lock (Titanium)
929-41	929-B-1	1541-G-1
929-B-4	943-B-1	1570-D
943	1040E/1540	1572-ML-B
LS-1-41	1240	JHE-B-1
	1242	JHE-C-1-6
	1541-S7-C	
	1541-S7-2	

CHE Precision can custom machine any Retainer to your specific application. Refer to our Retainer order work sheet on Page 13.

LS Series Rocker Arms



CHE Precision has teamed up with some of the industries top engine builders to come up with one of the most advanced production replacement LS Series rockers available.

The factory production rocker arm works well right out of the box, but CHE Precision found ways to improve upon its reliability. One issue roller rockers inherently have is that they are prone to failure at high RPM. By replacing the roller bearings assembly with CHE’s proprietary material bushing, this will allow the rocker arm to survive the extreme rigors of high RPM race engines. If you are looking for a reliable LS series rocker arm replacement, look no further.



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Spring Cups & Bases



Spring cups and bases from CHE endure the same precision machining as seen with all of our parts. All steel spring cups and bases receive heat treatment, which gives long lasting wear. CHE Precision can manufacture any component to your specific needs. Call us and find out what we can do for you!

Spring Base

SB60-690-155
SB60-735-152
SB60-75-15

Spring Cup

SC1550
SC1655-035
SC1655-065

Lifter Bore Bushings

Introducing CHE Precision Inc. Lifter Bore Bushings that last 2-4 times longer than our competitors. As with all CHE products, if you are searching for precision, quality, and long lasting performance, you will not find a better product anywhere. CHE Precision understands racing needs and can manufacture a lifter bore bushing to your specifications.



Keyed GM (Small Block)

1062-936-199-R
1062-936-199-L
1062-936-199-U

Keyed Ford

1062-936-207-R
1062-936-207-L
1062-936-207-U

Non-Keyed

1002-843-170
1002-874-175
1002-904-175
1062-937-175

Keyed GM (Big Block)

1188-1059-209-R
1188-1059-209-L
1188-1059-209-U

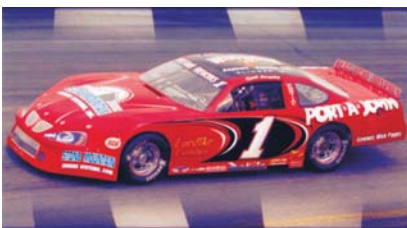
Keyed Dodge

1062-937-199-R
1062-937-199-L
1062-937-199-U

CHE Precision can custom machine any Spring Cup, Base or Lifter Bore Bushing to your specific application. Refer to our ordering work sheet on Pages 14, 15 & 16.

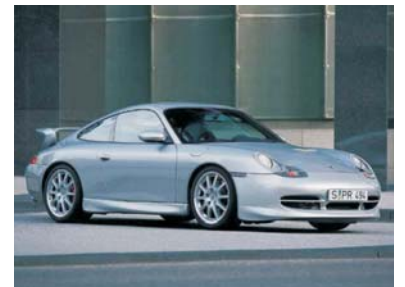
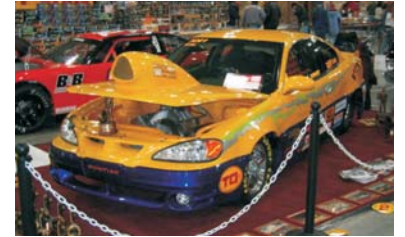
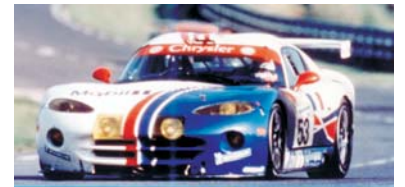


