

2019 NEW PRODUCT SUPPLEMENT

Dura-Bond



**BEARINGS
SHIMS
BUSHINGS
ENGINE HARDWARE
VALVE SEATS**

QUALITY SINCE 1947

**ISO 9001
CERTIFIED**



This is NOT a full catalog, it is intended to be used in conjunction with the 2014 Engine Parts Catalog.

Please contact Dura-Bond for a complete listing of new parts, application and prices.

Manufacturing began in the spring of 1947 in a small former woodworking plant in Palo Alto, California's industrial section. After destroying 50 percent of early production due to flaws, Dura-Bond finally delivered its first 5,000 unit order and set a goal of 20,000 units a month. Quite simple, they began to fill a growing need. The staff quickly learned that when a mechanic replaced an old camshaft bearing, he hammered the new one into place – requiring force to square the end away. Oftentimes the hammering created nicks along the edge, resulting in a damaged bearing. Dura-Bond's idea was to make it a solid circle of metal, which inserted easily and fit perfectly. The "all-round" design of solid metal soon replaced the interlocking design as an industry standard. The breakthrough meant no oil loss – no seepage from bearing onto shaft.



Though originally designed for replacement purposes in cars and trucks, under the leadership of Francis R. Burke, a Harvard graduate, Dura-Bond cam bearings quickly extended into many specialized applications, such as: marine, farm equipment, antique vehicles, and more. Enduring products have included standard, aluminum overhead, and high performance bearings. More recent additions to the product mix have resulted from the purchasing of a well-respected valve seat manufacturer. In late 1996, Dura-Bond began offering new technology powder metal valve seat inserts with superior machinability and designed for today's varying fuel requirements.



Francis R. Burke

Today over 70 years later, Dura-Bond has grown into a sophisticated 85,000 square foot facility located in Carson City, NV. Its employees are among the most qualified engine rebuilding component technicians in the world. Current production and distribution sources include a long list of distributors, engine rebuilders, and original equipment manufacturers throughout America and abroad. Since its humble beginnings, Dura-Bond's "all-round" camshaft bearing has assumed the enviable position of being the industry's standard against which all others are judged.

Dura-Bond continues in the fine tradition it has developed over 70 years with its employees, customers and vendors. Our customers depend on our quality and innovative products to provide ever-increasing demands to provide solutions. These solutions range from all the basics of just-in-time delivery, quality – ISO 9001 certification, Oliver Wight Class "A" MRP II and competitive pricing, and engineering design.



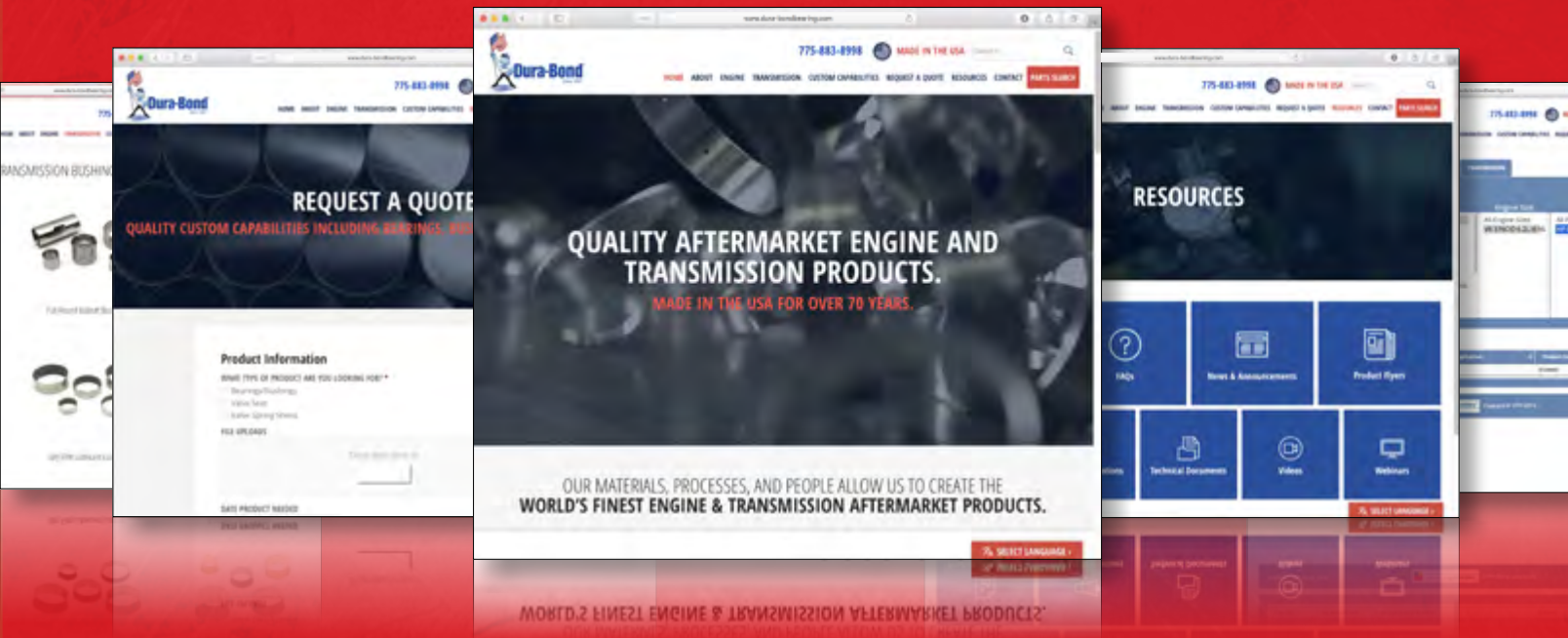
Charles Barnett

According to President/Owner, Charles Barnett, Dura-Bond Bearing Company strives to exceed the exceptional level of quality and service that the company has maintained during the last 70 years. Says Barnett,

"Our commitment to excellence and dedication continues to strengthen our customer relationships. These loyal customers are the reason we are still here, and the reason why we'll be around to see another 70 years."



AFTER A YEAR IN THE MAKING, DURA-BOND IS PROUD TO ANNOUNCE THE RELEASE OF OUR NEW WEBSITE!



We have redesigned it with you in mind, streamlining menus, simplifying navigation, building a responsive layout for all platforms, viewed in any language and providing more resources and information on our products and services.

We encourage everyone to visit and explore the site, discovering the full spectrum of educational content, such as the latest Videos, Webinars, and Technical Support Documents. Download our most recent 2019 New Product Supplement, Part Guides, Catalogs, and Product Informational Flyers. Stay up-to-date with our currently trending News and Product Announcements.

We will continue to expand our resources and our website to deliver the most updated and relevant information for the Aftermarket. Don't forget to sign up to receive our quarterly newsletter.

On Our NEW Site You Will Also Discover:

- World's Finest Engine & Transmission Products
- The all New and Redesigned Part Search Lookup
- Request A Quote
- Frequently Asked Questions
- Distribution Centers, Sales Rep & Territory Listings
- Photo Gallery
- Credit Application
- Employment
- And So Much More . . .

Dura-Bond®
Since 1947

Camshaft Bearing, Bushing, Valve Seat, Valve Spring Shim, Hardware *manufacturer.*

Engineering Solutions Partner.



Dura-Bond Bearing Company is a world leader in camshaft bearings, powder metal valve seats and valve spring shim design and manufacturing. This has been recognized by over 70 years of experience as the standard of the industry, and the internationally recognized ISO9001 and MRP – Oliver Wight Class “A” certifications.

The natural process of matching complimentary valve train components provides solutions that are designed as a system, not as only individual components.

CAM BEARINGS/BUSHINGS – The seamless, 100% machined surface design provides the tightest tolerances in the industry. The centerless ground OD, centerless bored ID results in wall variations of .0004 in., giving the customer increased system design flexibility. Discrete manufacturing lines can supply both high and low volumes economically. We can be a valued strategic partner with our design, development and manufacturing capabilities.



Dura-Bond bimetal bearings are constructed of seamless steel tube with a thin layer of lead based babbitt material. Seamless construction makes installation easy, eliminating breakage and bearing surface interruptions.

Lead based babbitt provides ideal properties for nearly all engine applications. Babbitt's superior embedability, conformability, and anti-seizure characteristics have proven to reduce engine failures that harder bearing materials can cause. Dura-Bond Bearing offers:

- **Oversize and undersize bearings for many applications:** Oversize ODs for line bored blocks. Undersized IDs for cam salvage.
- **Semi-finished IDs for line boring requirements:** Unbored IDs allow line boring after bearing installation.
- **OHC repair bearings:** Provides a method to repair aluminum OHC heads. Repairs scored or seized cam/housings and restores cam alignment.
- **High Performance line for racing applications:** Fatigue life of the bearing is nearly doubled with micro-babbitt, chill cast, and burnished construction.
- **Coated High Performance bearings:** Fluoropolymer coated high performance for maximum fatigue life and improved surface properties.
- **Special small run bearings/bushings for prototype or block salvage**

VALVE SEAT INSERTS – Patented materials and processing of these powder metal valve seats offer excellent machinability, along with low wear and high heat resistance. These inserts have finely dispersed tungsten carbide residing in a matrix of tempered tool steel and special alloy iron particles to provide all the properties an application requires. Special compositions and processing have been developed to perform in the most extreme duty applications. Complete in-house capabilities, from development and tooling to testing, reduces lead time and cost.

SHIMS – Valve seat shims and other applications can be supplied in sizes ranging up to 3.00 in. diameter and .060 in. thick, in hardened or annealed condition. Unique tooling design provides short lead times and low economical run quantities.

HARDWARE – The engine tear down and cleaning process can lead to broken, bent, distorted, or lost service parts. These items can be troubling to any engine rebuilder, especially when they are difficult to obtain. That's why Dura-Bond offers many of the hard to find OEM service parts you need at substantially lower prices.



HARDWARE FINISHING KITS – Most rebuilders know the time and expense of trying to reclaim service parts. A recent study revealed that an average rebuilder could spend up to 15-20 minutes per engine searching for a reclaimed service part. That is why Dura-Bond has introduced a new line of engine hardware finishing kits. These kits include all of the necessary hardware and components

needed to complete a rebuild such as dowel pins, cam bolts, seal housing components, woodruff keys, cam eccentrics, by-pass valves, etc. The engine hardware finishing kits allow rebuilders an easy way to inventory and recoup lost costs on these components. All this adds up to saving time and money.



Our customers have come to expect our diverse, high level of service. They know that beyond the manufacture of component parts we are a valued partner in solving problems. From engineering design, to prototype development, sourcing and assembly work... they depend on us as their partner. Our teams of Design, Materials, Application and Manufacturing Engineers are ready to be a part of your team in simultaneous engineering and integration. We would like to work with you, not just as a “production supplier”, but as a strategic partner. If your requirements range from prototypes to high volume, let Dura-Bond Bearing Company be part of the solution.

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TIME TESTED

[*Quality Camshaft Bearings Since 1947*]

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Lead based babbitt provides ideal properties for nearly all engine applications. Babbitt's superior embedability, conformability, and anti-seizure characteristics have proven to reduce engine failures that harder bearing materials can cause.

The seamless, 100% machined surface design provides the tightest tolerances in the industry. The centerless ground OD, centerless bore ID results in wall variations of .0006 in., giving the customer increased system design flexibility. Discrete manufacturing lines can supply both high and low volumes economically. We can be a valued strategic partner with our design, development and manufacturing capabilities.

If your requirements range from prototypes to high volume, let Dura-Bond Bearing Company be part of the solution.



Cam Bearings Since 1947

RACE PROVEN. TIME TESTED.

Performance Engines Deserve **HIGH PERFORMANCE** Cam Bearings.

If you want to match performance levels and get the most out of your engines, use Dura-Bond "Red Box" High Performance Cam Bearings!

HIGH PERFORMANCE CAM BEARINGS

- Precision Machined - Centerless Ground/Bored
- More Than Double the Fatigue Strength of Standard Bearings - Withstands Racing Spring Loads
- Micro-Babbitt/Grain-Controlled Babbitt/Roller Burnished

"COATED" HIGH PERFORMANCE CAM BEARINGS

- Retains Engine Oil on the Surface, Even Under Extreme Heat and Pressure
- Secondary Lubrication in the Event Momentary Oil Starvation Occurs



Dura-Bond
Since 1947

ENHANCED ENGINEERING SOLUTIONS

For the past 60 years our customers have come to expect our diverse, high level of service. They know that beyond the manufacture of component parts we are a valued partner in solving problems. From engineering design, to prototype development, sourcing & assembly work... they depend on us as their partner. Our team of Design, Materials, Application and Manufacturing Engineers are ready to be a part of your team in simultaneous engineering and integration.



DURA-BOND PROVIDES THE REBUILDER WITH ENHANCED ENGINEERING SOLUTIONS!

- Redesigned sets from O.E. to improve in the aftermarket (i.e. B-12B, CH-11B, CH-12B, CH-18A, F-47B and PD-28B)
- O.D. grooved to increase oil flow and optimize oil inlet locations
- Oversize O.D. Bearings for blue printing blocks
- Undersize I.D. sets for optimizing oil clearance
- Semi-Finished I.D. for line boring requirements

Dura-Bond
Since 1947

SPECIALTY BEARING COMPONENT PROGRESSIVE LISTING BY HOUSING BORE

COMPONENT	MINIMUM HOUSING BORE	LENGTH	MAX. WALL	CAM JOURNAL DIAMETER	COMMENTS
19502L	1.9990	0.740	.0644	1.8692	OD Groove, 3 Oil Holes
19502LT	1.9990	0.740	.0644	1.8692	OD Groove, 3 Oil Holes
BRO-5-3	1.9990	0.860	.0644	1.8692	1 Oil Hole, 1 Pin Hole
19500L	2.1190	0.775	.0841	1.9498	
19501L	2.1190	0.755	.0841	1.9498	OD Groove, 3 Oil Holes
19501LT	2.1190	0.755	.0841	1.9498	OD Groove, 3 Oil Holes
CH-12-3L	2.1190	0.980	.0841	1.9498	OD Groove, 3 Oil Holes
GMP-2-1	2.1190	0.765	.0743	1.9498	
19500LR1	2.1290	0.755	.0891	1.9498	
19501LR1	2.1290	0.755	.0891	1.9498	OD Groove, 3 Oil Holes
CH-12-3LR1	2.1290	0.980	.0891	1.9498	OD Groove, 3 Oil Holes
19500LR2	2.1390	0.755	.0941	1.9498	
19501LR2	2.1390	0.755	.0941	1.9498	OD Groove, 3 Oil Holes
CH-12-3LR2	2.1390	0.980	.0941	1.9498	OD Groove, 3 Oil Holes
19501LR3	2.1490	0.755	.0991	1.9498	OD Groove, 3 Oil Holes
CH-12-3LR3	2.1490	0.980	.0991	1.9498	OD Groove, 3 Oil Holes
GM2125-2	2.2495	0.630	.0620	2.1245	
GM2125-3	2.2495	0.530	.0620	2.1245	
GM2125-11	2.2595	0.855	.0670	2.1245	
GM2125-21	2.2595	0.630	.0670	2.1245	
GM2125-31	2.2595	0.530	.0670	2.1245	
GM2125-41	2.2595	0.980	.0670	2.1245	
GM2125-12	2.2695	0.855	.0720	2.1245	
GM2125-22	2.2695	0.630	.0720	2.1245	
GM2125-32	2.2695	0.530	.0720	2.1245	
GM2125-42	2.2695	0.980	.0720	2.1245	
19500L14	2.2795	0.755	.1644	1.9497	
GM2125-13	2.2795	0.855	.0770	2.1245	
GM2125-43	2.2795	0.980	.0770	2.1245	
GM2132-1	2.2814	0.925	.0739	2.1326	No Oil Hole
GM2132-2	2.2814	1.075	.0739	2.1326	No Oil Hole
60215-P	2.2830	0.775	.0569	2.1663	OD Groove, 3 Oil Holes
GM-55-1	2.2830	0.785	.0575	2.1665	OD Groove, 3 Oil Holes
BRG60115	2.2980	1.000	.0653	2.1664	OD Groove, 3 Oil Holes
GM2300-1	2.2980	0.775	.0653	2.1664	OD Groove, 3 Oil Holes
GM2300-1T	2.2980	0.775	.0653	2.1664	OD Groove, 3 Oil Holes
GM2300-1R1	2.3080	0.775	.0703	2.1663	OD Groove, 3 Oil Holes
GM2300-1R2	2.3180	0.775	.0753	2.1663	OD Groove, 3 Oil Holes
GM2300-1R3	2.3280	0.775	.0803	2.1663	OD Groove, 3 Oil Holes
GM2319-1	2.3180	0.775	.0753	2.1664	OD Groove, 3 Oil Holes
PN2250-1	2.4790	0.750	.0575	2.3630	OD Groove, No Oil Hole
GM-60-1	2.4791	0.750	.0572	2.3620	OD Groove, 3 Oil Holes
GM-60-1A	2.4791	0.750	.0577	2.3620	
GM-60-1W	2.4791	0.750	.0567	2.3620	
60040	2.5000	0.775	.0675	2.3620	
60040T	2.5000	0.775	.0675	2.3620	Coated
CN-1-1	2.5020	0.780	.0704	2.3622	60mm
60220C	2.6745	0.478	.0560	2.5595	
60220H	2.6745	0.580	.0560	2.5595	
60220	2.6745	0.805	.0557	2.5595	



AFTERMARKET BLOCKS

STD.	HI-PERF.	COATED	ENGINE MFG. / DESCRIPTION
	PDP-32	PDP-32T	CHRYSLER - R3 Block
	DT-1	DT-1T DT-1TR1	DART - Little M Block (2.000"Hsg., OD Groove w/ 3 Hole, 120 Degree Spacing) (+.010 OD)
	DT-1	DT-1T DT-1TR1	DART - GMC SHP Block (2.000"Hsg., OD Groove w/ 3 Hole, 120 Degree Spacing) (+.010 OD)
		GMP-2T	DART - Iron Eagle Block (2.120"Hsg., OD Groove w/ 3 Hole, 120 Degree Spacing)
		GMP-12LT	DART - Big "M" Block (2.120"Hsg., OD Groove w/ 3 Hole, 120 Degree Spacing)
		SBF-1T SBF-1R1T	DART - Ford SHP Block (2.204"Hsg., OD Groove w/ 3 Hole, 120 Degree Spacing) (+.010 OD)
		SBF-1T SBF-1R1T	DART - Ford SVO Block (2.204"Hsg., OD Groove w/ 3 Hole, 120 Degree Spacing) (+.010 OD)
	GMP-10	GMP-10T	DART - LS Next Block (2.2980"Hsg., OD Groove w/ 3 Hole, 120 Degree Spacing)
	FP-01 FP-01R1		FORD - Genesis (2.3095"Hsg.) (+.010 OD)
	GMP-3	GMP-3T	GMC - Block (2.125" Cam Journal)
GM-9	GMP-9	GMP-9T	GMC - LSX Block (.700" Wide No. 1-5 Position)
GM-25	GMP-25	GMP-25T	GMC - LSX Block (.775" Wide No. 1-5 Position)
CH-12	CHP-12	CHP-12T	MERLIN - Block
RDC-1	RDCP-1	RDCP-1T	RODECK - Block

Cam Bearing Set - Chrysler



PD-41, PDP-41, PDP-41T

Application:

Chrysler - Hemi Gen. III 5.7L (2009-Up),
6.4L (2011-Up)

Connecting Rod Bushings



RBC-2, RBG-2

Application:

RBC-2 - **Chrysler** 4.0L (241ci) Eng. (2007-2011)
RBG-2 - **GM** 2.8L, 3.5L, 4.2L (Gen. III & IV LS)
Eng. (2006-Up)

HP Cam Bearing Set - GM



CHP-26T

Application:

GM - 6.2L (376ci) LT1 (2014-2018)

Cam Bearing Set - Ford



F-67

Application:

FORD - 6.7L (406ci) Power Stroke Turbo Diesel
(2011-2017)

Interchanges with: OE# BC3Q-6A251-AA

Cam Bearing Set - Cummins



CU-15

Application:
CUMMINS - 3.9L, 5.9L B Series (2003-2006)
Interchanges with: OE# 3940059

Cam Bearing - Cummins



CU-15-1

Application:
CUMMINS - 15.0L (912ci) ISX/QSX (1997-2010)
(7 Bearings Required for Block)
Interchanges with: OE# 4026423

Cam Bearing Set IHC (Navistar)



IN-22

Application:
IHC (Navistar) - 7.6L (466ci) DT466E (2004-2016)
IHC (Navistar) - 8.7L (530ci) DT530E (2004-2006)
Interchanges with: OE# 1875869C92

Cam Bearing Set IHC (Navistar)



IN-23

Application:
IHC (Navistar) - 4.5L (275ci) MaxxForce 5 VT275
(2005-2010)
Interchanges with: OE# 1828127C1