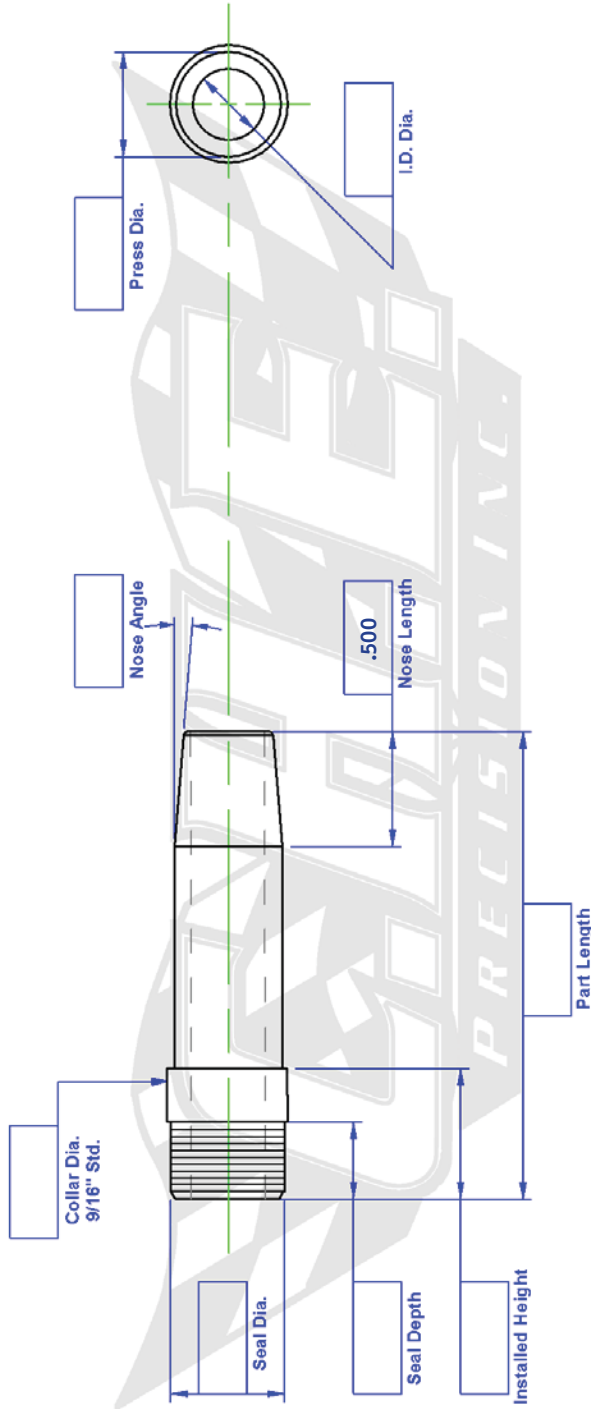
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With over 50 years of real world racing experience, CHE Precision knows what it takes to manufacture world-class valve train components. There isn't an engine built that won't benefit from CHE Precision's manufacturing. From the daily driver, to the all-out race engine, CHE Precision has the part you need.

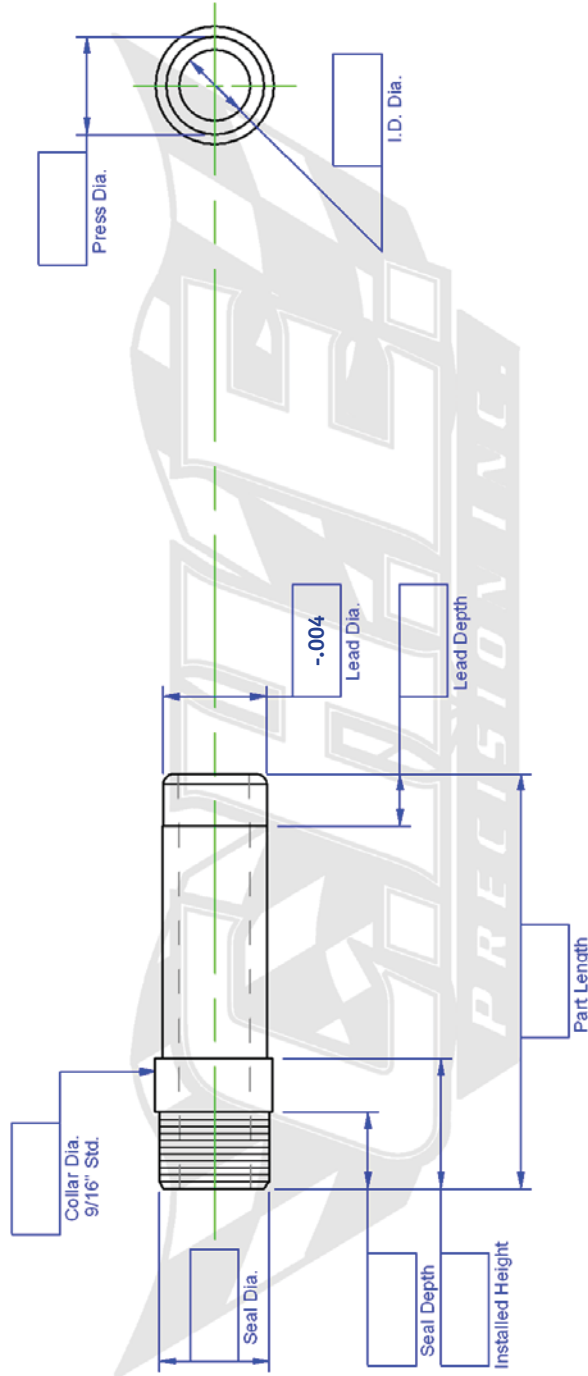
CHE prides itself on its Technical Support team. When engine builders, race teams, and cylinder head manufacturers are in need of technical assistance, they know they can rely on CHE Precision to get the support they need.