Dura-Bond®

Since 1947

LS Engine Parts Guide

Cam Bearings (Stock Replacement, Block Saver, Cam Saver)

Connecting Rod Bushings

Engine Hardware

Engine Hardware Kits

Valve Seats

Valve Spring Shims



STD	HI-PERF.	HI-PERF. (Coated)	GENERAL APPLICATION DATA	PRODUCT COMMENTS
CAM BEARINGS (STOCK REPLACEMENT, BLOCK SAVER, CAM SAVER)				
CH-10	CHP-10	CHP-10T	LS Cam Bearings 1999-2006 LS1 First Design	Also Available "Cam Saver" (.001, .010, .020, .030 Under I.D.)
	CHP-10R	CHP-10RT	LS Cam Bearings 1999-2006 LS1 First Design	"Block Saver" Position 1,5 (+.020 O.D.); Position 2,3,4 (+.010 O.D.)
CH-23	CHP-23	CHP-23T	LS Cam Bearings 2003-2009 LS1 Second Design LS3, LS7	Also Available "Cam Saver" (.010, .020 Under I.D.)
CH-25	CHP-25	CHP-25T	LS Cam Bearings 2007-2018 LS3, LS7, LS9, LSX	Also Available "Cam Saver" (.001, .002, .003, .010, .020, .030 Under I.D.)
	CHP-25R1	CHP-25R1T	LS Cam Bearings 2007-2018 LS3, LS7, LS9, LSX	"Block Saver" (+.010 O.D., 2.357 Hsg. Non-Stepped)
CH-25R2	CHP-25R2	CHP-25R2T	LS Cam Bearings 2007-2018 LS3, LS7, LS9, LSX	"Block Saver" (+.020 O.D., Hsg. Stepped)
CONNECTING ROD BUSHINGS				
RBG-2			LS Connecting Rod Bushings 2006-Up Gen III & IV	Bronze Bushing
ENGINE HARDWARE				
AW-9016-P			LS Engine Hardware 1999-2018	Cam Retainer
AB-046-P			LS Engine Hardware 1999-2018	Cam Sprocket Bolt (8mm-1.25 x 24mm, Hex)
AB-044-P			LS Engine Hardware 1999-2018	Cam Thrust Plate Bolt (8mm-1.25 x 22mm, Flat Head Torx)
AB-840-P			LS Engine Hardware 1999-2018	Harmonic Balancer Bolt (16mm-2.0 x 103mm, Hex)
AD-258			LS Engine Hardware 1999-2000	Head Dowel (O.D. 0.6250, I.D. 0.523, Length 0.500)
AD-326			LS Engine Hardware 2001-2018	Head Dowel (O.D. 0.6420, I.D. 0.516, Length 0.500)
AP-860-P			LS Engine Hardware 1999-2018	Oil Galley Plug
AP-023-P			LS Engine Hardware 1999-2018	Oil Galley Plug (Front), (41/64)
AB-046-P			LS Engine Hardware 1999-2018	Seal Housing Bolt (8mm-1.25 x 24mm, Hex)
AB-045-P			LS Engine Hardware 1999-2018	Timing Cover Bolt (8mm-1.25 x 30mm, Hex)
AD-047			LS Engine Hardware 1999-2018	Transmission Dowel (O.D. 0.6206, I.D. Solid, Length 1.185)
AK-001-P			LS Engine Hardware 1999-2018	Woodruff Key (3/16 x 1-3/8)
ENGINE HARDWARE KITS				
FKC-6			LS Engine Hardware Kit 1999-2000	(Large Kit)
FKC-6B			LS Engine Hardware Kit 1999-2000	(Small Kit)
FKC-7			LS Engine Hardware Kit 2001-2018	(Large Kit)
FKC-7B			LS Engine Hardware Kit 2001-2018	(Small Kit)
VALVE SEATS				
72443C			LS "Killer Bee" Copper-Infiltrated Valve Seats LS3	(Intake) O.D. 2.1940, I.D. 1.900, Depth .413, Angle 45°
72444C			LS "Killer Bee" Copper-Infiltrated Valve Seats LS3	(Exhaust) O.D. 1.6320, I.D. 1.340, Depth .413, Angle 45°
32034			LS Valve Seats	(Intake) O.D. 2.0441, I.D. 1.732, Depth .406, Angle 45°
31787			LS Valve Seats	(Intake) O.D. 2.2550, I.D. 1.875, Depth .375, Angle 45°
39045			LS Valve Seats	(Exhaust) O.D. 1.6339, I.D. 1.299, Depth .394, Angle 45°
SHIMS				
1230	1230-HP		LS Valve Spring Shims .015" Thickness	1.300 Spring Pocket & .520 Valve Guide Diameters
3230	3230-HP		LS Valve Spring Shims .030" Thickness	1.300 Spring Pocket & .520 Valve Guide Diameters
6230	6230-HP		LS Valve Spring Shims .060" Thickness	1.300 Spring Pocket & .520 Valve Guide Diameters

Dura-Bond[®]

Since 1947

Hemi Engine Parts Guide

Cam Bearings (Stock Replacement, Block Saver, Cam Saver)

Engine Hardware

Valve Seats

392 HEMI



STD	HI-PERF.	HI-PERF. (Coated)	GENERAL APPLICATION DATA	PRODUCT COMMENTS
CAM BEARINGS (STOCK REPLACEMENT, BLOCK SAVER, CAM SAVER)				
PD-31B	PDP-31B	PDP-31BT	Hemi Gen III Cam Bearings 2003-2010	5.7L (2003-08), 6.1L (2005-10)
PD-31BW			Hemi Gen III Cam Bearings 2003-2010	5.7L (2003-08), 6.1L (2005-10) (.001 Under ID) "Cam Saver"
PD-41	PDP-41	PDP-41T	Hemi Gen III Cam Bearings 2009-Up	5.7L (2009-Up), 6.4L (2011-Up)
ENGINE HARDWARE				
AD-466			Hemi Gen III 5.7L, 6.1L, 6.4L	Crank Seal Retainer Carrier Dowel (O.D. 0.3973, I.D. 0.281, Length 0.305)
FP-0009-P			Hemi Gen III 5.7L, 6.1L, 6.4L	Oil Indicator Tube Plug
FP-0008-P			Hemi Gen III 5.7L, 6.1L, 6.4L	Expansion Plug (1-1/4" Shallow Cup)
AD-849			Hemi Gen III 5.7L, 6.1L, 6.4L	Head Dowel (O.D. 0.6313, I.D. 0.500, Length 0.485)
AP-024-P			Hemi Gen III 5.7L, 6.1L, 6.4L	Oil Galley Plug (1/4-18 x .46 Internal Hex, w/Sealant)
AP-003-P			Hemi Gen III 5.7L, 6.1L, 6.4L	Oil Galley Plug (3/8-18 x .46 Internal Hex, w/Sealant)
FP-0007-P			Hemi Gen III 5.7L, 6.1L, 6.4L	Cam Plug (Rear)
SR-570			Hemi Gen III 5.7L, 6.1L, 6.4L	Spring Retainer (Valve Stem Diameter 0.272/0.273)
AD-532			Hemi Gen III 5.7L, 6.1L, 6.4L	Transmission Dowel (O.D. 0.4960, I.D. Solid, Length 0.740)
AK-035-P			Hemi Gen III 5.7L, 6.1L, 6.4L	Woodruff Key (3/16 x 1.072)
ENGINE HARDWARE KITS				
FKP-3			Hemi Gen III 5.7L, 6.1L, 6.4L	Hardware Finishing Kit
VALVE SEATS				
72431			Hemi Gen III (Eagle) Valve Seats	(Intake) O.D. 2.1860, I.D. 1.820, I.D. Taper 2.007, Depth .338, Angle 53.2"
72432C			Hemi Gen III (Eagle) "Killer Bee" Copper-Infiltrated Valve Seats	(Exhaust) O.D. 1.6020, I.D. 1.322, I.D. Taper 1.504, Depth .276, Angle 53.7"

BEARING SET CONTENTS

SET NO.	ENGINE MFG. / DESCRIPTION	CONTENTS	POSITION	HOUSING BORE	LENGTH	MAX WALL
CH-10 .001 und .010 und .020 und .030 und	General Motors - Cam Bearing Set	CH-10-1	1,5	2.3286	0.630	.0799
		CH-10-2	2,4	2.3187	0.630	.0749
		CH-10-3	3	2.3089	0.630	.0700
CH-24 .020 und	General Motors - Cam Bearing Set	CH-24-1	1	2.1766	0.905	.0747
		CH-24-2	2,3	2.1565	0.630	.0646
		CH-24-3	4	2.1766	0.620	.0747
CH-25 .001 und .002 und .003 und .010 und .020 und .030 und	General Motors - Cam Bearing Set	CH-25-1	1,5	2.3482	0.775	.0890
		CH-25-2	2,4	2.3285	0.775	.0799
		CH-25-3	3	2.3088	0.775	.0700
CH-25R2	General Motors - Cam Bearing Set "Block Saver" w/ .020 Oversize OD	CH-25-1R2	1,5	2.3682	0.775	.0990
		CH-25-2R2	2,4	2.3482	0.775	.0890
		CH-25-3R2	3	2.3285	0.775	.0799
CHG-23** .002 und .010 und	General Motors - Balance Shaft Bearing Set	CHG-23-1	Right Rear	1.6253	0.865	.0808
		CHG-23-2	Right Front	1.5969	0.865	.0808
		CHG-23-3	Left Front	1.8672	0.862	.0808
		CHG-23-4	Left Rear	1.8955	0.862	.0808
CHP-10R	General Motors - HP Cam Bearing Set "Block Saver" w/ Oversize OD	CHP-23-1	1,5	2.3470	0.630	.0890
		CHP-10-1	2,4	2.3270	0.630	.0790
		CHP-10-2	3	2.3171	0.630	.0740
CHP-10RT	General Motors - HP Cam Bearing Set "Block Saver" (Coated) w/ Oversize OD	CHP-23-1T	1,5	2.3470	0.630	.0890
		CHP-10-1T	2,4	2.3270	0.630	.0790
		CHP-10-2T	3	2.3171	0.630	.0740
CHP-25R1	General Motors - HP Cam Bearing Set "Block Saver" w/ .010 Oversize OD	CHP-25-1R1	1,2,3,4,5	2.3582	0.775	.0940
CHP-25R1T	General Motors - HP Cam Bearing Set "Block Saver" (Coated) w/ .010 Oversize OD	CHP-25-1R1T	1,2,3,4,5	2.3582	0.775	.0940
CHP-25R2	General Motors - HP Cam Bearing Set "Block Saver" w/ .020 Oversize OD	CHP-25-1R2	1,5	2.3682	0.775	.0990
		CHP-25-2R2	2,4	2.3482	0.775	.0890
		CHP-25-3R2	3	2.3285	0.775	.0799
CHP-25R2T	General Motors - HP Cam Bearing Set "Block Saver" (Coated) w/ .020 Oversize OD	CHP-25-1R2T	1,5	2.3682	0.775	.0990
		CHP-25-2R2T	2,4	2.3482	0.775	.0890
		CHP-25-3R2T	3	2.3285	0.775	.0799
CHP-26T	General Motors - HP Cam Bearing Set	CHP-25-1T	1	2.3482	0.775	.0890
		CHP-25-2T	2,4	2.3285	0.775	.0799
		CHP-25-3T	3	2.3088	0.775	.0700
		CHP-26-5T	5	2.3467	1.077	.0890
CU-15	Chrysler, Cummins - Cam Bearing Set	CU-14-1	1,2	2.3323	1.005	.1010
F-34 .001 und .010 und .030 und	Ford, Mazda - Cam Bearing Set	F-34-1	1,2,3,4	1.9011	0.693	.0638
		F-67-1	1,5	2.5143	0.950	.0749
		F-67-2	2,3,4	2.5143	0.535	.0749
GMP-10	Specialty Aftermarket Blocks - HP Cam Bearing Set	GM2300-1	1,2,3,4,5	2.2980	0.775	.0653
GMP-10T	Specialty Aftermarket Blocks - HP Cam Bearing Set (Coated)	GM2300-1T	1,2,3,4,5	2.2980	0.775	.0653

**Denotes Auxiliary / Balance Shaft Bearing
"und" Denotes Undersized ID

BEARING SET CONTENTS

SET NO.	ENGINE MFG. / DESCRIPTION	CONTENTS	POSITION	HOUSING BORE	LENGTH	MAX WALL
IN-22	IHC - Cam Bearing Set	IN-19-1	1	2.5013	1.010	.1078
		IN-19-2	2,3	2.4813	0.709	.0980
		IN-20-1	4	2.5013	0.705	.1080
IN-23	Ford, IHC - Cam Bearing Set	IN-21-1	1,2,3,4	2.5984	0.740	.0778
N-7BT	American Motors, Eagle, IHC, Jeep - Special Oil Control Cam Bearing Set w/ OD Groove No. 2, 3 Position (Coated)	N-7-1T	1	2.1560	0.690	.0620
		N-7-2BT	2	2.1460	0.690	.0620
		N-7-3BT	3	2.1360	0.690	.0620
		N-7-4T	4	2.1260	0.690	.0620
PD-41	Chrysler - Cam Bearing Set	PD-41-1	1	2.5792	1.560	.0751
		PD-31-2B	2	2.4073	0.587	.0650
		PD-31-3B	3	2.3916	0.587	.0650
		PD-31-4B	4	2.3758	0.587	.0650
		PD-31-5B	5	1.8499	0.587	.0650
PDP-31B	Chrysler - HP Cam Bearing Set	PDP-31-1B	1	2.4231	0.665	.0650
		PDP-31-2B	2	2.4073	0.587	.0650
		PDP-31-3B	3	2.3916	0.587	.0650
		PDP-31-4B	4	2.3758	0.587	.0650
		PDP-31-5B	5	1.8499	0.587	.0650
PDP-31BT	Chrysler - HP Cam Bearing Set (Coated)	PDP-31-1BT	1	2.4231	0.665	.0650
		PDP-31-2BT	2	2.4073	0.587	.0650
		PDP-31-3BT	3	2.3916	0.587	.0650
		PDP-31-4BT	4	2.3758	0.587	.0650
		PDP-31-5BT	5	1.8499	0.587	.0650
PDP-32	Chrysler - HP Cam Bearing Set	PDP-16-1	1	2.1300	0.875	.0645
		PDP-17-1	2,3,4,5	2.1300	0.750	.0645
PDP-32T	Chrysler - HP Cam Bearing Set (Coated)	PDP-16-1T	1	2.1300	0.875	.0645
		PDP-17-1T	2,3,4,5	2.1300	0.750	.0645
PDP-41	Chrysler - HP Cam Bearing Set	PDP-41-1	1	2.5792	1.560	.0751
		PDP-31-2B	2	2.4073	0.587	.0650
		PDP-31-3B	3	2.3916	0.587	.0650
		PDP-31-4B	4	2.3758	0.587	.0650
		PDP-31-5B	5	1.8499	0.587	.0650
PDP-41T	Chrysler - HP Cam Bearing Set (Coated)	PDP-41-1T	1	2.5792	1.560	.0751
		PDP-31-2BT	2	2.4073	0.587	.0650
		PDP-31-3BT	3	2.3916	0.587	.0650
		PDP-31-4BT	4	2.3758	0.587	.0650
		PDP-31-5BT	5	1.8499	0.587	.0650

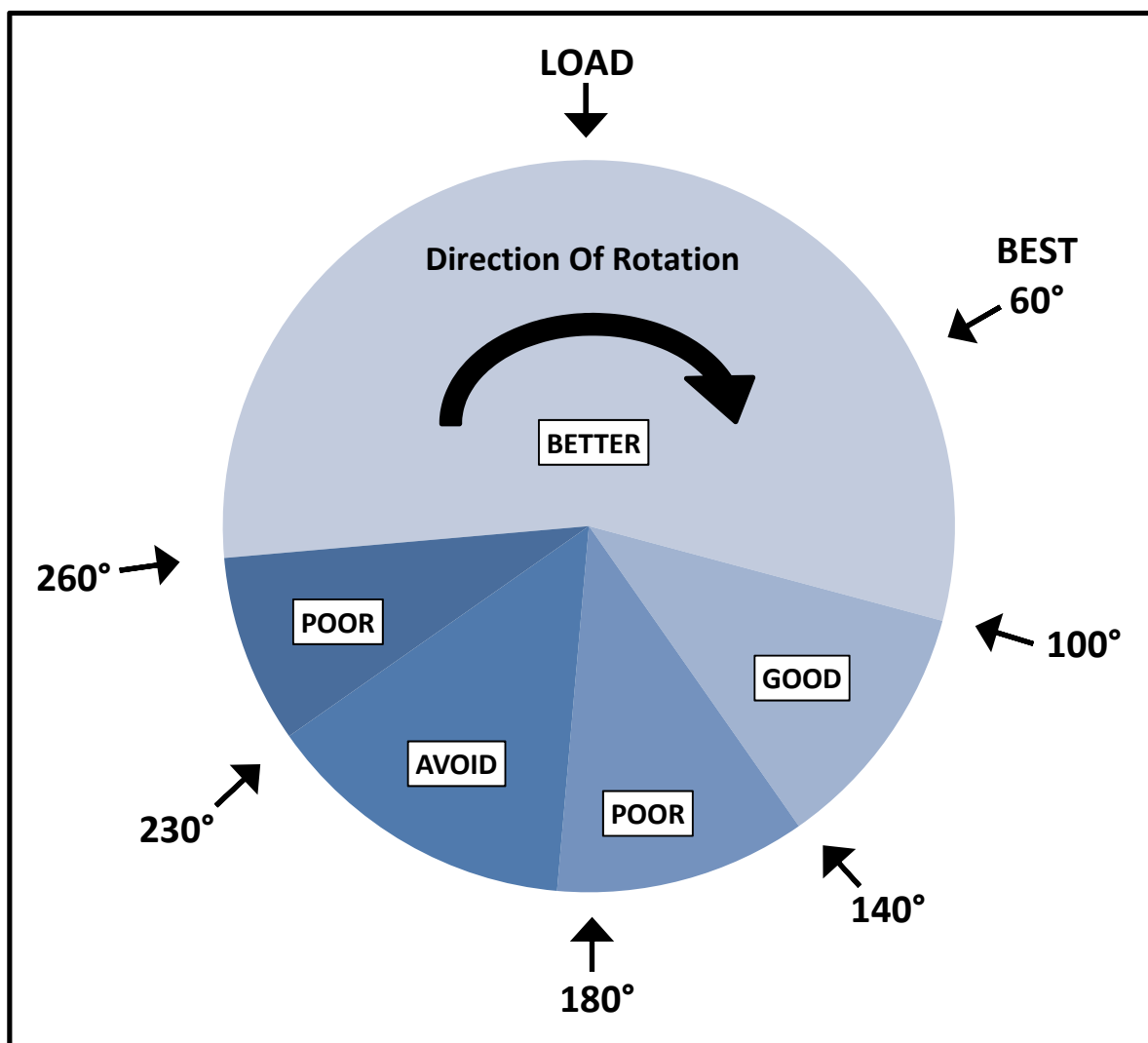
**Denotes Auxiliary / Balance Shaft Bearing
 "und" Denotes Undersized ID

OPTIMUM PLACEMENT OF CAMSHAFT BEARING OIL FEED HOLE LOCATION

Maximum camshaft support will be realized by installing the cam bearing oil feed hole to the optimum clock location. Blocks and heads using a 360° oil groove located behind the bearing oil feed, allow one to move the clock position of the cam bearing oil feed hole. This way you can adjust the clock position during cam bearing installation to make sure that the optimum location for the best hydrodynamic wedge is selected. Locating and installing the cam bearing to take advantage of this hydrodynamic wedge will supply the maximum support for the camshaft during engine operation. The direction of camshaft rotation and the engine oil entry point into the bearing control the placement of the hydrodynamic wedge.

If the oil feed passage in the block or head is just a hole without a 360° groove, the bearing oil hole must line up with the oil feed passage in the block or head. In some instances, the bearing oil feed hole in the cam bearing also lines up with a groove cut in the camshaft journal. In those instances, the location of the bearing oil feed hole in the bearing is also very critical fore and aft and may not match up 100% with the hole in the block or head.

If the camshaft being used is driven with a gear-to-gear arrangement, or is a reverse rotation engine with a chain drive, the cam bearing oil feed hole will require repositioning to the opposite lower side. This is due to the fact that the camshaft is turning in the opposite direction.



(The illustration shows the optimum engine oil feed hole location for a camshaft that is turning clockwise as viewed from the front of the engine.)

This information was provided by AERA - Engine Builders Association.