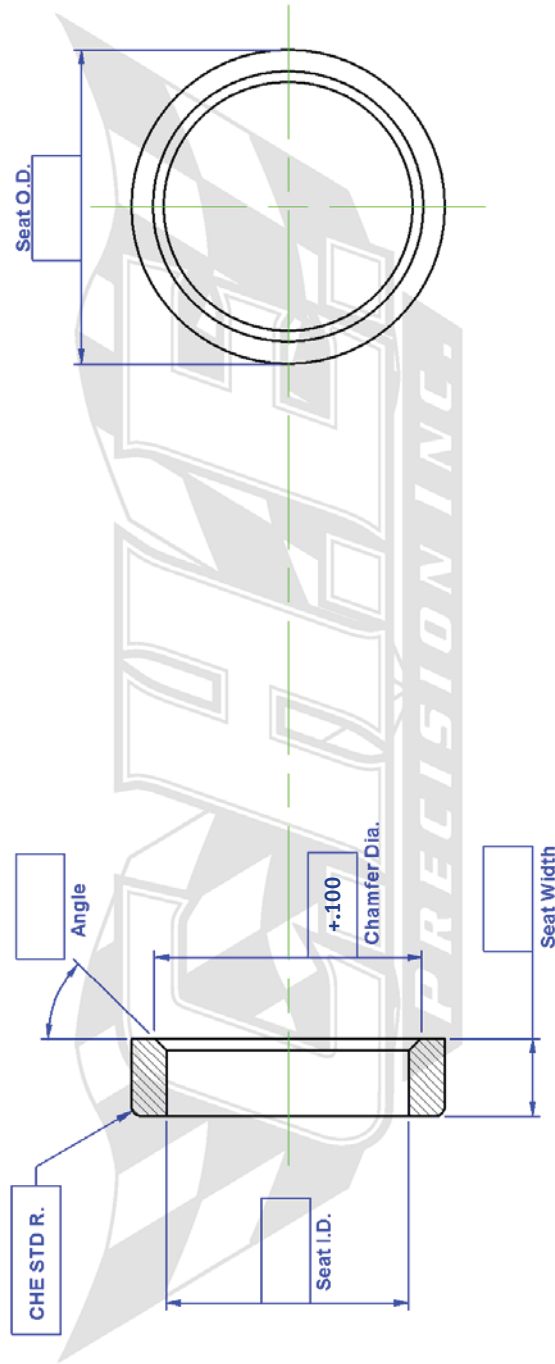
Note: CHE & Part # will be Lazer scribed on part.

CHE Precision Machining	
805-499-8885 fax 805-499-7810 www.cheprecision.com	
This drawing is intended for CHE Precision customers which will allow for their design. Parts designed by the customer that have been manufactured to print shown above are non refundable.	
Customer Information	Part Information
Company Name: _____	Part Number: _____ Qty: _____
Address: _____	Comments: _____
City: _____ State: _____ Zip: _____	Contact: _____
Phone: _____	



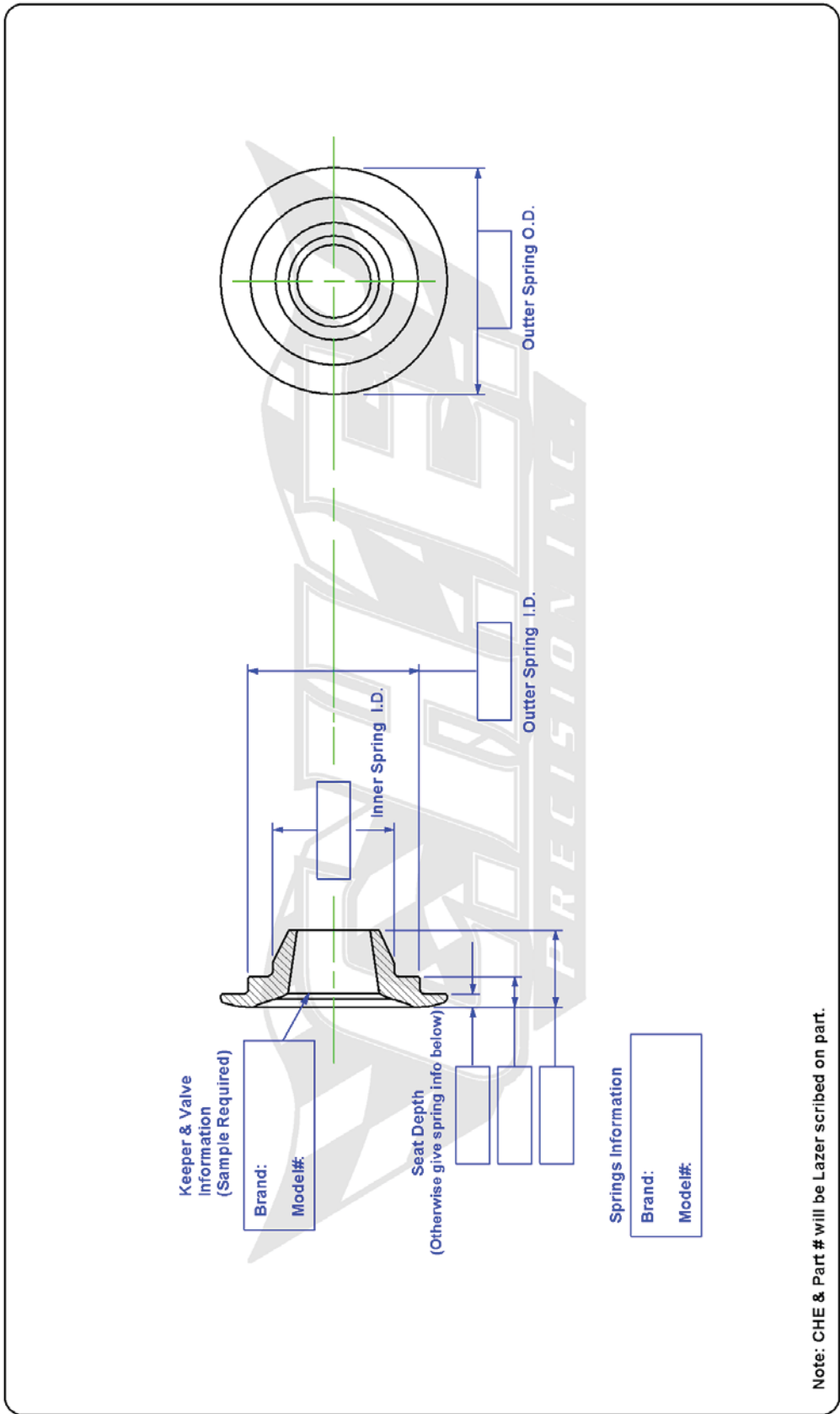
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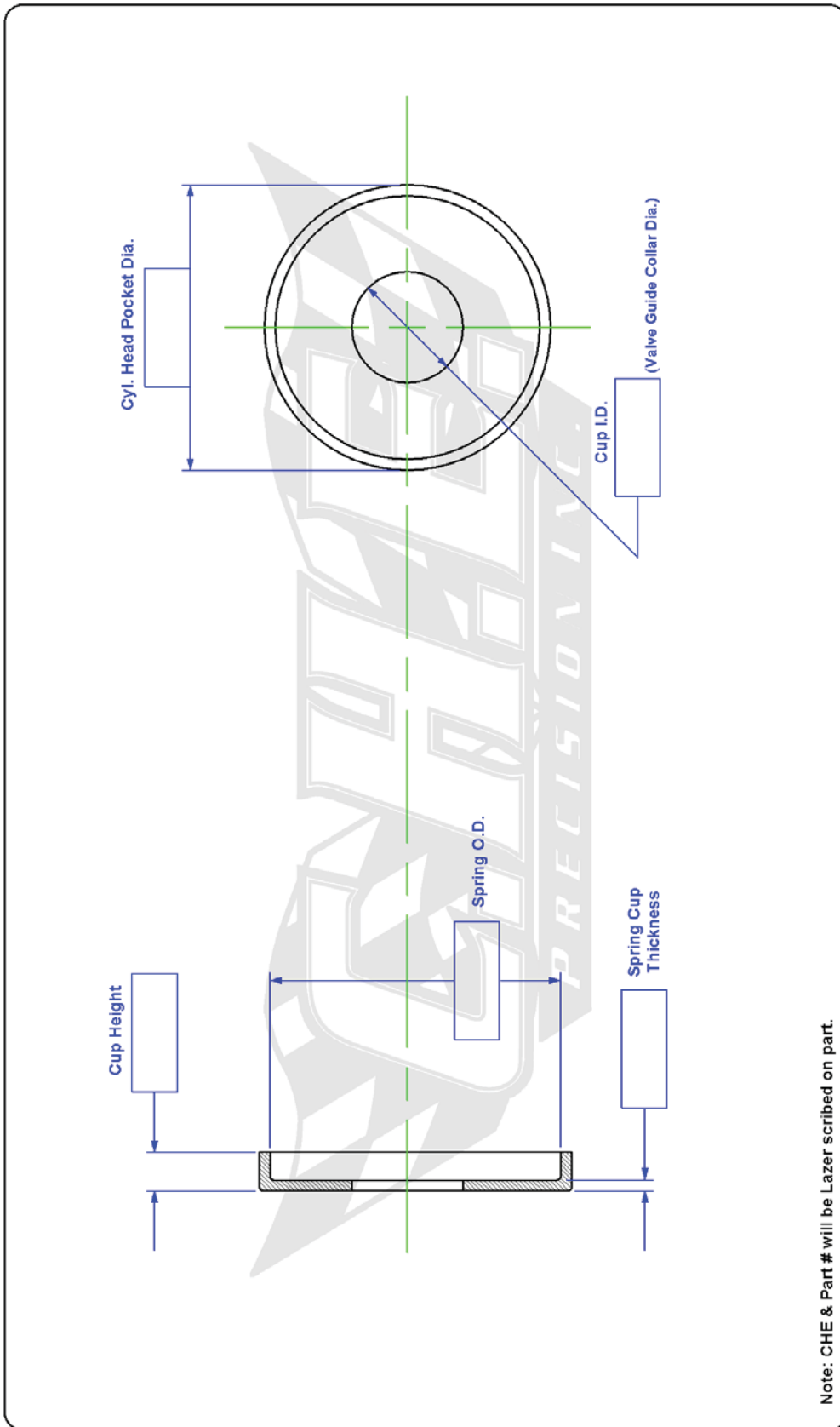