CONVERSION SIZE CHART

INCHES		MILLIMETERS	INCHES		MILLIMETERS
(FRACTION)	(DECIMAL)	(MM)	(FRACTION)	(DECIMAL)	(MM)
1/64	0.0156	0.3969	33/64	0.5156	13.0969
1/32	0.0313	0.7938	17/32	0.5313	13.4938
3/64	0.0469	1.1906	35/64	0.5469	13.8906
1/16	0.0625	1.5875	9/16	0.5625	14.2875
5/64	0.0781	1.9844	37/64	0.5781	14.6844
3/32	0.0938	2.3813	19/32	0.5938	15.0813
7/64	0.1094	2.7781	39/64	0.6094	15.4781
1/8	0.1250	3.1750	5/8	0.6250	15.8750
9/64	0.1406	3.5719	41/64	0.6406	16.2719
5/32	0.1563	3.9688	21/32	0.6563	16.6688
11/64	0.1719	4.3656	43/64	0.6719	17.0656
3/16	0.1875	4.7625	11/16	0.6875	17.4625
13/64	0.2031	5.1594	45/64	0.7031	17.8594
7/32	0.2188	5.5563	23/32	0.7188	18.2563
15/64	0.2344	5.9531	47/64	0.7344	18.6531
1/4	0.2500	6.3500	3/4	0.7500	19.0500
17/64	0.2656	6.7469	49/64	0.7656	19.4469
9/32	0.2813	7.1438	25/32	0.7813	19.8438
19/64	0.2969	7.5406	51/64	0.7969	20.2406
5/16	0.3125	7.9375	13/16	0.8125	20.6375
21/64	0.3281	8.3344	53/64	0.8281	21.0344
11/32	0.3438	8.7313	27/32	0.8438	21.4313
23/64	0.3594	9.1281	55/64	0.8594	21.8281
3/8	0.3750	9.5250	7/8	0.8750	22.2250
25/64	0.3906	9.9219	57/64	0.8906	22.6219
13/32	0.4063	10.3188	29/32	0.9063	23.0188
27/64	0.4219	10.7156	59/64	0.9219	23.4156
7/16	0.4375	11.1125	15/16	0.9375	23.8125
29/64	0.4531	11.5094	61/64	0.9531	24.2094
15/32	0.4688	11.9063	31/32	0.9688	24.6063
31/64	0.4844	12.3031	63/64	0.9844	25.0031
1/2	0.5000	12.7000	1	1.0000	25.4000

CONVERSION FORMULA

INCHES X 25.4 = MM

MM / 25.4 = INCHES

Dura-Bond now has a line of engine hardware available.

The engine tear down and cleaning process can lead to broken, bent, distorted, or lost service parts. These items can be troubling to any engine rebuilder, especially when they are difficult to obtain. That is why Dura-Bond offers many of the hard to find OEM service parts you need at substantially lower prices.

- Manufactured to precise OEM dimensions for exact fit
- Extensive product coverage
- Lower prices mean more profits to rebuilders
- Offer hard to find and OEM discontinued parts

If you have any additional OEM hardware needs, we invite you to inquire.



We Make It, Not Just Distribute It!

For further information, please contact Dura-Bond Bearing.



Spark Plug Tubes



Application:

SPT-13: BMW (1.6L Mini Cooper Eng.)
SPT-1: CHRYSLER (3.2L, 3.5L Eng.)
SPT-12: CHRYSLER (3.6L Pentastar Eng.)
SPT-10: FORD (5.0L Coyote Eng.)
SPT-4: GM (3.6L High Feature Eng.)
SPT-11: HYUNDAI (1.8L G4 GM Eng.)
SPT-5: TOYOTA (2.2L, 5SFE Eng.)
SPT-2: TOYOTA (3.0L, 1MZ Eng.)
SPT-3: TOYOTA (3.4L, 5VZ Eng.)
SPT-7: TOYOTA (3.5L, 2GR-FE Eng.)
SPT-9: TOYOTA (4.7L, 2UZ-FE Eng.)

Spring Retainers



Application:

SR-779: CATERPILLAR 3116 Series
SR-627: CHRYSLER 2.5L (150ci), 4.0L (243ci)
SR-570: CHRYSLER 4.7L (287ci)
SR-318: CHRYSLER 5.2L (318ci), 5.9L (360ci) (Early)
SR-626: CHRYSLER 5.2L (318ci), 5.9L (360ci) (Late)
SR-183: FORD 1.6L (98ci), 1.9L (116ci), 3.0L (183ci)
SR-536: FORD 2.8L, 2.9L, 4.0L
SR-502: FORD 4.7L (289ci) Hi Perf.
SR-220: GENERAL MOTORS 2.2L (134ci)
SR-500: GENERAL MOTORS 5.7L (350ci) Hi Perf.
SR-366: GENERAL MOTORS 7.4L (454ci)
SR-809: NISSAN 2.5L QR25
SR-014: WAUKESHA VGF F18/H24GL/GLD
LCR/HCR, L36/P48GL/GLD HCR

Distributor Tower Shaft Bushing



AD-584

Application:

CHRYSLER (318ci-440ci) "LA" V8

Interchanges with: OE# 2863584, OE# 318-440, 839007, PC-780

Rotator Eliminators



The exhaust rotator eliminators are used to make up the difference when doing away with factory big block Chevy exhaust rotators.

No longer will you have to stack shims to take up the space! The old standard shims simply will not hold up to the extreme pressures and high rpm found in today's performance engines.

These rotator eliminators also provide a step for the valve spring so that it cannot walk around on the cylinder head.

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
RE200I	GM 7.4 (454ci) Also LPG	Rotator Eliminator	1.7400	0.640	0.180
RE250	GM 7.4 (454ci) Also LPG	Rotator Eliminator	1.7400	0.640	0.250
RE200HP	GM 7.4 (454ci) Hi Perf.	Rotator Eliminator (Cupped)	1.7400	0.640	0.300
RE200	GM 7.4 (454ci) Also LPG	Rotator Eliminator	1.7400	0.640	0.350

Knock Sensor Stud



ST-1

Application:
FORD 4.6L

Interchanges with: OE# W704602-S309

Crankshaft Inserts



AD-699, AD-605

Application:
AD-699 - GM 2.5L (w/Automatic Trans.)
AD-605 - GM 2.5L (w/Manual Trans.)

Rocker Arm Pedestal Shims



The Rocker Arm Pedestal Shim utilizing non-adjustable pedestal mounted rocker arms. The hydraulic lifters in these engines may have excessive preload due to a camshaft change, valve job, head resurfacing, etc.

These shims cure this problem without resorting to different pushrods. The shims are placed between the rocker arm pedestal and the cylinder head, to reduce the preload.

PART NO.	MAKE & APPLICATION	THICKNESS
S-100	FORD (255ci-302ci, 302ci H.O.), (351ci W, C, M), 400ci, (370ci-429ci-460ci)	.020" Thickness
S-220-10-P	GM 2.2L (134ci)	.010" Thickness
S-220-20-P	GM 2.2L (134ci)	.020" Thickness
S-006-10-P	GM 3.1L (189ci), 3.4L (207ci)	.010" Thickness
S-006-20-P	GM 3.1L (189ci), 3.4L (207ci)	.020" Thickness
S-006-30-P	GM 3.1L (189ci), 3.4L (207ci)	.030" Thickness

Cam Chain Oil Tab



AS-001-P

Application:
CHRYSLER (273ci-360ci) "LA" V8

Interchanges with: OE# 03671649

Cam Retainer



AW-9016-P

Application:
GM (294ci-427ci) LS

Cam Eccentric



- AE-001-P - FORD** (255ci-351ci) Windsor V8 (1968-later), 351M, 400M, (460ci) V8 - Inner
- AE-002-P - FORD** (255ci-351ci) Windsor V8 (1968-later), 351M, 400M, (460ci) V8, (332ci-428ci) "FE" V8 - Outer
- AE-003-P - FORD** 5.0L (302ci), 5.8L (351ci) w/Fuel Injection - Fuel Injected
- AE-004-P - FORD** (332ci-428ci) "FE" V8 - Inner

Bypass Valves



- AV-001-P (11 psi) - GM** 1.4L (85ci), 1.6L (97ci), 1.8L (110ci), 2.0L (122ci), 2.8L (173ci), 3.8L (229ci), 4.3L (262ci), 4.9L (301ci)
- AV-580-PHD (21 psi) - GM** 1.4L (85ci), 1.6L (97ci), 1.8L (110ci), 2.0L (122ci), 2.8L (173ci), 3.8L (229ci), 4.3L (262ci), 4.9L (301ci)
- AV-280-P - GM** 2.3L (140ci), 2.5L (151ci), 3.2L (194ci), 3.8L (230ci), 4.1L (250ci), 4.8L (292ci)

Coolant Tube (O-Ring or Slip-Fit Type)



TC-1, TC-2

- Application:**
FORD 4.6L, 5.4L 8 cyl
TC-1 (O-Ring)
TC-2 (Slip-Fit)
TC-1-00 (O-Ring for TC-1)

Timing Gear Oiler (Press in Type)



TC-4

- Application:**
GM 2.5L (151ci), 3.8 (230ci), 4.1L (250ci), 4.8L (292ci) 4-6 cyl (1963-1986)
Interchanges with: OE# 3875950, PG-380

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
AMC					
CAM BOLTS & WASHERS					
AB-030-P	3.3L (199ci), 3.8L (232ci), 4.0L (242ci), 4.2L (258ci)	Bolt	1/2-20 x 1-1/4 Hex		
AW-011-P	3.3L (199ci), 3.8L (232ci), 4.0L (242ci), 4.2L (258ci)	Washer	2-1/16 x 1/2 x 3/16 Washer		
HEAD DOWELS					
AD-258	2.5L (150ci), 4.0L (242ci), 4.2L (258ci), 5.0L (304ci), 5.9L (360ci), 5.6L (390ci 1970 Only), 6.6L (401ci)	Hollow Dowel	0.6250	0.523	0.500
AD-927-P	3.3L (199ci), 3.8L (232ci), 4.0L (242ci), 4.2L (258ci)	Solid Dowel	0.3125	Solid	0.565
AD-0112	1966-69 (290ci), (343ci), (390ci) w/1970-Later Heads	Stepped Hollow Dowel	0.6250/0.5620	0.450	0.500
OIL FILTER PIN					
AD-007-P	(199ci-258ci)	Roll Pin	1/4 x 1-1/2		
OIL PUMP DOWELS					
AD-148	3.8L (232ci), 4.0L (242ci), 4.2L (258ci)	Hollow Dowel	0.5615	0.454	0.812
TRANSMISSION DOWELS					
AD-148	3.3L (199ci), 3.8L (232ci), 4.0L (242ci), 4.2L (258ci), (290ci), (304ci), (343ci), (360ci), (390ci), (401ci)	Hollow Dowel	0.5615	0.454	0.812
WOODRUFF KEYS					
AK-002-P	3.3L (199ci), 3.8L (232ci), 4.0L (242ci), 4.2L (258ci)	Woodruff Key	3/16 x 3/4		
AK-010-P	3.3L (199ci), 3.8L (232ci), 4.0L (242ci), 4.2L (258ci)	Woodruff Key	3/16 x 7/8		
BMW					
SPARK PLUG TUBES					
SPT-13	1.6L Mini Cooper	Spark Plug Tube	0.9845	0.902	5.710
CATERPILLAR					
SPRING RETAINERS					
SR-779	Caterpillar 3116 Series	Spring Retainer	Valve Stem Diameter 0.315		
VALVE SPRING SPACER					
SP-7488	Caterpillar 3304, 3306 Series	Spacer	1.3750	0.675	1.083
CHRYSLER					
CAM BOLTS & WASHERS					
AB-012-P	(273ci-360ci) "LA" V8	Bolt	7/16-14 x 1-1/4 Hex		
AW-002-P	(273ci-360ci) "LA" V8	Cupped Washer	1-1/2 x 7/16 x 5/16 Washer		
AW-005-P	5.2L (318ci), 5.9L (360ci) w/Roller Cam	Cupped Washer	1-1/2 x 7/16 x 7/16 Washer		
AW-006-P	5.2L (318ci), 5.9L (360ci) w/Roller Cam, (361ci-440ci) V8	Tapered (Bellville) Washer	1-1/2 x 7/16 x 1/8 Washer		
AB-040-P	(361ci-440ci) V8	Bolt	7/16-14 x 1 Hex		
AB-042-P	(361ci-440ci) V8	Bolt	3/8-16 x 3/4 Hex		
CAM CHAIN OIL TABS					
AS-001-P	(273ci-360ci) "LA" V8	Chain Oil Tab	N/A	N/A	N/A
CAM PLUG					
FP-0007-P	5.7L, 6.1L, 6.4L Hemi Gen III	Cam Plug (Rear)	N/A	N/A	N/A
CAM SPROCKET DOWELS					
AD-402	2.2L, 2.5L Mitsubishi SOHC Vin A-E, J, K.	Solid Dowel	0.2318	Solid	0.630
CAM TRAY BOLTS					
AB-005-P	5.2L (318ci), 5.9L (360ci) w/Roller Cam	Bolt	5/16-18 x 5/8 Flanged Hex		
CRANK SEAL RETAINER CARRIER DOWELS					
AD-466	5.7L, 6.1L, 6.4L Hemi Gen III	Hollow Dowel	0.3973	0.281	0.305

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
CHRYSLER (Cont'd)					
DISTRIBUTOR TOWER SHAFT BUSHINGS					
AD-584	(318ci-440ci) "LA" V8	Distributor Tower Shaft Bushing	N/A	N/A	N/A
EXPANSION PLUGS					
FP-0008-P	5.7L, 6.1L, 6.4L Hemi Gen III	Expansion Plug	1-1/4 Disc Plug		
HEAD DOWELS					
AD-111	2.0L, 2.4L, 2.6L Includes Mitsubishi Eng.	Hollow Dowel	0.6300	0.500	0.505
AD-402	2.2L, 2.5L Mitsubishi SOHC Vin A-E, J, K.	Solid Dowel	0.2318	Solid	0.630
AD-849	2.4L, 2.6L (G54B), 2.7L Includes Mitsubishi Eng. 5.7L, 6.1L, 6.4L Hemi Gen III	Hollow Dowel	0.6313	0.500	0.485
AD-856	3.3L (202ci)	Hollow Dowel	0.5913	0.452	0.488
AD-849A	4.7L	Hollow Dowel	0.6313	0.500	0.385
AD-927-P	(273ci-360ci) "LA" V8	Solid Dowel	0.3125	Solid	0.565
AD-1284-P	(361ci-440ci) V8	Solid Dowel	0.2466	Solid	0.630
OIL INDICATOR TUBE PLUGS					
FP-0009-P	5.7L, 6.1L, 6.4L Hemi Gen III	Oil Indicator Tube Plug	10.6 MMC		
OIL GALLEY PLUGS					
AP-024-P	5.7L, 6.1L, 6.4L Hemi Gen III	Oil Galley Plug	1/4-18 x .46 Internal Hex, w/Sealant		
AP-003-P	5.7L, 6.1L, 6.4L Hemi Gen III	Oil Galley Plug	3/8-18 x .46 Internal Hex, w/Sealant		
SPARK PLUG TUBES					
SPT-1	2.0L, 3.2L, 3.5L	Spark Plug Tube	1.0275	0.965	5.035
SPT-12	3.6L Pentastar Eng.	Spark Plug Tube	0.9845	0.902	3.418
SPRING RETAINERS					
SR-627	2.5L (150ci) (1998-2002), 4.0L (243ci) (1999-2006)	Spring Retainer	Valve Stem Diameter 0.311/0.312		
SR-318	5.2L (318ci), 5.9L (360ci) (Early)	Spring Retainer	Valve Stem Diameter 0.370/0.373		
SR-626	5.2L (318ci), 5.9L (360ci) (Late)	Spring Retainer	Valve Stem Diameter 0.311/0.312		
SR-570	5.7L (345ci), 6.4L (392ci) Hemi Gen III	Spring Retainer	Valve Stem Diameter 0.272/0.273		
THRUST PLATE BOLTS					
AB-001-P	(318ci-360ci) "LA" V8	Cam Thrust Plate Bolt	5/16-18 x 3/4 Hex		
TIMING COVER DOWELS					
AD-1284-P	(361ci-440ci) V8	Solid Dowel	0.2466	Solid	0.630
TRANSMISSION DOWELS					
AD-849	2.4L, 2.6L (G54B), 2.7L Includes Mitsubishi Eng.	Hollow Dowel	0.6310	0.500	0.485
AD-021	2.4L, 2.7L, 3.3L Includes Mitsubishi Eng.	Hollow Dowel	11mm	8.5mm	8.3mm
AD-270	2.7L	Hollow Dowel	0.5510	0.410	0.485
AD-532	3.9L V6, (318ci-440ci) "LA" V8, 5.7L, 6.1L, 6.4L Hemi Gen III	Solid Dowel	0.4960	Solid	0.740
AD-849A	4.7L	Hollow Dowel	0.6313	0.500	0.385
WOODRUFF KEYS					
AK-002-P	(273ci-360ci) "LA" V8	Woodruff Key	3/16 x 3/4		
AK-005-P	(273ci-440ci) "LA" V8	Woodruff Key	3/16 x 1-13/16		
AK-034-P	3.7L, 4.7L	Woodruff Key	3/16 x 2.007		
AK-035-P	5.7L, 6.1L, 6.4L Hemi Gen III	Woodruff Key	3/16 x 1.072		
FORD					
BELLHOUSING DOWELS					
AD-397A	5.4L	Hollow Dowel	0.6305	0.469	0.984

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
FORD (Cont'd)					
CAM BOLTS & WASHERS					
AB-032-P	3.8L (232ci)	Bolt & Washer	10mm-1.5 x 34mm Hex, 35mm Integral Washer		
AB-009-P	(221ci-351ci) Windsor V8, (370ci-460ci) "Lima" V8	Bolt	3/8-16 x 1-1/2 Hex		
AW-001-P	(221ci-351ci) Windsor V8, (370ci-460ci) "Lima" V8	Washer	1-1/4 x 3/8 x 1/4 Washer		
AB-013-P	(332ci-428ci) "FE" V8	Bolt	7/16-14 x 1-3/4 Hex		
AW-003-P	(332ci-428ci) "FE" V8	Washer	1-1/4 x 7/16 x 1/4 Washer		
AB-014-P	(460ci) V8 w/Fuel Injection	Bolt	3/8-16 x 1-3/8 Hex		
CAM ECCENTRIC					
AE-001-P	(255ci-351ci) Windsor V8 (1968-later), 351M, 400M, (460ci) V8	Cam Eccentric - Inner	N/A	N/A	N/A
AE-002-P	(255ci-351ci) Windsor V8 (1968-later), 351M, 400M, (460ci) V8, (332ci-428ci) "FE" V8	Cam Eccentric - Outer	N/A	N/A	N/A
AE-003-P	5.0L (302ci), 5.8L (351ci) w/Fuel Injection	Cam Eccentric (FI)	N/A	N/A	N/A
AE-004-P	(332ci-428ci) "FE" V8	Cam Eccentric - Inner	N/A	N/A	N/A
CAM SPROCKET DOWELS					
AD-005-P	(302ci) 351W w/Two Piece Eccentric, 351C/M, 400M, (429ci, 460ci)	Solid Dowel	0.3115	Solid	1.125
AD-004-P	(221ci-351ci) Windsor V8 w/One Piece Eccentric	Solid Dowel	0.3115	Solid	1.375
AD-006-P	(332ci-428ci) "FE" V8	Solid Dowel	0.3090	Solid	1.500
CAM TRAY BOLTS					
AB-011-P	5.0L (302ci), 5.8L (351ci) w/Roller Cam	Cam Tray Bolt	1/4-20 x 1/2 Place Bolt, Hex		
COOLANT TUBES					
TC-1	4.6L, 5.4L	Coolant Tube (O-Ring)	0.8750	0.437	1.915
TC-1-OO	4.6L, 5.4L	O-Ring For TC-1	N/A	N/A	N/A
TC-2	4.6L, 5.4L	Coolant Tube (Slip-Fit)	0.9800	0.500	2.438
FLYWHEEL DOWELS					
AD-6397	4.6L, 5.0L (302ci)	Stepped Solid Dowel	0.2485/0.3140	Solid	0.700
FRONT COVER DOWELS					
AD-008DA	6.0L (363ci)	Hollow Dowel	0.4333	0.360	0.437
HEAD DOWELS					
AD-849	1.8L (110ci), 2.0L (121ci) Courier Eng.	Hollow Dowel	0.6310	0.500	0.485
AD-300	2.3L	Hollow Dowel	0.5555	0.468	0.470
AD-600	3.0L	Hollow Dowel	0.6050	0.475	0.550
AD-011-P	3.8L (232ci)	Hollow Dowel (Split)	17mm	15mm	19mm
AD-008-P	4.9L (300ci), 3.6L (221ci), 4.2L (255ci), 4.3L (260ci), 4.5L (272ci), 4.7L (289ci), 5.0L (302ci), 5.8L (351ci), 6.6L (400ci)	Hollow Dowel	0.6745	0.552	0.435
AD-593	6.0L (18mm-20mm) 2003-2007 Powerstroke Eng.	Hollow Dowel (Stepped)	0.6970/0.7775	0.599	0.770
AD-640	6.4L	Hollow Dowel	0.7783	0.700	0.755
AD-008A-P	(332ci-428ci) "FE" V8, (370ci-460ci) "Lima" V8	Hollow Dowel (Split)	0.7400	0.625	0.445
HEAD PLUGS					
AP-020	MZR Eng.	Aluminum Plug	0.3645	Solid	0.360
KNOCK SENSOR STUD					
ST-1	4.6L	Knock Sensor Stud	N/A	N/A	N/A
MANIFOLD DOWELS					
AD-025-P	(400ci) 351C, 351M	Solid Dowel	0.2500	Solid	0.500
OIL PUMP DOWELS					
AD-230	2.0L, 2.3L Escort, Pinto	Hollow Dowel	0.7200	0.615	0.395

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
FORD (Cont'd)					
OIL GALLEY PLUGS					
AP-001-P	4.9L (300ci)	Oil Galley Plug	1/16-27 x 1/4 Internal Hex		
PEDESTAL SHIMS					
S-100	(255ci-302ci, 302ci H.O.), (351ci W, C, M), 400ci, (370ci-429ci-460ci) w/Pedestal Mount Rocker Arms	Pedestal Shim	.020" Thickness		
SPACER					
SP-6265	4.6L	Spacer	1.8500	1.446	0.441
AS-002	4.9L (300ci)	Spacer	1.5160	1.255	0.194
SPARK PLUG TUBES					
SPT-10	5.0L Coyote Eng. (2011-2014)	Spark Plug Tube	1.1825	1.089	2.562
SPRING RETAINERS					
SR-183	1.6L (98ci), 1.9L (116ci), 3.0L (183ci)	Spring Retainer	Valve Stem Diameter 0.316		
SR-536	2.8L, 2.9L, 4.0L	Spring Retainer	Valve Stem Diameter 0.315/0.316		
SR-502	4.7L (289ci) Hi Perf.	Spring Retainer	Valve Stem Diameter 0.342		
TENSIONER BOLTS					
AB-034-P	3.8L (232ci)	Bolt	6mm-1.0 x 14mm Hex		
THRUST PLATE BOLTS					
AB-033-P	3.8L (232ci)	Cam Thrust Plate Bolt	6mm-1.0 x 19mm Flat Head Torx		
AB-033-P	3.8L (232ci)	Balance Shaft Thrust Plate Bolt	6mm-1.0 x 19mm Flat Head Torx		
AB-010-P	4.7L (289ci), 5.0L (302ci), 5.8L (351ci)	Cam Thrust Plate Bolt	1/4-20 x 5/8 Hex		
AB-001-P	4.9L (300ci)	Cam Thrust Plate Bolt	5/16-18 x 3/4 Hex		
AB-015-P	(332ci-428ci) "FE" V8	Cam Thrust Plate Bolt	7/16-14 x 5/8 Hex		
AB-011-P	7.5L (460ci)	Cam Thrust Plate Bolt	1/4-20 x 1/2 Place Bolt, Hex		
TIMING COVER DOWELS					
AD-015	2.3L	Hollow Dowel	0.3140	0.261	0.455
AD-520	3.8L (232ci), 4.2L	Hollow Dowel	0.4881	0.400	0.670
AD-967	4.7L (289ci), 5.0L (302ci), 5.8L (351ci)	Hollow Dowel	0.4820	0.385	0.550
TRANSMISSION DOWELS					
AD-E7RY	2.0L	Hollow Dowel	0.5010	0.406	0.650
AD-521	3.0L, 3.8L (232ci), 4.2L (255ci)	Hollow Dowel	0.6074	0.510	0.800
AD-397	3.8L (232ci), 4.2L (255ci), 4.7L (289ci), 4.9L (300ci), 5.0L (302ci), 5.8L (351ci), 5.9L (360ci), 6.7L (390ci), 6.6L (400ci), 7.5L (460ci)	Solid Dowel Pin	0.5000	Solid	1.000
WATER PUMP DOWELS					
FD-1-1	2.8L (171ci)	Hollow Dowel	0.9395	0.834	0.572
WOODRUFF KEYS					
AK-003-P	3.8L (232ci), 4.7L (289ci), 5.0L (302ci), 5.8L (351ci)	Woodruff Key	3/16 x 1-13/32		
AK-004-P	4.7L (289ci), 4.9L (300ci), 5.0L (302ci), 5.8L (351ci)	Woodruff Key	3/16 x 1-3/4		
AK-002-P	4.9L (300ci)	Woodruff Key	3/16 x 3/4		
AK-037-P	5.4L (330ci)	Woodruff Key	3/16 x 1.900		
AK-006-P	(332ci-428ci) "FE" V8	Woodruff Key	3/16 x 1-13/32		
AK-007-P	351C, 351M, (400ci), 7.5L (460ci)	Woodruff Key	3/16 x 1-3/4		
AK-008-P	7.5L (460ci)	Woodruff Key	1/4 x 7/8		
GENERAL MOTORS					
BALANCE SHAFT GEAR BOLTS & WASHERS					
AB-026-P	4.3L (262ci)	Bolt	3/8-16 x 1-1/4 Bolt, Hex		
AW-007-P	4.3L (262ci)	Flat Washer	3/8 Washer		
AW-006-P	4.3L (262ci)	Tapered Washer	1-1/2 x 7/16 x 1/8 Washer		

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
GENERAL MOTORS (Cont'd)					
BELLOUSING DOWELS					
AD-598	3.5L	Hollow Dowel	0.6210	0.406	0.700
BYPASS VALVES					
AV-001-P	1.4L (85ci), 1.6L (97ci), 1.8L (110ci), 2.0L (122ci), 2.8L (173ci), 3.8L (229ci), 4.3L (262ci), 4.9L (301ci) 11 psi	Bypass Valve	N/A	N/A	N/A
AV-580-PHD	1.4L (85ci), 1.6L (97ci), 1.8L (110ci), 2.0L (122ci), 2.8L (173ci), 3.8L (229ci), 4.3L (262ci), 4.9L (301ci) 21 psi	Bypass Valve	N/A	N/A	N/A
AV-280-P	2.3L (140ci), 2.5L (151ci), 3.2L (194ci), 3.8L (230ci), 4.1L, (250ci), 4.8L (292ci)	Bypass Valve	N/A	N/A	N/A
CAM BOLTS & WASHERS					
AB-007-P	4.3L (262ci)	Bolt	5/16-18 x 1-3/8 Cap Screw, Hex		
AB-019-P	4.3L (262ci)	Bolt	5/16-18 x 1-1/2 Hex		
AW-009-P	4.3L (262ci)	Washer	5/16 Star Washer		
AB-001-P	(262ci-400ci) Small Block V8, (366ci-454ci) Big Block V8	Bolt	5/16-18 x 3/4 Hex		
AB-031-P	(265ci-455ci) Pontiac V8	Bolt	1/2-20 x 1 Hex		
AW-010-P	(265ci-455ci) Pontiac V8	Washer	1-3/8 x 1/2 x 3/16 Washer		
CAM BOX DOWELS					
AD-022	3.4L (207ci)	Hollow Dowel	0.4350	0.343	0.500
CAM BOX DOWELS					
AD-024	2.2L Ecotech	Hollow Dowel	0.3937	0.328	0.627
CAM LOCK PLATE					
AW-013-P	All Other GM V6 / V8 Hi Perf.	Cam Lock Plate	N/A	N/A	N/A
CAM RETAINER					
AW-9016-P	(294ci-427ci) LS	Cam Retainer	N/A	N/A	N/A
CAM SPACER					
SP-230	3.8L (230ci)	Cam Spacer	1.5050	1.288	0.139
CAM SPROCKET BOLTS					
AB-046-P	(294ci-427ci) LS	Bolt	8mm-1.25 x 24mm, Hex		
CAM TRAY BOLTS					
AB-005-P	4.3L (262ci), 5.0L (305ci), 5.7L (350ci) w/Roller Cam	Bolt	5/16-18 x 5/8 Flanged Hex		
CRANK PINS					
AD-679	(262ci-400ci) Small Block V8, (366ci-454ci) Big Block V8	Solid Dowel	0.4386	Solid	0.813
CRANKSHAFT INSERTS					
AD-699	2.5L w/Automatic Trans.	Crankshaft Insert	1.4985	0.830	0.924
AD-605	2.5L w/Manual Trans.	Crankshaft Insert	1.4985	1.092	1.075
FLAT LIFTER PLUG BOLTS					
AB-027-P	5.7L (350ci)	Bolt	15/16-18 x 1/2 Hex		
FUEL PUMP BOLTS & WASHERS					
AB-021-P	(262ci-400ci) Small Block V8	Bolt	3/8-16 x 5/8 Hex		
AW-007-P	(262ci-400ci) Small Block V8	Flat Washer	3/8 Washer		
HARMONIC BALANCER BOLTS					
AB-840-P	(294ci-427ci) LS	Bolt	16mm-2.0 x 103mm Hex		

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
GENERAL MOTORS (Cont'd)					
HEAD DOWELS					
AD-189	Geo 1.3L, 1.6L, Suzuki G13, G16 Eng.	Hollow Dowel	0.5113	0.406	0.700
AD-050	2.3L (138ci), 2.4L (146ci)	Hollow Dowel	0.5562	0.500	0.745
AD-927-P	(262ci-400ci) Small Block V8, (265ci-455ci) Pontiac V8	Solid Dowel	0.3125	Solid	0.565
AD-013	4.1L Cadillac (FWD)	Hollow Dowel	0.5820	0.484	0.945
AD-018	4.1L Cadillac (RWD)	Hollow Dowel (Stepped)	0.5820/0.5910	0.484	0.945
AD-352	4.6L Cadillac Northstar	Hollow Dowel	0.6165	0.500	1.100
AD-258	(294ci-364ci) LS 1998-2000	Hollow Dowel	0.6250	0.523	0.500
AD-326	(294ci-427ci) LS 2001-2013	Hollow Dowel	0.6420	0.516	0.500
AD-8081-P	(366ci-454ci) Big Block V8	Hollow Dowel	0.6400	0.500	0.500
AD-347	Geo, Suzuki Eng.	Hollow Dowel	0.3900	0.281	0.272
OIL DIPSTICK PLUGS					
AP-013	5.0L (305ci), 5.7L (350ci) Marine	Oil Dipstick Plug	N/A	N/A	N/A
AP-014	4.3L (262ci)	Oil Dipstick Plug	N/A	N/A	N/A
OIL FILTER ADAPTER BOLTS					
AB-039-P	All Other GM V6 / V8 Hi Perf.	Bolt	5/16-18 x 1-1/16		
OIL GALLEY PLUGS					
AP-003-P	4.3L (262ci)	Oil Galley Plug	3/8-18 x .46 Internal Hex, w/Sealant		
CB-001-P	4.3L (262ci), 5.7L (350ci), 6.6L (400ci)	Oil Galley Rear Main Plug	12MM Check Ball		
AP-002-P	(262ci-400ci) Small Block V8	Oil Galley Plug	1/4-18 x .33 Internal Hex, w/Sealant		
AP-860-P	(294ci-427ci) LS	Oil Galley Plug	N/A	N/A	N/A
AP-023-P	(294ci-427ci) LS (Front)	Oil Galley Plug	41/64		
OIL PAN BOLTS					
AB-020-P	4.3L (262ci)	Oil Pan Bolt (Aluminum Pan)	5/16-18 x 7/8 Frame Bolt, Hex		
AB-016-P	4.3L (262ci)	Oil Pan Bolt (Steel Pan)	1/4-20 x 3/4 Frame Bolt, Hex		
AB-023-P	(262ci-400ci) Small Block V8	Oil Pan Bolt	5/16-18 x 5/8 Sims Bolt, Hex		
AB-010-P	(262ci-400ci) Small Block V8	Oil Pan Bolt (With Rails)	1/4-20 x 5/8 Hex		
AB-024-P	(262ci-400ci) Small Block V8	Oil Pan Bolt (Without Rails)	1/4-20 x 1/2 Sims Bolt, Hex		
AB-016-P	(262ci-400ci) Small Block V8	Oil Pan Bolt (Steel Pan w/ Rails)	1/4-20 x 3/4 Frame Bolt, Hex		
OIL PAN DRAIN PLUG WASHERS					
AW-008-P	(262ci-400ci) Small Block V8	Nylon Washer	1/2 x .900 x .078 Washer		
OIL PAN STUDS & NUTS					
ST-002-P	4.3L (262ci)	Oil Pan Stud (Aluminum Pan)	Stud 5/16-18 x 2-1/2		
ST-001-P	(262ci-400ci) Small Block V8	Oil Pan Stud (Steel Pan)	Stud 5/16-18 x 1-9/16 Torx		
AN-002-P	(262ci-400ci) Small Block V8	Oil Pan Stud Nut	5/16 Flange Nut, Hex		
OIL PUMP BOLTS					
AB-022-P	(262ci-400ci) Small Block V8	Oil Pump Bolt (Short Version)	7/16-14 x 2 Bolt, Hex		
AB-018-P	(262ci-400ci) Small Block V8	Oil Pump Bolt (Long Version)	7/16-14 x 2-1/4 Bolt, Hex		
OIL PUMP DOWELS					
AD-SS	1.3L	Hollow Dowel	0.3546	0.266	0.390
AD-126	1.8L	Hollow Dowel	0.3140	0.261	0.410
AD-250	4.1L (250ci), 4.8L (292ci)	Hollow Dowel	0.7600	0.640	0.635
AD-1284-P	(262ci-400ci) Small Block V8, (366ci-454ci) Big Block V8	Solid Dowel	0.2466	Solid	0.630
OIL PUMP DRIVE ROD BUSHINGS					
AD-842	2.5L	Drive Rod Bushing	0.7570	0.491	1.160
OIL PUMP SLEEVES					
AD-010-P	4.3L (262ci), 4.6L (283ci), 5.3L (327ci), 5.7L (350ci), 6.6L (400ci)	Nylon Sleeve	0.6120	0.466	0.600

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
GENERAL MOTORS (Cont'd)					
PEDESTAL SHIMS					
S-220-10-P	2.2L (134ci)	Pedestal Shim	.010" Thickness		
S-220-20-P	2.2L (134ci)	Pedestal Shim	.020" Thickness		
S-006-10-P	3.1L (189ci), 3.4L (207ci)	Pedestal Shim	.010" Thickness		
S-006-20-P	3.1L (189ci), 3.4L (207ci)	Pedestal Shim	.020" Thickness		
S-006-30-P	3.1L (189ci), 3.4L (207ci)	Pedestal Shim	.030" Thickness		
REAR MAIN DOWELS					
AD-SS	2.2L	Hollow Dowel	0.3546	0.266	0.390
RETAINING LINKAGE SHAFT PIN					
PIN-1-P	4L80 Transmission	Retaining Linkage Shaft Pin	N/A	N/A	1.120
ROTATOR ELIMINATORS					
RE200	7.4L (454ci) Also LPG	Rotator Eliminator	1.7400	0.640	0.350
RE200I	7.4L (454ci) Also LPG	Rotator Eliminator	1.7400	0.640	0.180
RE250	7.4L (454ci) Also LPG	Rotator Eliminator	1.7400	0.640	0.250
RE200HP	7.4L (454ci) Hi Perf.	Rotator Eliminator (Cupped)	1.7400	0.640	0.300
SPRING RETAINERS					
SR-220	2.2L (134ci)	Spring Retainer	Valve Stem Diameter 0.234/0.235		
SR-500	5.7L (350ci) Hi Perf.	Spring Retainer	Valve Stem Diameter 0.341/0.342		
SR-366	7.4L (454ci)	Spring Retainer	Valve Stem Diameter 0.372		
SEAL HOUSING BOLTS					
AB-002-P	4.3L (262ci), 5.0L (305ci), 5.7L (350ci)	Bolt	1/4-20 x 1-3/4 Machine Screw, Torx		
AB-003-P	4.3L (262ci), 5.0L (305ci), 5.7L (350ci)	Bolt	1/4-20 x 7/8 Machine Screw, Torx		
AB-046-P	(294ci-427ci) LS	Bolt	8mm-1.25 x 24mm, Hex		
SEAL HOUSING DOWELS					
AD-026	3.8L	Hollow Dowel	0.4325	0.343	0.240
AD-003-P	4.3L (262ci), 5.0L (305ci), 5.7L (350ci)	Hollow Dowel	0.4445	0.297	0.562
SPARK PLUG TUBES					
SPT-4	3.6L (High Feature Eng.)	Spark Plug Tube	N/A	N/A	4.370
THRUST PLATE BOLTS					
AB-004-P	4.3L (262ci)	Balance Shaft Thrust Plate Bolt	1/4-20 x 1/2 Machine Screw, Torx		
AB-006-P	4.3L (262ci)	Cam Thrust Plate Bolt	1/4-20 x 5/8 Machine Screw, Torx		
AB-004-P	4.3L (262ci), 5.0L (305ci), 5.7L (350ci) w/Roller Cam	Cam Thrust Plate Bolt	1/4-20 x 1/2 Machine Screw, Torx		
AB-004-P	5.0L (305ci), 5.7L (350ci) w/Roller Cam	Water Pump Shaft Thrust Plate Bolt	1/4-20 x 1/2 Machine Screw, Torx		
AB-001-P	(265ci-455ci) Pontiac V8	Cam Thrust Plate Bolt	5/16-18 x 3/4 Hex		
AB-044-P	(294ci-427ci) LS	Cam Thrust Plate Bolt	8mm-1.25 x 22mm, Flat Head Torx		
TIMING COVER BOLTS					
AB-017-P	(262ci-400ci) Small Block V8	Timing Cover Bolt (Steel Cover)	1/4-20 x 1/2 Frame Bolt, Hex		
AB-045-P	(294ci-427ci) LS	Timing Cover Bolt	8mm-1.25 x 30mm, Hex		
TIMING COVER DOWELS					
AD-016-P	2.2L (134ci)	Solid Dowel	0.2326	Solid	0.645
AD-046	4.3L (1996-2003) w/Plastic Timing Cover	Solid Dowel (Middle Stepped)	0.2483/0.3435	Solid	0.945
AD-1284-P	(262ci-400ci) Small Block V8, (366ci-454ci) Big Block V8	Solid Dowel	0.2466	Solid	0.630
AD-012-P	6.2L, 6.5L Diesel	Solid Dowel	9mm	Solid	22mm
AD-307-P	6.6L Duramax	Hollow Dowel	0.4327	0.343	0.311
TIMING GEAR OILER					
TC-4	2.5L (151ci), 3.8L (230ci), 4.1L (250ci), 4.8L (292ci)	Timing Gear Oiler (Press in Type)	N/A	N/A	N/A

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
GENERAL MOTORS (Cont'd)					
TIMING STUDS & NUTS					
ST-045-P	4.3L (262ci)	Timing Stud	5/16-18 x 1-3/4		
AN-001-P	4.3L (262ci)	Timing Stud Nut	5/16-18 Top Lock Nut, Hex		
TRANSMISSION DOWELS					
AD-076	2.5L, 2.8L, 3.0L, 3.1L, 3.8L	Hollow Dowel	0.7275	0.500	0.750
AD-047	(294ci-427ci) LS	Solid Dowel	0.6206	Solid	1.185
AD-009-P	All Other GM V6 / V8	Solid Dowel	0.6210	Solid	1.150
AD-023	All Other GM V6 / V8 Hi Perf.	Solid Dowel	0.6210	Solid	1.550
WOODRUFF KEYS					
AK-003-P	4.3L (262ci)	Woodruff Key	3/16 x 1-13/32		
AK-002-P	(262ci-400ci) Small Block V8, (366ci-454ci) Big Block V8 (265ci-455ci) Pontiac V8	Woodruff Key	3/16 x 3/4		
AK-001-P	(262ci-400ci) Small Block V8, (294ci-427ci) LS, (265ci-455ci) Pontiac V8	Woodruff Key	3/16 x 1-3/8		
AK-032-P	4.8L, 5.3L, 6.0L Gen III	Woodruff Key	3/16 x 1-31/64		
AK-166-P	7.4L (454ci)	Woodruff Key	3/16 x 2.367		
HYUNDAI					
SPARK PLUG TUBES					
SPT-11	1.8L G4 GM Eng.	Spark Plug Tube	1.0660	0.985	2.168
IHC (NAVISTAR) TRUCK					
HEAD DOWELS					
AD-125	446E Eng.	Hollow Dowel	0.7408	0.656	0.870
ISUZU					
HEAD DOWELS					
AD-002	2.3L	Hollow Dowel	0.5825	0.500	0.355
AD-021	Isuzu	Hollow Dowel	11mm	8.5mm	8.3mm
JEEP					
MANIFOLD DOWELS					
AD-242	4.0L	Solid Dowel	0.4250	Solid	0.685
MAZDA					
HEAD PLUGS					
AP-020	MZR Eng.	Aluminum Plug	0.3645	Solid	0.360
REAR MAIN DOWELS					
AD-SS	2.2L	Hollow Dowel	0.3546	0.266	0.390
MITSUBISHI					
CAM SPROCKET DOWELS					
AD-402	SOHC 2.2L, 2.5L Vin A-E, J, K.	Solid Dowel	0.2318	Solid	0.630
HEAD DOWELS					
AD-111	2.0L, 2.4L, 2.6L	Hollow Dowel	0.6300	0.500	0.505
AD-402	2.2L, 2.5L SOHC Vin A-E, J, K.	Solid Dowel	0.2318	Solid	0.630
AD-849	2.4L, 2.6L G54B 2.7L	Hollow Dowel	0.6310	0.500	0.485
AD-856	3.3L (202ci) Chrysler	Hollow Dowel	0.5913	0.452	0.488
HEAD PLUGS					
AP-019	Multiple Engines	Aluminum Plug	0.3250	Solid	0.240
TRANSMISSION DOWELS					
AD-849	2.4L, 2.6L G54B 2.7L	Hollow Dowel	0.6310	0.500	0.485
AD-021	2.4L, 2.7L, 3.3L	Hollow Dowel	11mm	8.5mm	8.3mm