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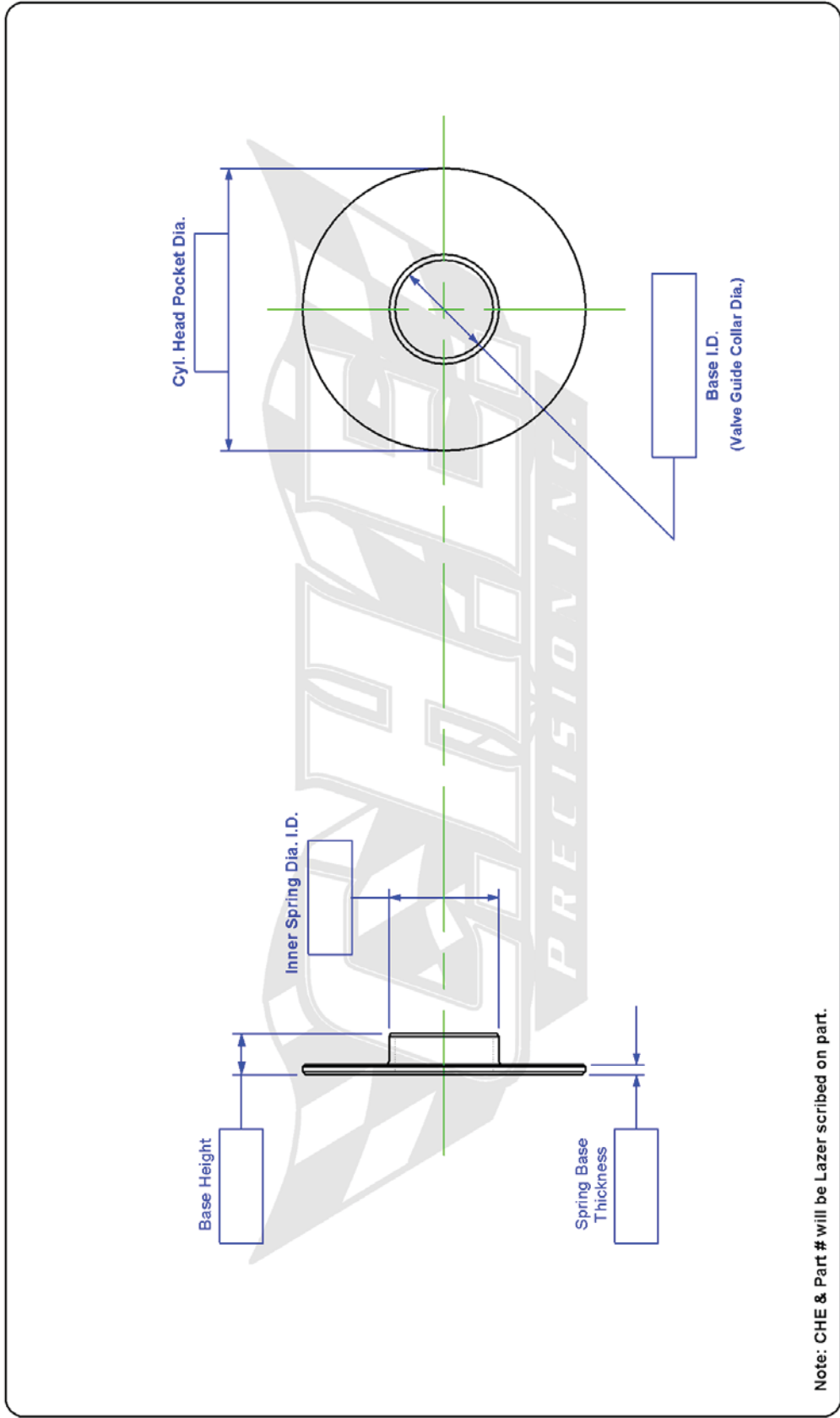