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
NISSAN					
CAM TOWER DOWELS					
AD-100	Nissan	Hollow Dowel	0.4320	0.336	0.432
HEAD DOWELS					
AD-M00	1.6L, E16 Eng.	Hollow Dowel	0.5320	0.469	0.442
AD-400	1.6L (L16), 1.8L (L18), 2.0L (L20 & Z20), 2.2L (9Z22), 2.4L (L24 & Z24), 2.6L (L26), 2.8L (L28) L, Z Series	Hollow Dowel	0.5540	0.437	0.412
AD-V00	3.0L VG30 Eng.	Solid Dowel Pin	0.3750	Solid	0.570
HEAD PLUGS					
AP-018	QR25DE Eng.	Aluminum Plug	0.2200	Solid	0.180
AP-019	Multiple Engines	Aluminum Plug	0.3250	Solid	0.240
SPRING RETAINERS					
SR-809	2.5L QR25	Spring Retainer	Valve Stem Diameter 0.235		
SATURN					
HEAD DOWELS					
AD-634	1.9L	Hollow Dowel	0.5155	0.437	0.665
TRANSMISSION DOWELS					
AD-635	1.9L	Hollow Dowel	0.6080	0.500	0.905
SUBARU					
HEAD DOWELS					
AD-060	2.5L	Hollow Dowel	0.5155	0.437	0.665
BLOCK MATING DOWELS					
AD-027	2.5L EJ25 Eng.	Hollow Dowel	0.4723	0.348	1.030
SUZUKI					
HEAD DOWELS					
AD-189	1.3L, 1.6L G13, G16 Eng.	Hollow Dowel	0.5113	0.406	0.700
AD-347	Suzuki	Hollow Dowel	0.3900	0.281	0.272
OIL PUMP DOWELS					
AD-SS	1.3L	Hollow Dowel	0.3546	0.266	0.390
REAR MAIN DOWELS					
AD-SS	1.3L	Hollow Dowel	0.3546	0.266	0.390
TOYOTA					
CAM CAP/TOWER DOWELS					
AD-021	1.8L, 2.0L, 2.2L, 18R, 20R, 22R Blocks	Hollow Dowel	11mm	8.5mm	8.3mm
AD-394	1MZ-FE/3MZ-FE Eng.	Hollow Dowel	0.3940	0.294	0.322
COOLANT TUBES					
TC-5	1MZ Eng.	Coolant Tube	0.8725	0.777	3.490
HEAD DOWELS					
AD-017	1.6L (1587cc) SOHC 4AC Eng.	Hollow Dowel	0.5113	0.422	0.470
AD-8120-P	2.4L, 20R, 22R, 22RE, 22REC, 22RTEC Blocks	Solid Dowel	0.3150	Solid	0.705
AD-001	3.0L (2958cc) SOHC 3VZE Eng.	Hollow Dowel	0.6290	0.453	0.785
OIL GALLEY PLUGS					
AP-004-P	2.4L, 20R, 22R, 22RE, 22REC, 22RTEC Blocks	Oil Galley Plug	1/8-28 x .56 External Hex, w/Sealant		
AP-005-P	2.4L, 20R, 22R, 22RE, 22REC, 22RTEC Blocks	Oil Galley Plug	1/4-19 x .39 Internal Hex, w/Sealant		
AP-006-P	2.4L, 20R, 22R, 22RE, 22REC, 22RTEC Blocks	Oil Galley Plug	3/8-19 x .39 Internal Hex, w/Sealant		

ENGINE HARDWARE

PART NO.	MAKE & APPLICATION	PRODUCT TYPE	DIMENSION		
			O.D.	I.D.	LENGTH
TOYOTA (Cont'd)					
PLANETARY SLEEVES					
U140-190	All U Series Transmissions	Planetary Sleeve	0.5620	0.3780/0.3785	0.190
U140-250	All U Series Transmissions	Planetary Sleeve	0.5620	0.3780/0.3785	0.250
REAR MAIN DOWELS					
AD-021	1.8L, 2.0L, 2.2L, 18R, 20R, 22R Blocks	Hollow Dowel	11mm	8.5mm	8.3mm
ROCKER ASSEMBLY DOWELS					
AD-020	2.4L (2366cc) SOHC Toyota 22RE, REC Eng.	Hollow Dowel	0.6095	0.484	0.636
SPARK PLUG TUBES					
SPT-2	1MZ Eng.	Spark Plug Tube	1.0275	0.965	3.755
SPT-3	5VZ Eng.	Spark Plug Tube	1.0275	0.965	4.025
SPT-5	5SFE Eng.	Spark Plug Tube	1.1040	0.950	4.325
SPT-7	3.5L, 2GR-FE Eng.	Spark Plug Tube	1.0265	0.965	5.198
SPT-9	4.7L, 2UZ-FE Eng.	Spark Plug Tube	1.0265	0.965	3.910
TENSIONER BOLTS & WASHERS					
AW-012-P	2.4L, 20R, 22R, 22RE, 22REC, 22RTEC Blocks	Lock Washer	8mm Lock Washer		
TIMING COVER DOWELS					
AD-021	1.8L, 2.0L, 2.2L, 2.4L, 18R, 20R, 22R, 22RE, 22REC, 22RTEC Blocks	Hollow Dowel	11mm	8.5mm	8.3mm
TRANSMISSION DOWELS					
AD-0113	2.4L, 20R, 22R, 22RE, 22REC, 22RTEC Blocks	Solid Dowel	10mm	Solid	22mm
WATER PLUGS					
AP-841	3.4L 5VZ-FE Eng.	Water Drain Cock Plug	N/A	N/A	1.112
AP-006-P	2.4L, 20R, 22R, 22RE, 22REC, 22RTEC Blocks	Water Plug	3/8-19 x .39 Internal Hex, w/Sealant		
WATER PUMP DOWELS					
AD-021	1.8L, 2.0L, 2.2L, 18R, 20R, 22R Blocks	Hollow Dowel	11mm	8.5mm	8.3mm
WOODRUFF KEYS					
AK-011-P	2.4L, 20R, 22R, 22RE, 22REC, 22RTEC Blocks	Woodruff Key	5mm x 18mm		
AK-033-P	1MZ-FE	Woodruff Key	5mm x 16mm		
WAUKESHA					
EXPANSION PLUGS					
DP-22-P	3.6L (220ci) VRD220, VRD220S, VRG220	Expansion Plug	2-1/4 Disc Plug		
SPRING RETAINERS					
SR-014	VGF F18/H24GL/GLD LCR/HCR, L36/P48GL/GLD HCR	Spring Retainer	Valve Stem Diameter 0.430/0.431		

ENGINE HARDWARE COMPONENT LISTING

Bolt - Specifications

Size		Numerical	
PART #	DIMENSION	PART #	DIMENSION
AB-017-P	1/4-20 x 1/2 Frame Bolt, Hex	AB-001-P	5/16-18 x 3/4 Hex
AB-004-P	1/4-20 x 1/2 Machine Screw, Torx	AB-002-P	1/4-20 x 1-3/4 Machine Screw, Torx
AB-011-P	1/4-20 x 1/2 Place Bolt, Hex	AB-003-P	1/4-20 x 7/8 Machine Screw, Torx
AB-024-P	1/4-20 x 1/2 Sims Bolt, Hex	AB-004-P	1/4-20 x 1/2 Machine Screw, Torx
AB-010-P	1/4-20 x 5/8 Hex	AB-005-P	5/16-18 x 5/8 Flanged Hex
AB-006-P	1/4-20 x 5/8 Machine Screw, Torx	AB-006-P	1/4-20 x 5/8 Machine Screw, Torx
AB-016-P	1/4-20 x 3/4 Frame Bolt, Hex	AB-007-P	5/16-18 x 1-3/8 Hex
AB-003-P	1/4-20 x 7/8 Machine Screw, Torx	AB-009-P	3/8-16 x 1-1/2 Hex
AB-002-P	1/4-20 x 1-3/4 Machine Screw, Torx	AB-010-P	1/4-20 x 5/8 Hex
AB-005-P	5/16-18 x 5/8 Flanged Hex	AB-011-P	1/4-20 x 1/2 Place Bolt, Hex
AB-023-P	5/16-18 x 5/8 Sims Bolt, Hex	AB-012-P	7/16-14 x 1-1/4 Hex
AB-001-P	5/16-18 x 3/4 Hex	AB-013-P	7/16-14 x 1-3/4 Hex
AB-020-P	5/16-18 x 7/8 Frame Bolt, Hex	AB-014-P	3/8-16 x 1-3/8 Hex
AB-039-P	5/16-18 x 1-1/16 Cap Screw	AB-015-P	7/16-14 x 5/8 Hex
AB-007-P	5/16-18 x 1-3/8 Hex	AB-016-P	1/4-20 x 3/4 Frame Bolt, Hex
AB-019-P	5/16-18 x 1-1/2 Hex	AB-017-P	1/4-20 x 1/2 Frame Bolt, Hex
AB-042-P	3/8-16 x 3/4 Hex	AB-018-P	7/16-14 x 2-1/4 Bolt, Hex
AB-021-P	3/8-16 x 5/8 Hex	AB-019-P	5/16-18 x 1-1/2 Hex
AB-026-P	3/8-16 x 1-1/4 Bolt, Hex	AB-020-P	5/16-18 x 7/8 Frame Bolt, Hex
AB-014-P	3/8-16 x 1-3/8 Hex	AB-021-P	3/8-16 x 5/8 Hex
AB-009-P	3/8-16 x 1-1/2 Hex	AB-022-P	7/16-14 x 2 Bolt, Hex
AB-015-P	7/16-14 x 5/8 Hex	AB-023-P	5/16-18 x 5/8 Sims Bolt, Hex
AB-040-P	7/16-14 x 1 Hex	AB-024-P	1/4-20 x 1/2 Sims Bolt, Hex
AB-012-P	7/16-14 x 1-1/4 Hex	AB-026-P	3/8-16 x 1-1/4 Bolt, Hex
AB-013-P	7/16-14 x 1-3/4 Hex	AB-027-P	15/16-18 x 1/2 Hex
AB-022-P	7/16-14 x 2 Bolt, Hex	AB-030-P	1/2-20 x 1-1/4 Hex
AB-018-P	7/16-14 x 2-1/4 Bolt, Hex	AB-031-P	1/2-20 x 1 Hex
AB-031-P	1/2-20 x 1 Hex	AB-032-P	10mm-1.5 x 34mm Hex, 35mm Integral Washer
AB-030-P	1/2-20 x 1-1/4 Hex	AB-033-P	6mm-1.0 x 19mm Flat Head Torx
AB-027-P	15/16-18 x 1/2 Hex	AB-034-P	6mm-1.0 x 14mm Hex
AB-034-P	6mm-1.0 x 14mm Hex	AB-039-P	5/16-18 x 1-1/16 Cap Screw
AB-033-P	6mm-1.0 x 19mm Flat Head Torx	AB-040-P	7/16-14 x 1 Hex
AB-044-P	8mm-1.25 x 22mm, Flat Head Torx	AB-042-P	3/8-16 x 3/4 Hex
AB-046-P	8mm-1.25 x 24mm, Hex	AB-044-P	8mm-1.25 x 22mm, Flat Head Torx
AB-045-P	8mm-1.25 x 30mm, Hex	AB-045-P	8mm-1.25 x 30mm, Hex
AB-032-P	10mm-1.5 x 34mm Hex, 35mm Integral Washer	AB-046-P	8mm-1.25 x 24mm, Hex
AB-840-P	16mm-2.0 x 103mm Hex	AB-840-P	16mm-2.0 x 103mm Hex

ENGINE HARDWARE COMPONENT LISTING

Dowel Pin - Specifications

PART #	Size		
	O.D.	I.D.	LENGTH
AD-402	0.2318	Solid	0.630
AD-016-P	0.2326	Solid	0.645
AD-1284-P	0.2466	Solid	0.630
AD-046	0.2483/0.3435	Solid	0.945
AD-6397	0.2485/0.3140	Solid	0.700
AD-025-P	0.2500	Solid	0.500
AD-006-P	0.3090	Solid	1.500
AD-005-P	0.3115	Solid	1.125
AD-004-P	0.3115	Solid	1.375
AD-927-P	0.3125	Solid	0.565
AD-126	0.3140	0.261	0.410
AD-015	0.3140	0.261	0.455
AD-8120-P	0.3150	Solid	0.705
AD-SS	0.3546	0.266	0.390
AD-V00	0.3750	Solid	0.570
AD-347	0.3900	0.281	0.272
AD-024	0.3937	0.328	0.627
AD-394	0.3940	0.294	0.322
AD-466	0.3973	0.281	0.305
AD-242	0.4250	Solid	0.685
AD-100	0.4320	0.336	0.432
AD-026	0.4325	0.343	0.240
AD-307-P	0.4327	0.343	0.311
AD-008DA	0.4333	0.360	0.437
AD-022	0.4350	0.343	0.500
AD-679	0.4386	Solid	0.813
AD-003-P	0.4445	0.297	0.562
AD-027	0.4723	0.348	1.030
AD-967	0.4820	0.385	0.550
AD-520	0.4881	0.400	0.670
AD-532	0.4960	Solid	0.740
AD-397	0.5000	Solid	1.000
AD-E7RY	0.5010	0.406	0.650
AD-189	0.5113	0.406	0.700
AD-017	0.5113	0.422	0.470
AD-634	0.5155	0.437	0.665
AD-M00	0.5320	0.469	0.442
AD-270	0.5510	0.410	0.485
AD-400	0.5540	0.437	0.412
AD-300	0.5555	0.468	0.470
AD-050	0.5562	0.500	0.745
AD-148	0.5615	0.454	0.812
AD-060	0.5793	0.514	0.706
AD-013	0.5820	0.484	0.945
AD-018	0.5820/0.5910	0.484	0.945
AD-002	0.5825	0.500	0.355
AD-856	0.5913	0.452	0.488
AD-600	0.6050	0.475	0.550
AD-521	0.6074	0.510	0.800
AD-635	0.6080	0.500	0.905
AD-020	0.6095	0.484	0.636
AD-010-P	0.6120	0.466	0.600
AD-352	0.6165	0.500	1.100
AD-047	0.6206	Solid	1.185
AD-598	0.6210	0.406	0.700
AD-009-P	0.6210	Solid	1.150

PART #	Numerical		
	O.D.	I.D.	LENGTH
AD-0001	0.7550	0.523	0.500
AD-001	0.6290	0.453	0.785
AD-002	0.5825	0.500	0.355
AD-003-P	0.4445	0.297	0.562
AD-004-P	0.3115	Solid	1.375
AD-005-P	0.3115	Solid	1.125
AD-006-P	0.3090	Solid	1.500
AD-008-P	0.6745	0.552	0.435
AD-008A-P	0.7400	0.625	0.445
AD-008DA	0.4333	0.360	0.437
AD-009-P	0.6210	Solid	1.150
AD-010-P	0.6120	0.466	0.600
AD-011-P	17mm	15mm	19mm
AD-0112	0.6250/0.5620	0.450	0.500
AD-0113	10mm	Solid	22mm
AD-012-P	9mm	Solid	22mm
AD-013	0.5820	0.484	0.945
AD-015	0.3140	0.261	0.455
AD-016-P	0.2326	Solid	0.645
AD-017	0.5113	0.422	0.470
AD-018	0.5820/0.5910	0.484	0.945
AD-020	0.6095	0.484	0.636
AD-021	11mm	8.5mm	8.3mm
AD-022	0.4350	0.343	0.500
AD-023	0.6210	Solid	1.550
AD-024	0.3937	0.328	0.627
AD-025-P	0.2500	Solid	0.500
AD-026	0.4325	0.343	0.240
AD-027	0.4723	0.348	1.030
AD-047	0.6206	Solid	1.185
AD-046	0.2483/0.3435	Solid	0.945
AD-050	0.5562	0.500	0.745
AD-060	0.5793	0.514	0.706
AD-076	0.7275	0.500	0.750
AD-100	0.4320	0.336	0.432
AD-111	0.6300	0.500	0.505
AD-125	0.7408	0.656	0.870
AD-126	0.3140	0.261	0.410
AD-148	0.5615	0.454	0.812
AD-189	0.5113	0.406	0.700
AD-230	0.7200	0.615	0.395
AD-242	0.4250	Solid	0.685
AD-250	0.7600	0.640	0.635
AD-258	0.6250	0.523	0.500
AD-270	0.5510	0.410	0.485
AD-300	0.5555	0.468	0.470
AD-307-P	0.4327	0.343	0.311
AD-326	0.6420	0.516	0.500
AD-347	0.3900	0.281	0.272
AD-352	0.6165	0.500	1.100
AD-394	0.3940	0.294	0.322
AD-397	0.5000	Solid	1.000
AD-397A	0.6305	0.469	0.984
AD-400	0.5540	0.437	0.412
AD-402	0.2318	Solid	0.630
AD-466	0.3973	0.281	0.305

ENGINE HARDWARE COMPONENT LISTING

Dowel Pin - Specifications (Cont'd)

Size				Numerical			
PART #	O.D.	I.D.	LENGTH	PART #	O.D.	I.D.	LENGTH
AD-023	0.6210	Solid	1.550	AD-520	0.4881	0.400	0.670
AD-258	0.6250	0.523	0.500	AD-521	0.6074	0.510	0.800
AD-0112	0.6250/0.5620	0.450	0.500	AD-532	0.4960	Solid	0.740
AD-001	0.6290	0.453	0.785	AD-593	0.6970/0.7775	0.599	0.770
AD-111	0.6300	0.500	0.505	AD-598	0.6210	0.406	0.700
AD-397A	0.6305	0.469	0.984	AD-600	0.6050	0.475	0.550
AD-849A	0.6313	0.500	0.385	AD-605	1.4985	1.092	1.075
AD-849	0.6313	0.500	0.485	AD-634	0.5155	0.437	0.665
AD-8081-P	0.6400	0.500	0.500	AD-635	0.6080	0.500	0.905
AD-326	0.6420	0.516	0.500	AD-6397	0.2485/0.3140	Solid	0.700
AD-008-P	0.6745	0.552	0.435	AD-640	0.7783	0.700	0.755
AD-593	0.6970/0.7775	0.599	0.770	AD-679	0.4386	Solid	0.813
AD-230	0.7200	0.615	0.395	AD-699	1.4985	0.830	0.924
AD-076	0.7275	0.500	0.750	AD-842	0.7570	0.491	1.160
AD-008A-P	0.7400	0.625	0.445	AD-849	0.6313	0.500	0.485
AD-125	0.7408	0.656	0.870	AD-849A	0.6313	0.500	0.385
AD-0001	0.7550	0.523	0.500	AD-856	0.5913	0.452	0.488
AD-842	0.7570	0.491	1.160	AD-927-P	0.3125	Solid	0.565
AD-250	0.7600	0.640	0.635	AD-967	0.4820	0.385	0.550
AD-640	0.7783	0.700	0.755	AD-1284-P	0.2466	Solid	0.630
FD-1-1	0.9395	0.834	0.572	AD-8081-P	0.6400	0.500	0.500
AD-699	1.4985	0.830	0.924	AD-8120-P	0.3150	Solid	0.705
AD-605	1.4985	1.092	1.075	AD-E7RY	0.5010	0.406	0.650
AD-012-P	9mm	Solid	22mm	AD-M00	0.5320	0.469	0.442
AD-0113	10mm	Solid	22mm	AD-SS	0.3546	0.266	0.390
AD-021	11mm	8.5mm	8.3mm	AD-V00	0.3750	Solid	0.570
AD-011-P	17mm	15mm	19mm	FD-1-1	0.9395	0.834	0.572

Pipe Plug - Specifications

Size		Numerical	
PART #	DIMENSION	PART #	DIMENSION
AP-001-P	1/16-27 x 1/4 Internal Hex	AP-001-P	1/16-27 x 1/4 Internal Hex
AP-004-P	1/8-28 x .56 External Hex, w/Sealant	AP-002-P	1/4-18 x .33 Internal Hex, w/Sealant
AP-002-P	1/4-18 x .33 Internal Hex, w/Sealant	AP-003-P	3/8-18 x .46 Internal Hex, w/Sealant
AP-017-P	1/4-18 x .33 Internal Hex	AP-004-P	1/8-28 x .56 External Hex, w/Sealant
AP-016-P	1/4-18 x .37 Internal Hex	AP-005-P	1/4-19 x .39 Internal Hex, w/Sealant
AP-024-P	1/4-18 x .46 Internal Hex, w/Sealant	AP-006-P	3/8-19 x .39 Internal Hex, w/Sealant
AP-005-P	1/4-19 x .39 Internal Hex, w/Sealant	AP-016-P	1/4-18 x .37 Internal Hex
AP-003-P	3/8-18 x .46 Internal Hex, w/Sealant	AP-017-P	1/4-18 x .33 Internal Hex
AP-006-P	3/8-19 x .39 Internal Hex, w/Sealant	AP-024-P	1/4-18 x .46 Internal Hex, w/Sealant

Valve Spring ID Locators - Specifications

Size				Numerical			
PART #	O.D.	I.D.	THICKNESS	PART #	O.D.	I.D.	THICKNESS
4785HP	1.550	.570/Spring (.810)	0.060	4785HP	1.550	.570/Spring (.810)	0.060

ENGINE HARDWARE COMPONENT LISTING

Valve Spring Retainers - Specifications

Size		
PART #	VALVE STEM DIAMETER	DIMENSION OUTSIDE/STEPS
SR-220	0.234/0.235	0.982/0.590/0.484
SR-809	0.235	0.962/0.697/0.491
SR-570	0.272/0.273	0.897/0.594/0.544
SR-626	0.311/0.312	1.144/0.830/0.562
SR-627	0.311/0.312	1.144/0.828/0.572
SR-779	0.315	1.080/0.750/0.612
SR-536	0.315/0.316	1.275/0.958/0.570
SR-183	0.316	1.310/0.873/0.760
SR-500	0.341/0.342	1.236/0.862/0.675
SR-502	0.342	1.370/1.056/0.665
SR-318	0.370/0.373	1.330/1.000/0.600
SR-366	0.372	1.407/1.058/0.900
SR-014	0.430/0.431	1.570/1.207/0.840

Numerical		
PART #	VALVE STEM DIAMETER	DIMENSION OUTSIDE/STEPS
SR-014	0.430/0.431	1.570/1.207/0.840
SR-183	0.316	1.310/0.873/0.760
SR-220	0.234/0.235	0.982/0.590/0.484
SR-318	0.370/0.373	1.330/1.000/0.600
SR-366	0.372	1.407/1.058/0.900
SR-500	0.341/0.342	1.236/0.862/0.675
SR-502	0.342	1.370/1.056/0.665
SR-536	0.315/0.316	1.275/0.958/0.570
SR-570	0.272/0.273	0.897/0.594/0.544
SR-626	0.311/0.312	1.144/0.830/0.562
SR-627	0.311/0.312	1.144/0.828/0.572
SR-779	0.315	1.080/0.750/0.612
SR-809	0.235	0.962/0.697/0.491

Washer - Specifications

Size	
PART #	DIMENSION
AW-009-P	5/16 Star Washer
AW-007-P	3/8 Washer
AW-008-P	1/2 x .900 x .078 Nylon Washer
AW-001-P	1-1/4 x 3/8 x 1/4 Washer
AW-003-P	1-1/4 x 7/16 x 1/4 Washer
AW-010-P	1-3/8 x 1/2 x 3/16 Washer
AW-006-P	1-1/2 x 7/16 x 1/8 Washer
AW-002-P	1-1/2 x 7/16 x 5/16 Washer
AW-005-P	1-1/2 x 7/16 x 7/16 Washer
AW-011-P	2-1/16 x 1/2 x 3/16 Washer
AW-012-P	8mm Lock Washer

Numerical	
PART #	DIMENSION
AW-001-P	1-1/4 x 3/8 x 1/4 Washer
AW-002-P	1-1/2 x 7/16 x 5/16 Washer
AW-003-P	1-1/4 x 7/16 x 1/4 Washer
AW-005-P	1-1/2 x 7/16 x 7/16 Washer
AW-006-P	1-1/2 x 7/16 x 1/8 Washer
AW-007-P	3/8 Washer
AW-008-P	1/2 x .900 x .078 Nylon Washer
AW-009-P	5/16 Star Washer
AW-010-P	1-3/8 x 1/2 x 3/16 Washer
AW-011-P	2-1/16 x 1/2 x 3/16 Washer
AW-012-P	8mm Lock Washer

ENGINE HARDWARE COMPONENT LISTING

Woodruff Key - Specifications

Size			Numerical		
PART #	WIDTH X LENGTH	PIONEER #	PART #	WIDTH X LENGTH	PIONEER #
AK-024-P	3/32 x 1/2	PK-2	AK-001-P	3/16 x 1-3/8	PK-126
AK-019-P	3/32 x 5/8	PK-4	AK-002-P	3/16 x 3/4	PK-9
AK-017-P	1/8 x 3/4	PK-7	AK-003-P	3/16 x 1-13/32	PK-131
AK-015-P	5/32 x 5/8	PK-6	AK-004-P	3/16 x 1-3/4	PK-130
AK-018-P	5/32 x 3/4	PK-8	AK-005-P	3/16 x 1-13/16	PK-178, 192
AK-025-P	5/32 x 7/8	PK-10	AK-006-P	3/16 x 1-13/32	PK-134
AK-031-P	3/16 x 19/32	PK-187	AK-007-P	3/16 x 1-3/4	PK-135
AK-002-P	3/16 x 3/4	PK-9	AK-008-P	1/4 x 55/64	PK-174
AK-010-P	3/16 x 7/8	PK-11	AK-010-P	3/16 x 7/8	PK-11
AK-026-P	3/16 x 1	PK-13	AK-011-P	5mm x 18mm	NA
AK-028-P	3/16 x 1-3/64	PK-179	AK-012-P	15/64 x 23/32	PK-171
AK-001-P	3/16 x 1-3/8	PK-126	AK-013-P	5/16 x 1-7/64	PK-175
AK-003-P	3/16 x 1-13/32	PK-131	AK-014-P	1/4 x 1-3/8	PK-127
AK-006-P	3/16 x 1-13/32	PK-134	AK-015-P	5/32 x 5/8	PK-6
AK-032-P	3/16 x 1-31/64	NA	AK-016-P	5/16 x 31/32	PK-173
AK-004-P	3/16 x 1-3/4	PK-130	AK-017-P	1/8 x 3/4	PK-7
AK-007-P	3/16 x 1-3/4	PK-135	AK-018-P	5/32 x 3/4	PK-8
AK-005-P	3/16 x 1-13/16	PK-178, 192	AK-019-P	3/32 x 5/8	PK-4
AK-035-P	3/16 x 1.072	NA	AK-020-P	1/4 x 1-1/4	PK-21
AK-037-P	3/16 x 1.900	NA	AK-021-P	3/8 x 2-1/8	PK-29
AK-034-P	3/16 x 2.007	NA	AK-022-P	1/4 x 3/4	PK-91
AK-166-P	3/16 x 2.367	NA	AK-023-P	5/16 x 1-1/4	PK-D
AK-029-P	13/64 x 39/64	PK-188	AK-024-P	3/32 x 1/2	PK-2
AK-030-P	13/64 x 45/64	PK-189	AK-025-P	5/32 x 7/8	PK-10
AK-012-P	15/64 x 23/32	PK-171	AK-026-P	3/16 x 1	PK-13
AK-022-P	1/4 x 3/4	PK-91	AK-027-P	1/4 x 1	PK-15
AK-008-P	1/4 x 55/64	PK-174	AK-028-P	3/16 x 1-3/64	PK-179
AK-027-P	1/4 x 1	PK-15	AK-029-P	13/64 x 39/64	PK-188
AK-020-P	1/4 x 1-1/4	PK-21	AK-030-P	13/64 x 45/64	PK-189
AK-014-P	1/4 x 1-3/8	PK-127	AK-031-P	3/16 x 19/32	PK-187
AK-016-P	5/16 x 31/32	PK-173	AK-032-P	3/16 x 1-31/64	NA
AK-013-P	5/16 x 1-7/64	PK-175	AK-033-P	5mm x 16mm	NA
AK-023-P	5/16 x 1-1/4	PK-D	AK-034-P	3/16 x 2.007	NA
AK-021-P	3/8 x 2-1/8	PK-29	AK-035-P	3/16 x 1.072	NA
AK-033-P	5mm x 16mm	NA	AK-037-P	3/16 x 1.900	NA
AK-011-P	5mm x 18mm	NA	AK-166-P	3/16 x 2.367	NA

Does This Look Familiar?



Well, Dura-Bond Has The Solution For You.

Save time and money with the new line of Dura-Bond engine hardware finishing kits.

Most rebuilders know the time and expense of trying to reclaim service parts. A recent study revealed that an average rebuilder could spend up to 15-20 minutes per engine searching for a reclaimed service part. That is why Dura-Bond has introduced a new line of engine hardware finishing kits. These kits include all of the necessary hardware and components needed to complete a rebuild such as dowel pins, cam bolts, seal housing components, woodruff keys, cam eccentrics, by-pass valves, etc. The engine hardware finishing kits allow rebuilders an easy way to inventory and recoup lost costs on these components. All this adds up to saving time and money.



- No need for expensive OEM parts or the time to reclaim used parts
- Easy to inventory
- Maximize lost costs and profits on these components by adding one part number into the bill of materials
- New parts vs. reclaimed parts presents a more professional looking product
- All kit components are manufactured to precise OEM dimensions for exact fit
- Extensive product coverage



"Cam Bearings Since 1947"

New Engine Hardware Kits for GM LS Engines



FKC-6, FKC-7

KIT NO.	YEAR	MAKE & APPLICATION	CONTENTS	QTY.	DESCRIPTION
FKC-6	1999-2000	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-258	4	Head Dowel
	1999-2000	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-045-P	8	Timing Cover Bolt
	1998-2000	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AB-046-P	4	Cam Sprocket Bolt
	1999-2000	6.0L (364ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt
				AK-001-P	1
			AB-046-P	4	Seal Housing Bolt
			AP-860-P	1	Oil Galley Plug
			AP-023-P	1	Oil Galley Plug (Front)
FKC-7	2001-2013	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-326	4	Head Dowel
	2001-2013	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-045-P	8	Timing Cover Bolt
	2001-2005	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AB-046-P	4	Cam Sprocket Bolt
	2001-2013	6.0L (364ci) Chevrolet (Vortec) Eng.	AK-044-P	3	Cam Thrust Plate Bolt
	2008-2013	6.2L (376ci) Chevrolet (Vortec) Eng.	AK-001-P	1	Woodruff Key
	2007-2008	6.2L (378ci) Chevrolet (Vortec) Eng.	AB-046-P	4	Seal Housing Bolt
	2006-2013	7.0L (427ci) Chevrolet (LS-7) Eng.	AP-860-P	1	Oil Galley Plug
			AP-023-P	1	Oil Galley Plug (Front)



FKC-6B, FKC-7B

KIT NO.	YEAR	MAKE & APPLICATION	CONTENTS	QTY.	DESCRIPTION
FKC-6B	1999-2000	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-258	4	Head Dowel
	1999-2000	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt
	1998-2000	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AK-001-P	1	Woodruff Key
	1999-2000	6.0L (364ci) Chevrolet (Vortec) Eng.	AP-860-P	1	Oil Galley Plug
				AP-023-P	1
FKC-7B	2001-2013	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-326	4	Head Dowel
	2001-2013	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt
	2001-2005	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AK-001-P	1	Woodruff Key
	2001-2013	6.0L (364ci) Chevrolet (Vortec) Eng.	AP-860-P	1	Oil Galley Plug
	2008-2013	6.2L (376ci) Chevrolet (Vortec) Eng.	AP-023-P	1	Oil Galley Plug (Front)
	2007-2008	6.2L (378ci) Chevrolet (Vortec) Eng.			
	2006-2013	7.0L (427ci) Chevrolet (LS-7) Eng.			

New Engine Hardware Kits for GM LS Engines



FKC-6C, FKC-7C

KIT NO.	YEAR	MAKE & APPLICATION	CONTENTS	QTY.	DESCRIPTION
FKC-6C	1999-2000	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-258	4	Head Dowel
	1999-2000	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt
	1998-2000	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AK-001-P	1	Woodruff Key
	1999-2000	6.0L (364ci) Chevrolet (Vortec) Eng.	AP-860-P	1	Oil Galley Plug
				AP-023-P	1
			AB-840-P	1	Harmonic Balancer Bolt
			AD-047	2	Transmission / Bellhousing Dowel
FKC-7C	2001-2013	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-326	4	Head Dowel
	2001-2013	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt
	2001-2005	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AK-001-P	1	Woodruff Key
	2001-2013	6.0L (364ci) Chevrolet (Vortec) Eng.	AP-860-P	1	Oil Galley Plug
	2008-2013	6.2L (376ci) Chevrolet (Vortec) Eng.	AP-023-P	1	Oil Galley Plug (Front)
	2007-2008	6.2L (378ci) Chevrolet (Vortec) Eng.	AB-840-P	1	Harmonic Balancer Bolt
	2006-2013	7.0L (427ci) Chevrolet (LS-7) Eng.	AD-047	2	Transmission / Bellhousing Dowel

High Performance Hardware Kits



FKP-2HP, FKC-1HP, FKC-3HP

Application:

FKP-2HP: CHRYSLER (361ci-440ci) SB V8

FKC-1HP: GM (262ci-400ci) SB V8 (1957-1986)

FKC-3HP: GM (366ci-454ci) BB V8 (1967-1991)

New Engine Hardware Kit for Chrysler Hemi Gen III Engines



FKP-3

Application:

CHRYSLER 5.7L, 6.1L, 6.4L Hemi Gen III

ENGINE HARDWARE FINISHING KITS

KIT NO.	YEAR	MAKE & APPLICATION	CONTENTS	QTY.	DESCRIPTION	DIMENSION					
						O.D.	I.D.	LENGTH			
AMC											
FKA-1	1964-1996	(199ci-258ci) AMC I6	AD-927-P	2	Head Dowel	0.3125	Solid	0.565			
			AB-030-P	1	Cam Bolt	1/2-20 x 1-1/4 Hex					
			AW-011-P	1	Cam Bolt Washer	2-1/16 x 1/2 x 3/16 Washer					
			AK-002-P	2	Woodruff Key	3/16 x 3/4					
			AK-010-P	1	Woodruff Key	3/16 x 7/8					
			AD-007-P	1	Oil Filter Pin (Roll Pin)	1/4 x 1-1/2					
			Optional parts not included in kit.								
			AD-148	2	Transmission Dowel	0.5615	0.454	0.812			
			CHRYSLER								
			FKP-1	1964-2005	(273ci-360ci) Dodge/Chrysler/ Plymouth SB V8	AD-927-P	4	Head Dowel	0.3125	Solid	0.565
AB-012-P	1	Cam Bolt				7/16-14 x 1-1/4 Hex					
AW-002-P	1	Cam Bolt Washer (Cupped)				1-1/2 x 7/16 x 5/16 Washer					
AK-005-P	1	Woodruff Key				3/16 x 1-13/16					
AK-002-P	1	Cam Key				3/16 x 3/4					
AB-001-P	3	Cam Thrust Plate Bolt				5/16-18 x 3/4 Hex					
AS-001-P	1	Chain Oil Tab				N/A	N/A	N/A			
AD-584	1	Distributor Tower Shaft Bushing				N/A	N/A	N/A			
ROLLER BLOCK											
AB-005-P	3	Cam Tray Bolt				5/16-18 x 5/8 Flanged Hex					
AW-006-P	1	Cam Bolt Washer (Tapered)				1-1/2 x 7/16 x 1/8 Washer					
AW-005-P	1	Cam Bolt Washer (Cupped)				1-1/2 x 7/16 x 7/16 Washer					
Optional parts not included in kit.											
AD-532	2	Transmission Dowel				0.4960	Solid	0.740			
FKP-2		(361ci-440ci) Dodge/Chrysler/ Plymouth SB V8				AD-1284-P	4	Head Dowel	0.2466	Solid	0.630
						AD-1284-P	2	Timing Cover	0.2466	Solid	0.630
						AB-040-P	1	Cam Bolt	7/16-14 x 1 Hex		
			AW-006-P	1	Cam Bolt Washer (Tapered)	1-1/2 x 7/16 x 1/8 Washer					
			AD-584	1	Distributor Tower Shaft Bushing	N/A	N/A	N/A			
			AK-005-P	1	Woodruff Key	3/16 x 1-13/16					
			Optional parts not included in kit.								
			AD-532	2	Transmission Dowel	0.4960	Solid	0.740			
			FKP-2HP		(361ci-440ci) Dodge/Chrysler/ Plymouth SB V8 (High Performance)	AD-1284-P	4	Head Dowel	0.2466	Solid	0.630
						AD-1284-P	2	Timing Cover	0.2466	Solid	0.630
AB-040-P	1	Cam Bolt				7/16-14 x 1 Hex					
AW-006-P	1	Cam Bolt Washer (Tapered)				1-1/2 x 7/16 x 1/8 Washer					
AB-042-P	3	Cam Bolt				3/8-16 x 3/4 Hex					
AD-584	1	Distributor Tower Shaft Bushing				N/A	N/A	N/A			
AK-005-P	1	Woodruff Key				3/16 x 1-13/16					
Optional parts not included in kit.											
AD-532	2	Transmission Dowel				0.4960	Solid	0.740			
FKP-3		5.7L, 6.1L, 6.4L Hemi Gen III				AD-466	2	Crank Seal Retainer Carrier Dowel	0.3973	0.281	0.305
			FP-0009-P	1	Oil Indicator Tube Plug	10.6 MMC					
			FP-0008-P	4	Expansion Plug	1-1/4" Shallow Cup					
			AD-849	4	Head Dowel	0.6313	0.500	0.485			
			AP-024-P	3	Oil Galley Plug	1/4-18 x .46 Internal Hex, w/Sealant					
			AP-003-P	5	Oil Galley Plug	3/8-18 x .46 Internal Hex, w/Sealant					
			FP-0007-P	1	Cam Plug (Rear)	N/A	N/A	N/A			
			AK-035-P	1	Woodruff Key	3/16 x 1.072					
			Optional parts not included in kit.								
			AD-532	2	Transmission Dowel	0.4960	Solid	0.740			
			FORD								
			FKF-5	1989-1993	3.8L (232ci) Ford V6	AD-011-P	4	Head Dowel (Split)	17mm	15mm	19mm
						AD-520	2	Timing Cover Dowel	0.4881	0.400	0.670
AB-032-P	1	Cam Bolt & Washer				10mm-1.5 x 34mm Hex, 35mm Integral Washer					
AB-033-P	2	Cam Thrust Plate Bolt				6mm-1.0 x 19mm Flat Head Torx					
AB-034-P	3	Tensioner Bolt				6mm-1.0 x 14mm Hex					
AK-003-P	1	Woodruff Key				3/16 x 1-13/32					
BALANCE SHAFT											
AB-033-P	2	Balance Shaft Thrust Plate Bolt				6mm-1.0 x 19mm Flat Head Torx					
Optional parts not included in kit.											
AD-397	2	Transmission Dowel RWD				0.5000	Solid	1.000			
AD-521	2	Transmission Dowel FWD				0.6074	0.510	0.800			