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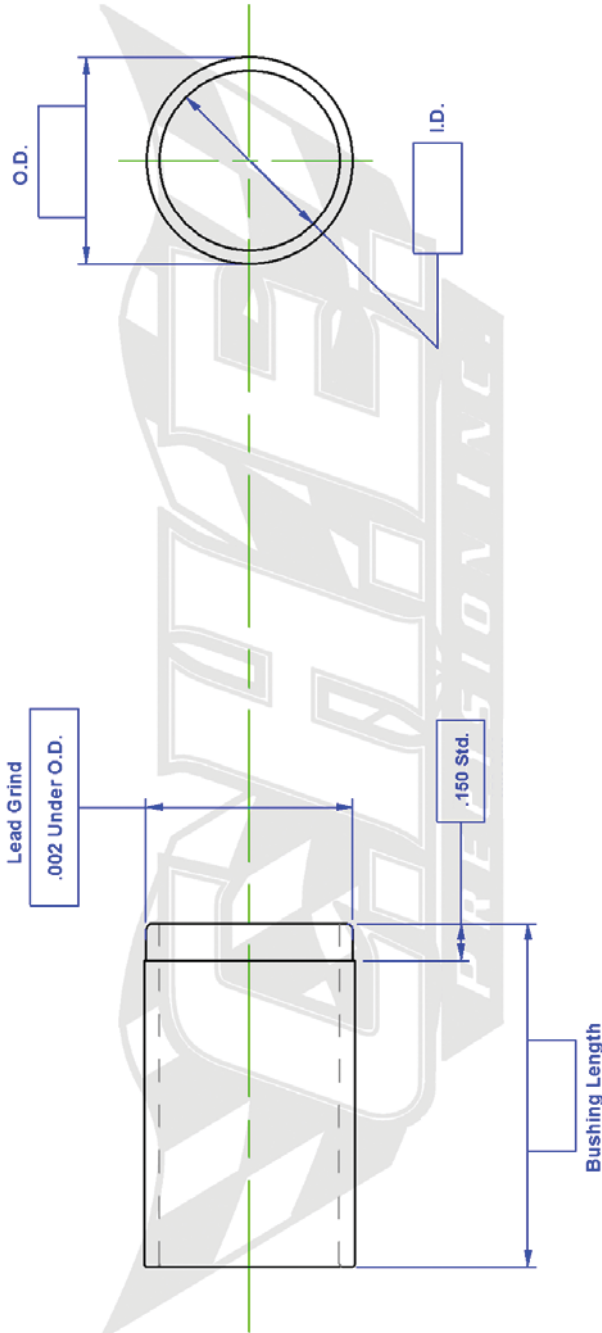


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