ENGINE HARDWARE FINISHING KITS

KIT NO.	YEAR	MAKE & APPLICATION	CONTENTS	QTY.	DESCRIPTION	DIMENSION					
						O.D.	I.D.	LENGTH			
FORD (Cont'd)											
FKF-4	1965-1996	(240ci, 300ci) Ford I6	AD-008-P	2	Head Dowel	0.6745	0.552	0.435			
			AB-001-P	2	Cam Thrust Plate Bolt	5/16-18 x 3/4 Hex					
			AK-004-P	1	Woodruff Key	3/16 x 1-3/4					
			AK-002-P	1	Cam Key	3/16 x 3/4					
			AS-002	1	Spacer	1.5160	1.255	0.194			
			AP-001-P	1	Oil Galley Plug	1/16-27 x 1/4 Internal Hex					
			Optional parts not included in kit.								
			AD-397	2	Transmission Dowel	0.5000	Solid	1.000			
			FORD (Cont'd)								
			FKF-1	1962-1985	(255ci-351ci) Ford SB V8 (Windsor)	AD-008-P	4	Head Dowel	0.6745	0.552	0.435
AD-967-P	2	Timing Cover Dowel				0.4820	0.385	0.550			
AB-009-P	1	Cam Bolt				3/8-16 x 1-1/2 Hex					
AW-001-P	1	Cam Bolt Washer				1-1/4 x 3/8 x 1/4 Washer					
AB-010-P	2	Cam Thrust Plate Bolt				1/4-20 x 5/8 Hex					
AK-003-P	2	Woodruff Key				3/16 x 1-13/32					
AK-004-P	1	Woodruff Key				3/16 x 1-3/4					
AE-001-P	1	Cam Eccentric - Inner				N/A	N/A	N/A			
AE-002-P	1	Cam Eccentric - Outer				N/A	N/A	N/A			
AD-005-P	1	Cam Sprocket Dowel				0.3115	Solid	1.125			
Optional parts not included in kit.											
AD-397	2	Transmission Dowel				0.5000	Solid	1.000			
FORD (Cont'd)											
FKF-1A	1986-2000	5.0L, 5.8L Ford SB V8				AD-008-P	4	Head Dowel	0.6745	0.552	0.435
			AD-967-P	2	Timing Cover Dowel	0.4820	0.385	0.550			
			AB-009-P	1	Cam Bolt	3/8-16 x 1-1/2 Hex					
			AW-001-P	1	Cam Bolt Washer	1-1/4 x 3/8 x 1/4 Washer					
			AB-010-P	2	Cam Thrust Plate Bolt	1/4-20 x 5/8 Hex					
			AK-003-P	1	Woodruff Key	3/16 x 1-13/32					
			AK-004-P	1	Woodruff Key	3/16 x 1-3/4					
			AE-003-P	1	Cam Eccentric	N/A	N/A	N/A			
			AD-004-P	1	Cam Sprocket Dowel	0.3115	Solid	1.375			
			ROLLER BLOCK								
			AB-011-P	2	Cam Tray Bolt	1/4-20 x 1/2 Place Bolt, Hex					
			Optional parts not included in kit.								
			AD-397	2	Transmission Dowel	0.5000	Solid	1.000			
			FORD (Cont'd)								
FKF-2	1958-1976	(332ci-428ci) Ford FE V8	AD-008A-P	4	Head Dowel (Split)	0.7400	0.625	0.445			
			AB-013-P	1	Cam Bolt	7/16-14 x 1-3/4 Hex					
			AW-003-P	1	Cam Bolt Washer	1-1/4 x 7/16 x 1/4 Washer					
			AB-015-P	2	Cam Thrust Plate Bolt	7/16-14 x 5/8 Hex					
			AK-006-P	1	Woodruff Key	3/16 x 1-13/32					
			AE-004-P	1	Cam Eccentric - Inner	N/A	N/A	N/A			
			AE-002-P	1	Cam Eccentric - Outer	N/A	N/A	N/A			
			AD-006-P	1	Cam Sprocket Dowel	0.3090	Solid	1.500			
			Optional parts not included in kit.								
			AD-397	2	Transmission Dowel	0.5000	Solid	1.000			
FORD (Cont'd)											
FKF-6	1970-1982	(351ci, 400ci) Ford (Cleveland/Modified)	AD-008-P	4	Head Dowel	0.6745	0.552	0.435			
			AD-967-P	2	Timing Cover Dowel	0.4820	0.385	0.550			
			AB-009-P	1	Cam Bolt	3/8-16 x 1-1/2 Hex					
			AW-001-P	1	Cam Bolt Washer	1-1/4 x 3/8 x 1/4 Washer					
			AB-010-P	2	Cam Thrust Plate Bolt	1/4-20 x 5/8 Hex					
			AK-007-P	1	Woodruff Key	3/16 x 1-3/4					
			AE-001-P	1	Cam Eccentric - Inner	N/A	N/A	N/A			
			AE-002-P	1	Cam Eccentric - Outer	N/A	N/A	N/A			
			AD-005-P	1	Cam Sprocket Dowel	0.3115	Solid	1.125			
			AD-025-P	2	Manifold Dowel	0.2500	Solid	0.500			
			Optional parts not included in kit.								
			AD-397	2	Transmission Dowel	0.5000	Solid	1.000			

ENGINE HARDWARE FINISHING KITS

KIT NO.	YEAR	MAKE & APPLICATION	CONTENTS	QTY.	DESCRIPTION	DIMENSION					
						O.D.	I.D.	LENGTH			
FORD (Cont'd)											
FKF-3	1968-1987	(370ci-460ci) Ford BB V8	AD-008A-P	4	Head Dowel (Split)	0.7400	0.625	0.445			
			AB-009-P	1	Cam Bolt	3/8-16 x 1-1/2 Hex					
			AW-001-P	1	Cam Bolt Washer	1-1/4 x 3/8 x 1/4 Washer					
			AB-011-P	2	Cam Thrust Plate Bolt	1/4-20 x 1/2 Place Bolt, Hex					
			AK-007-P	1	Woodruff Key	3/16 x 1-3/4					
			AK-008-P	1	Woodruff Key	1/4 x 7/8					
			AE-001-P	1	Cam Eccentric - Inner	N/A	N/A	N/A			
			AE-002-P	1	Cam Eccentric - Outer	N/A	N/A	N/A			
			AD-005-P	1	Cam Sprocket Dowel	0.3115	Solid	1.125			
			Optional parts not included in kit.								
			AD-397	2	Transmission Dowel	0.5000	Solid	1.000			
			FKF-3A	1988-1997	7.5L (460ci) Ford BB V8	AD-008A-P	4	Head Dowel (Split)	0.7400	0.625	0.445
AB-014-P	1	Cam Bolt				3/8-16 x 1-3/8 Hex					
AW-001-P	1	Cam Bolt Washer				1-1/4 x 3/8 x 1/4 Washer					
AB-011-P	2	Cam Thrust Plate Bolt				1/4-20 x 1/2 Place Bolt, Hex					
AK-007-P	1	Woodruff Key				3/16 x 1-3/4					
AK-008-P	1	Woodruff Key				1/4 x 7/8					
AD-005-P	1	Cam Sprocket Dowel				0.3115	Solid	1.125			
Optional parts not included in kit.											
AD-397	2	Transmission Dowel				0.5000	Solid	1.000			
GENERAL MOTORS											
FKC-2	1985-1986	4.3L (262ci) Chevy V6				AD-927-P	4	Head Dowel	0.3125	Solid	0.565
						AD-1284-P	2	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630
			AB-001-P	3	Cam Bolt	5/16-18 x 3/4 Hex					
			AK-003-P	1	Woodruff Key	3/16 x 1-13/32					
			AK-002-P	2	Woodruff Key	3/16 x 3/4					
			AV-001-P	1	Bypass Valve	N/A	N/A	N/A			
			Optional parts not included in kit.								
			AD-009-P	2	Transmission Dowel	0.6210	Solid	1.150			
			FKC-2A	1987-1994	4.3L (262ci) Chevy V6	AD-927-P	4	Head Dowel	0.3125	Solid	0.565
						AD-1284-P	2	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630
						AB-001-P	3	Cam Bolt	5/16-18 x 3/4 Hex		
						AK-003-P	1	Woodruff Key	3/16 x 1-13/32		
AK-002-P	2	Woodruff Key				3/16 x 3/4					
AV-001-P	1	Bypass Valve				N/A	N/A	N/A			
AB-004-P	2	Cam Thrust Plate Bolt				1/4-20 x 1/2 Machine Screw, Torx					
SEAL HOUSING											
AD-003-P	1	Seal Housing Dowel				0.4445	0.297	0.562			
AB-002-P	2	Seal Housing Bolt				1/4-20 x 1-3/4 Machine Screw, Torx					
AB-003-P	2	Seal Housing Bolt				1/4-20 x 7/8 Machine Screw, Torx					
ROLLER BLOCK											
AB-005-P	2	Cam Tray Bolt	5/16-18 x 5/8 Flanged Hex								
Optional parts not included in kit.											
AD-009-P	2	Transmission Dowel	0.6210	Solid	1.150						
FKC-2B	1992-2001	4.3L (262ci) Chevy V6 w/Balance Shaft	AD-927-P	4	Head Dowel	0.3125	Solid	0.565			
			AD-1284-P	2	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630			
			AK-003-P	1	Woodruff Key	3/16 x 1-13/32					
			AK-002-P	2	Woodruff Key	3/16 x 3/4					
			AV-001-P	1	Bypass Valve	N/A	N/A	N/A			
			AB-006-P	2	Cam Thrust Plate Bolt	1/4-20 x 5/8 Machine Screw, Torx					
			SEAL HOUSING								
			AD-003-P	1	Seal Housing Dowel	0.4445	0.297	0.562			
			AB-002-P	2	Seal Housing Bolt	1/4-20 x 1-3/4 Machine Screw, Torx					
			AB-003-P	2	Seal Housing Bolt	1/4-20 x 7/8 Machine Screw, Torx					
			BALANCE SHAFT								
			AB-004-P	2	Balance Shaft Thrust Plate Bolt	1/4-20 x 1/2 Machine Screw, Torx					
AB-007-P	2	Cam Bolt	5/16-18 x 1-3/8 Cap Screw, Hex								
ST-045-P	1	Timing Stud	5/16-18 x 1-3/4								
AN-001-P	1	Timing Stud Nut	5/16-18 Top Lock Nut, Hex								
ROLLER BLOCK											
AB-005-P	4	Cam Tray Bolt	5/16-18 x 5/8 Flanged Hex								
Optional parts not included in kit.											
AD-009-P	2	Transmission Dowel	0.6210	Solid	1.150						

ENGINE HARDWARE FINISHING KITS

KIT NO.	YEAR	MAKE & APPLICATION	CONTENTS	QTY.	DESCRIPTION	DIMENSION				
						O.D.	I.D.	LENGTH		
GENERAL MOTORS (Cont'd)										
FKC-1	1957-1986	(262ci-400ci) Chevy SB V8	AD-927-P	4	Head Dowel	0.3125	Solid	0.565		
			AD-1284-P	2	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630		
			AB-001-P	3	Cam Bolt	5/16-18 x 3/4 Hex				
			AK-001-P	1	Woodruff Key	3/16 x 1-3/8				
			AK-002-P	2	Woodruff Key	3/16 x 3/4				
			Optional parts not included in kit.							
			AD-009-P	2	Transmission Dowel	0.6210	Solid	1.150		
			AD-927-P	4	Head Dowel	0.3125	Solid	0.565		
			AD-1284-P	4	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630		
			AB-001-P	3	Cam Bolt	5/16-18 x 3/4 Hex				
FKC-1HP	1957-1986	(262ci-400ci) GM SB V8 (High Performance)	AD-927-P	4	Head Dowel	0.3125	Solid	0.565		
			AD-1284-P	4	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630		
			AB-001-P	3	Cam Bolt	5/16-18 x 3/4 Hex				
			AW-013-P	1	Cam Lock Plate	N/A	N/A	N/A		
			AB-039-P	2	Oil Filter Adapter Bolts	5/16-18 x 1-1/16				
			AK-001-P	1	Woodruff Key	3/16 x 1-3/8				
			AK-002-P	2	Woodruff Key	3/16 x 3/4				
			AD-023	2	Transmission Dowel	0.6210	Solid	1.550		
			AD-927-P	4	Head Dowel	0.3125	Solid	0.565		
			AB-031-P	1	Cam Bolt	1/2-20 x 1 Hex				
FKC-4	1955-1981	(265ci-455ci) Pontiac V8	AW-010-P	1	Cam Bolt Washer	1-3/8 x 1/2 x 3/16 Washer				
			AB-001-P	2	Cam Thrust Plate Bolt	5/16-18 x 3/4 Hex				
			AK-002-P	1	Woodruff Key	3/16 x 3/4				
			AK-001-P	1	Woodruff Key	3/16 x 1-3/8				
			Optional parts not included in kit.							
			AD-009-P	2	Transmission Dowel	0.6210	Solid	1.150		
			AD-927-P	4	Head Dowel	0.3125	Solid	0.565		
			AD-1284-P	2	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630		
			AB-001-P	3	Cam Bolt	5/16-18 x 3/4 Hex				
			AK-002-P	2	Woodruff Key	3/16 x 3/4				
FKC-1A	1987-2005	5.0L, 5.7L (305ci, 350ci) Chevy SB V8	AD-927-P	4	Head Dowel	0.3125	Solid	0.565		
			AD-1284-P	2	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630		
			AB-001-P	3	Cam Bolt	5/16-18 x 3/4 Hex				
			AK-002-P	2	Woodruff Key	3/16 x 3/4				
			SEAL HOUSING							
			AD-003-P	1	Seal Housing Dowel	0.4445	0.297	0.562		
			AB-002-P	2	Seal Housing Bolt	1/4-20 x 1-3/4 Machine Screw, Torx				
			AB-003-P	2	Seal Housing Bolt	1/4-20 x 7/8 Machine Screw, Torx				
			ROLLER BLOCK							
			AB-004-P	2	Cam Thrust Plate Bolt	1/4-20 x 1/2 Machine Screw, Torx				
			AB-004-P	2	Water Pump Shaft Thrust Plate Bolt	1/4-20 x 1/2 Machine Screw, Torx				
			AB-005-P	3	Cam Tray Bolt	5/16-18 x 5/8 Flanged Hex				
			Optional parts not included in kit.							
			AD-009-P	2	Transmission Dowel	0.6210	Solid	1.150		
			FKC-3	1967-1991	(366ci-454ci) Chevy BB V8	AD-8081-P	4	Head Dowel	0.6400	0.500
AD-1284-P	2	Timing Cover / Oil Pump Dowel				0.2466	Solid	0.630		
AB-001-P	3	Cam Bolt				5/16-18 x 3/4 Hex				
AK-002-P	2	Woodruff Key				3/16 x 3/4				
Optional parts not included in kit.										
AD-009-P	2	Transmission Dowel				0.6210	Solid	1.150		
AD-8081-P	4	Head Dowel				0.6400	0.500	0.500		
FKC-3HP	1967-1991	(366ci-454ci) GM BB V8 (High Performance)	AD-1284-P	4	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630		
			AW-013-P	1	Cam Lock Plate	N/A	N/A	N/A		
			AB-039-P	2	Oil Filter Adapter Bolts	5/16-18 x 1-1/16				
			AB-001-P	3	Cam Bolt	5/16-18 x 3/4 Hex				
			AK-002-P	2	Woodruff Key	3/16 x 3/4				
			AD-023	2	Transmission Dowel	0.6210	Solid	1.550		
			AD-8081-P	4	Head Dowel	0.6400	0.500	0.500		
			AD-1284-P	4	Timing Cover / Oil Pump Dowel	0.2466	Solid	0.630		
			AW-013-P	1	Cam Lock Plate	N/A	N/A	N/A		
			AB-039-P	2	Oil Filter Adapter Bolts	5/16-18 x 1-1/16				
FKC-6	1999-2000	4.8L (294ci) Chevrolet (Vortec) Eng. 1999-2000 5.3L (325ci) Chevrolet (Vortec) Eng. 1998-2000 5.7L (346ci) Chevrolet (LS-1, LS-6) Eng. 1999-2000 6.0L (364ci) Chevrolet (Vortec) Eng.	AD-258	4	Head Dowel	0.6250	0.523	0.500		
			AB-045-P	8	Timing Cover Bolt	8mm-1.25 x 30mm, Hex				
			AB-046-P	4	Cam Sprocket Bolt	8mm-1.25 x 24mm, Hex				
			AB-044-P	3	Cam Thrust Plate Bolt	8mm-1.25 x 22mm, Flat Head Torx				
			AK-001-P	1	Woodruff Key	3/16 x 1-3/8				
			AB-046-P	4	Seal Housing Bolt	8mm-1.25 x 24mm, Hex				
			AP-860-P	1	Oil Galley Plug	NA	NA	NA		
			AP-023-P	1	Oil Galley Plug (Front)	41/64				
			Optional parts not included in kit.							
			AW-9016-P	1	Cam Retainer	NA	NA	NA		
AB-840-P	1	Harmonic Balancer Bolt	16mm-2.0 x 103mm, Hex							
AD-047	2	Transmission / Bellhousing Dowel	0.6206	Solid	1.185					

ENGINE HARDWARE FINISHING KITS

KIT NO.	YEAR	MAKE & APPLICATION	CONTENTS	QTY.	DESCRIPTION	DIMENSION			
						O.D.	I.D.	LENGTH	
GENERAL MOTORS (Cont'd)									
FKC-6B	1999-2000	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-258	4	Head Dowel	0.6250	0.523	0.500	
	1999-2000	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt	8mm-1.25 x 22mm, Flat Head Torx			
	1998-2000	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AK-001-P	1	Woodruff Key	3/16 x 1-3/8			
	1999-2000	6.0L (364ci) Chevrolet (Vortec) Eng.	AP-860-P	1	Oil Galley Plug	NA	NA	NA	
				AP-023-P	1	Oil Galley Plug (Front)	41/64		
FKC-6C	1999-2000	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-258	4	Head Dowel	0.6250	0.523	0.500	
	1999-2000	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt	8mm-1.25 x 22mm, Flat Head Torx			
	1998-2000	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AK-001-P	1	Woodruff Key	3/16 x 1-3/8			
	1999-2000	6.0L (364ci) Chevrolet (Vortec) Eng.	AP-860-P	1	Oil Galley Plug	NA	NA	NA	
				AP-023-P	1	Oil Galley Plug (Front)	41/64		
				AB-840-P	1	Harmonic Balancer Bolt	16mm-2.0 x 103mm, Hex		
				AD-047	2	Transmission / Bellhousing Dowel	0.6206	Solid	1.185
FKC-7	2001-2013	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-326	4	Head Dowel	0.6420	0.516	0.500	
	2001-2013	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-045-P	8	Timing Cover Bolt	8mm-1.25 x 30mm, Hex			
	2001-2005	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AB-046-P	4	Cam Sprocket Bolt	8mm-1.25 x 24mm, Hex			
	2001-2013	6.0L (364ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt	8mm-1.25 x 22mm, Flat Head Torx			
	2008-2013	6.2L (376ci) Chevrolet (Vortec) Eng.	AK-001-P	1	Woodruff Key	3/16 x 1-3/8			
	2007-2008	6.2L (378ci) Chevrolet (Vortec) Eng.	AB-046-P	4	Seal Housing Bolt	8mm-1.25 x 24mm, Hex			
	2006-2013	7.0L (427ci) Chevrolet (LS-7) Eng.	AP-860-P	1	Oil Galley Plug	NA	NA	NA	
				AP-023-P	1	Oil Galley Plug (Front)	41/64		
						Optional parts not included in kit.			
				AW-9016-P	1	Cam Retainer	NA	NA	NA
				AB-840-P	1	Harmonic Balancer Bolt	16mm-2.0 x 103mm, Hex		
				AD-047	2	Transmission / Bellhousing Dowel	0.6206	Solid	1.185
	FKC-7B	2001-2013	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-326	4	Head Dowel	0.6420	0.516	0.500
2001-2013		5.3L (325ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt	8mm-1.25 x 22mm, Flat Head Torx			
2001-2005		5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AK-001-P	1	Woodruff Key	3/16 x 1-3/8			
2001-2013		6.0L (364ci) Chevrolet (Vortec) Eng.	AP-860-P	1	Oil Galley Plug	NA	NA	NA	
2008-2013		6.2L (376ci) Chevrolet (Vortec) Eng.	AP-023-P	1	Oil Galley Plug (Front)	41/64			
2006-2013		7.0L (427ci) Chevrolet (LS-7) Eng.							
FKC-7C	2001-2013	4.8L (294ci) Chevrolet (Vortec) Eng.	AD-326	4	Head Dowel	0.6420	0.516	0.500	
	2001-2013	5.3L (325ci) Chevrolet (Vortec) Eng.	AB-044-P	3	Cam Thrust Plate Bolt	8mm-1.25 x 22mm, Flat Head Torx			
	2001-2005	5.7L (346ci) Chevrolet (LS-1, LS-6) Eng.	AK-001-P	1	Woodruff Key	3/16 x 1-3/8			
	2001-2013	6.0L (364ci) Chevrolet (Vortec) Eng.	AP-860-P	1	Oil Galley Plug	NA	NA	NA	
	2008-2013	6.2L (376ci) Chevrolet (Vortec) Eng.	AP-023-P	1	Oil Galley Plug (Front)	41/64			
	2007-2008	6.2L (378ci) Chevrolet (Vortec) Eng.	AB-840-P	1	Harmonic Balancer Bolt	16mm-2.0 x 103mm, Hex			
	2006-2013	7.0L (427ci) Chevrolet (LS-7) Eng.	AD-047	2	Transmission / Bellhousing Dowel	0.6206	Solid	1.185	

Valve Seat Technology Has Changed.

Just Ask The Professionals, They'll Know

"We use the 70000 series Dura-Bond powder metal valve seats to ensure our product quality and reliability."
Bill Wages Jr., Plant Manager - AER Mfg.

"ProAction uses Dura-Bond powder metal valve seats for the following reasons: ease of installation, ID radius to reduce machining and increase air flow, durability in racing applications, and excellent machining."
Craig Pullman, Owner - ProAction/Topline

"Jasper has been testing Dura-Bond valve seats in stationary power generation units. These engines have operated in excess of 14,000 hours. The results have established Dura-Bond as our primary valve seat supplier."
Chuck Lynch, Quality Technician - Jasper Engines & Transmissions

"The 70000 series powder metal valve seats install easily, machine like butter, and greatly reduce valve seat recession."
Benjamin Baloga, Plant Engineering Manager - Tomadur Engine Company

"Dura-Bond has the only seat in the market that can duplicate OE level in aluminum cylinder heads."
Recon

"Extraordinary machinability, 100% proper size 100% of the time."
Rob Estes, Manager - Action Machine

"We were having issues regarding heavy duty dry fuel applications. When we switched to Dura-Bond powder metal seats, our problem was solved."
Ernie Carmichael, Parts Manager - Reliable

"Dura-Bond valve seat inserts are regarded by our customers as the very best seat available. It has taken a lot of hard work by our sales staff, but now Dura-Bond is the only sintered valve seat insert accepted in the Australian market place."
William Nitschke, Purchasing & Marketing Manager - Precision International

"Dura-Bond's powder metal valve seats offer excellent machining, longer tool life, and a more precise finish."
Mike Howden, General Manager - S&M Distributing

"Price, availability, quality, and endurance - best seats by far!"
John Brissette, Purchasing Manager - Tri Star Engine Supply



INNOVATORS OF POWDER METAL VALVE SEATS FOR THE AFTERMARKET.



We Make It, Not Just Distribute It!



"Cam Bearings Since 1947"

VALVE SEAT TECHNOLOGY

VALVE SEAT TECHNOLOGY HAS CHANGED

Modern engines put much higher levels of thermal and mechanical stress on valve seat inserts.

To handle the more severe conditions within this new generation of engines, the OEM is equipping them with high tech sintered valve seats. The normal cast chrome and other alloy iron seats will not adequately withstand the demands of this new engine environment.

Dura-Bond's patented material and processing of these powder metal valve seats offer excellent machinability, along with low wear and high heat resistance. These inserts have finely dispersed tungsten carbide residing in a matrix of tempered tool steel and special alloy iron particles to provide all the properties an application requires. Special compositions and processing have been developed to perform in the most extreme duty applications. Complete in-house capabilities, from development and tooling to testing, reduces lead time and cost.

If your requirements range from prototypes to high volume, let Dura-Bond Bearing Company be part of the solution.



Dura-Bond[®]
Since 1947

Special Two Step O.D. Intake Valve Seat



71964, 71964+10

Alternative Stepped O.D. Intake Seat to minimize cutter breakthrough.

Application:

IHC (Navistar) / Ford - 6.9L / 7.3L Diesel / Turbo Diesel Eng.

Interchanges with:

SBI SB1957ST
Tucker T-1696, T-2995

PART	PRODUCT COMMENTS	ACTUAL OD	ID	ID TOP TAPER	DEPTH	SEAT ANGLE	PART STATUS
71964	Flanged, Special ID Features	1.7555/1.9565	1.557	1.812	.312	30°	
71964+10	Flanged, Special ID Features (+.010 O.D.)	1.7555/1.9565	1.557	1.812	.312	30°	Make To Order



30000 (GOLD) SERIES VALVE SEAT INSERTS

DESCRIPTION and APPLICATION

Superior Machinability

The 30000 (Gold) series is the newest and most machinable of our valve seat materials. It is a sintered valve seat insert which offers a blend of finely dispersed tungsten carbide residing in a matrix of tempered tool steel and special alloy iron particles. The superior machinability is the result of adding our proprietary ingredients and solid dry lubricants to this blend, and by using our special processing techniques during manufacture.

Designed for Unleaded Fuels

This very machinable exhaust seat material is designed for unleaded fuels. The 30000 (Gold) series is intended for the light to medium duty range. (For the heavy duty or extreme duty range we recommend our 70000 (Diamond) series valve seat inserts.)

New Powder Metal Technology

Dura-Bond/Snyder has taken full advantage of the new powder metal technology to produce a "hard" valve seat which will machine almost like cast iron. The greatly enlarged picture (the 4 black squares are .0015" across) tells the story.

- Powder metal technology allows us to place a special high grade alloy iron (with its natural, tool lubricating graphite rich properties) within a tempered tool steel matrix.
- Because of our special processing, we are able to get very fine, spheroidalized, tungsten carbide particles to evenly disperse within the tool steel.
- These spheroidalized (round shaped) carbides are easier to machine because the tool bit can wedge in-between, with less cutting force and less friction.
- The smaller these "balls" of carbide, the easier it is on your cutting tool, because it will not be hitting any big irregular shaped "iceberg chunks" of carbide.

CHEMICAL COMPOSITION

Tungsten	3.8
Molybdenum	3.5
Chromium	2.0
Vanadium	1.0
Carbon	0.9
Cobalt	0.3
Nickel	0.4
Manganese	0.3
Silicon	0.2
Copper	0.1
(proprietary)	4.5
Iron	rem.

PHYSICAL PROPERTIES

Apparent hardness	20 HRC (approx.)
Micro hardness	20-43 HRC
Thermal expansion (at 1000° F)	.0000075"/F

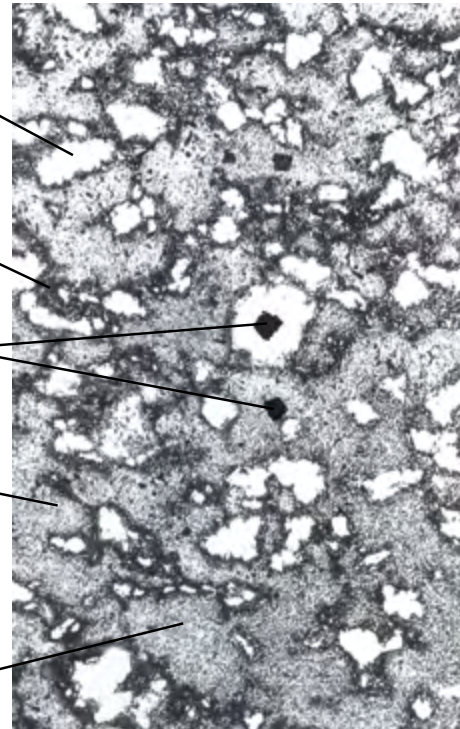
Special alloy iron
(large white area)

Simi steel
(darker outline)

Micro hardness
penetrator

Tool steel matrix

Tungsten carbides
(small white dots
within tool steel
matrix)



Dura-Bond reserves the right to revise composition and specifications without notice.



70000 (Diamond) 90000* (Platinum) SERIES VALVE SEAT INSERTS

DESCRIPTION and APPLICATION

This is a sintered, high speed (tungsten carbide) tool steel, valve seat insert. This material has special additives blended into the matrix which impart high temperature lubrication properties to the valve seat. These lubrication properties are "built-in" throughout, and are not affected by extreme heat or machining. These solid lubricants enable this material to be used in "dry" fuel applications such as propane, LPG, and natural gas. They prevent the "micro-welding" of the valve seat material to the valve face, therefore eliminating the primary cause of valve seat erosion. They also improve the machinability. Your tools last longer and you can cut faster.

Because of the special high temperature sintering and post heat treat processing, this valve seat material has cermet style metal alloy oxides. This gives it superior wear resistance to both pounding and abrasive wear at elevated temperatures. These** are called "cer-met" style because they are similar to ceramic (they do not soften at elevated temperature), but retain the machinability of metal. It is this high tech, new generation processing that allows us to achieve such high, hot hardness without having to put in massive amounts of expensive alloys, which would be required, to achieve equal performance. Normal foundry techniques do not allow this type of structure. You get superior wear resistance and high hot hardness at a very favorable price.

This valve seat insert is, therefore, used in engines using diesel, unleaded gasoline, and propane. We have been setting new longevity records in propane and natural gas applications using this seat.

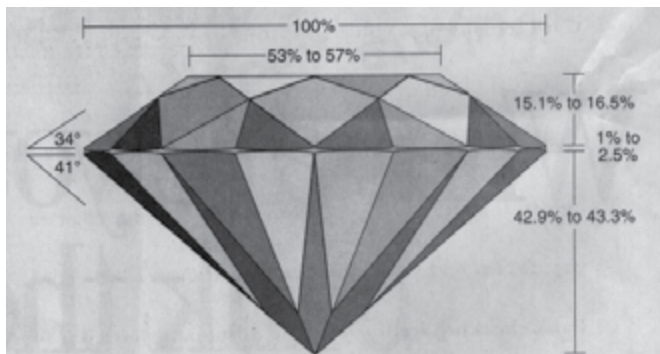
The micro structure of this valve seat insert is a very fine evenly dispersed mixture of spheroidal refractory alloy carbides, cermet style metal alloy oxides and solid lubricant residing in a tempered martensitic matrix.

CHEMICAL COMPOSITION

	70000	90000*
Tungsten	5.3	6.5
Molybdenum	4.4	6.0
Chromium	3.5	4.0
Vanadium	1.5	2.0
Carbon	0.8	0.9
Cobalt	0.4	0.4
Nickel	0.3	0.4
Manganese	0.3	0.3
Silicon	0.2	0.2
Copper	0.1	0.1
(proprietary)	3.5	3.5
Iron	rem.	rem.

PHYSICAL PROPERTIES

	70000	90000*
Apparent hardness	30 HRC (approx.)	35 HRC (approx.)
Micro Hardness	25-43 HRC	35-43 HRC
Thermal expansion (at 1000° F)	.0000078"/degree F	.0000078"/degree F



**Metal Alloy Oxides

* 90000 series available for extreme duty applications, special order only.

Dura-Bond reserves the right to revise composition and specifications without notice.

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
	71357			0.9252	0.709		.236	45°	
	71167			0.9449	0.709		.256	45°	
	72334	92334		0.9449	0.709		.315	45°	
	72292			0.9488	0.709		.256	45°	
32131				0.9500	0.765		.250	45°	
	72066			0.9547	0.709		.276	45°	
31871	71871			0.9840	0.669		.355	45°	Make To Order
	72335	92335		0.9843	0.748		.315	45°	
	71446			0.9843	0.787		.276	45°	
	71346			0.9882	0.787		.236	45°	
31002	71002			0.9890	0.787		.236	45°	
	71349			0.9902	0.787		.236	45°	
	72483		Special ID Features	0.9969	0.772		.185	45°	
	71600			1.0045	0.750		.188	45°	
32037	72037	92037		1.0142	0.828		.236	45°	Make To Order
		92283		1.0236	0.709		.276	45°	
	72336			1.0236	0.787		.315	45°	
	72494			1.0236	0.843	0.961	.268	45°	
31872				1.0240	0.709		.355	45°	
32227	72227			1.0240	0.770		.275	45°	Make To Order
32433				1.0240	0.770		.355	45°	Make To Order
	71398			1.0335	0.827		.177	45°	
31037	71037			1.0437	0.827		.189	45°	Make To Order
	71382			1.0472	0.827		.236	45°	
31405	71405			1.0492	0.827		.217	45°	Make To Order
31003	71003	91003		1.0512	0.787		.224	45°	
	71395			1.0551	0.827		.244	45°	
	71350			1.0559	0.807		.224	45°	
31873	71873			1.0630	0.748		.355	45°	Make To Order
		92404		1.0630	0.787		.315	45°	
	72337			1.0630	0.827		.394	45°	
	72462		Special ID Features	1.0677	0.827		.236	45°	
	72450		Special ID Features	1.0677	0.847		.201	45°	Make To Order
31096				1.0681	0.871		.254	45°	
	71383			1.0689	0.787		.236	45°	
	71142			1.0690	0.781		.250	45°	
31047	71047			1.0690	0.790		.260	45°	
31602	71602			1.0695	0.870		.195	45°	Make To Order
		92027		1.0722	0.864		.276	45°	
31915	71915	91915		1.0827	0.866		.236	45°	Make To Order
	72482		Special ID Features	1.0835	0.898		.185	45°	
	71429			1.0898	0.874		.250	45°	
32249	72249			1.0900	0.870		.300	45°	Make To Order
	72497			1.0906	0.866		.236	45°	
	71804			1.0984	0.906		.256	45°	
31874				1.1020	0.787		.355	45°	
		92290		1.1024	0.709		.236	45°	
	71168			1.1024	0.787		.315	45°	
	71428			1.1024	0.807		.256	45°	
39006	79006	99006		1.1024	0.866		.394	45°	
	71396			1.1083	0.866		.256	45°	
	71807			1.1102	0.890		.236	45°	
	71812			1.1122	0.890		.236	45°	
39007	79007	99007		1.1220	0.866		.394	45°	
		92466	Special ID Features	1.1268	0.937		.209	45°	
32268	72268			1.1270	0.920		.220	45°	Make To Order
	72043			1.1280	0.906		.303	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31097				1.1299	0.871		.191	45°	
30754				1.1300	0.875		.219	45°	
32421	72421			1.1300	0.875		.253	45°	Make To Order
31143	71143			1.1310	0.750		.250	45°	
31048	71048			1.1320	0.825		.285	45°	
31603	71603			1.1320	0.830		.240	45°	Make To Order
31604	71604			1.1320	0.854		.237	45°	Make To Order
31607	71607			1.1320	0.890		.237	45°	Make To Order
31605	71605			1.1320	0.900		.325	45°	Make To Order
	72339			1.1339	0.945		.339	45°	
		92047		1.1358	0.925		.217	45°	
	72338	92338		1.1417	0.709		.394	45°	
	71169			1.1417	0.827		.335	45°	
39008	79008	99008		1.1417	0.906		.394	45°	
31875				1.1420	0.827		.375	45°	
	71410	91410		1.1496	0.906		.256	45°	
	71431			1.1516	0.874		.250	45°	
31608	71608			1.1610	0.910		.222	30°	Make To Order
	72250			1.1614	0.906		.275	45°	
39009	79009	99009		1.1614	0.906		.394	45°	
32300	72300			1.1614	0.965		.205	45°	Make To Order
	72266			1.1640	0.925		.220	45°	
31608+5	71608+5		(+.005 O.D.)	1.1660	0.910		.222	30°	Make To Order
	71358			1.1661	0.809		.280	45°	
	72461		Special ID Features	1.1661	1.000		.224	45°	
32198				1.1700	0.906		.275	45°	
31608+10	71608+10		(+.010 O.D.)	1.1710	0.910		.222	30°	Make To Order
	71444			1.1732	0.945		.236	45°	
	72449		Special ID Features	1.1740	0.969		.193	45°	Make To Order
	72469		Special ID Features	1.1784	0.945		.221	45°	
31876				1.1810	0.866		.375	45°	
39011	79011	99011		1.1811	0.787		.394	45°	
31170	71170			1.1811	0.866		.335	45°	
39010	79010	99010		1.1811	0.906		.394	45°	
	71411			1.1811	0.945		.335	45°	
	72039			1.1811	1.024		.374	45°	
31049	71049			1.1819	0.925		.244	45°	
		92303		1.1831	0.933		.197	45°	
	71345			1.1850	0.984		.248	45°	
	71004			1.1858	0.984		.248	45°	
	71436			1.1870	0.945		.354	45°	
	71445			1.1870	0.984		.200	45°	
31005	71005			1.1870	0.984		.248	45°	
	72279	92279		1.1886	0.949		.319	45°	
31609	71609			1.1920	1.000		.188	45°	Make To Order
31610	71610			1.1920	1.000		.219	45°	Make To Order
	71352			1.1921	0.875		.250	45°	
		92255		1.1921	0.787		.315	45°	
	72372			1.1925	0.875		.219	45°	
31098				1.1933	0.871		.254	45°	
	71435			1.1933	0.929		.256	45°	
31099				1.1933	0.933		.254	45°	
	71144			1.1940	0.875		.250	45°	
31146	71146			1.1940	0.905		.257	45°	
31050	71050			1.1940	0.934		.260	45°	Make To Order
31145	71145			1.1940	0.938		.250	45°	
31611	71611			1.1945	0.880		.280	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31868				1.1945	0.935		.235	45°	
32036	72036	92036		1.1953	1.012		.236	45°	Make To Order
31868+5	71868+5		(+.005 O.D.)	1.1995	0.935		.235	45°	Make To Order
39012	79012	99012		1.2008	0.906		.394	45°	
31962	71962			1.2008	0.917	1.048	.236	45°	Make To Order
31051	71051			1.2008	0.984		.256	45°	
31868+10	71868+10		(+.010 O.D.)	1.2045	0.935		.235	45°	Make To Order
	71937			1.2047	0.945		.226	45°	
31944	71944			1.2047	0.945		.236	45°	Make To Order
32211	72211			1.2050	0.945		.295	45°	Make To Order
		92033		1.2063	0.989		.276	45°	
	72507			1.2150	0.900		.225	45°	
		92106		1.2169	0.984		.250	45°	
31877	71877			1.2200	0.906		.375	45°	Make To Order
		92369		1.2205	0.709		.295	45°	
39014	79014	99014		1.2205	0.827		.394	45°	
31171	71171			1.2205	0.906		.335	45°	
39013	79013	99013		1.2205	0.945		.394	45°	
	71448			1.2205	0.984		.237	45°	
	72495		Special ID Features	1.2205	1.012	1.130	.287	45°	
	72468			1.2217	1.035		.221	45°	
	72086			1.2250	0.825		.350	45°	
	71354			1.2252	0.910		.283	45°	
	78000			1.2260	0.945		.204	45°	
	71414			1.2303	0.984		.315	45°	
32094	72094			1.2400	0.825		.350	45°	Make To Order
		92262		1.2402	0.965		.315	45°	
39015	79015	99015		1.2402	0.945		.394	45°	
	72226			1.2402	1.016		.276	45°	
	71434			1.2407	0.941		.335	45°	
	71384			1.2441	1.024		.236	45°	
	72451		Special ID Features	1.2449	1.012		.197	45°	Make To Order
	72423		Special ID Features	1.2450	0.984		.291	45°	Make To Order
	71409			1.2480	1.024		.256	45°	
32463				1.2500	0.984		.315	45°	
32501				1.2528	1.085		.247	45°	
	72278	92278		1.2531	1.079		.335	45°	
30764	70764			1.2550	1.000		.250	45°	
31043	71043			1.2550	1.028		.227	45°	
31052				1.2550	1.055		.250	45°	
	71359			1.2551	1.000		.250	45°	
31105	71105			1.2559	0.933		.254	45°	
31100				1.2559	0.996		.254	45°	
31151	71151			1.2560	0.875		.250	45°	
31149	71149			1.2560	0.906		.313	45°	
31333				1.2560	0.910	1.070	.281	45°	
31334	71334			1.2560	0.910	1.070	.288	45°	Make To Order
31152	71152			1.2560	0.938		.188	45°	
31147	71147			1.2560	1.000		.219	45°	
	71150	91150		1.2560	1.000		.250	45°	
	71148			1.2560	1.000		.313	45°	
30230				1.2570	0.905	1.000	.230	45°	
31054	71054			1.2570	0.910		.285	45°	
31612				1.2570	0.930		.325	45°	
31613				1.2570	0.970		.270	45°	
31614	71614			1.2570	0.976		.180	45°	Make To Order
31618	71618			1.2570	0.982		.212	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31615	71615			1.2570	0.982		.329	45°	Make To Order
31616	71616			1.2570	1.000		.305	45°	Make To Order
31619	71619			1.2570	1.010		.257	45°	Make To Order
30205	70205			1.2570	1.022		.225	45°	Make To Order
31620	71620			1.2570	1.023		.273	45°	Make To Order
31617	71617			1.2570	1.028		.257	45°	Make To Order
		92028		1.2593	1.061		.276	45°	
		92289		1.2598	0.866		.335	45°	
39017	79017	99017		1.2598	0.866		.394	45°	
	72381			1.2598	0.945		.260	45°	
	71172			1.2598	0.945		.335	45°	
	71311	91311		1.2598	0.945		.354	45°	
39016	79016	99016		1.2598	0.984		.394	45°	
32517				1.2600	0.945		.236	45°	
31878	71878			1.2600	0.945		.375	45°	Make To Order
31808	71808			1.2602	0.984		.315	45°	
	71621			1.2620	0.975		.250	30°	
31902	71902			1.2620	0.975		.250	45°	Make To Order
32267	72267			1.2645	1.056		.220	60°	Make To Order
31621+5	71621+5		(+.005 O.D.)	1.2670	0.975		.250	30°	Make To Order
31313				1.2670	0.982	1.065	.320	45°	
32042		92042		1.2677	0.906	1.024	.248	45°	
32207	72207		Special ID Features	1.2698	1.024		.246	45°	Make To Order
32248	72248			1.2700	1.055		.300	45°	Make To Order
31621+10	71621+10		(+.010 O.D.)	1.2720	0.975		.250	30°	Make To Order
	71347			1.2724	1.024		.236	45°	
	72301			1.2728	1.079		.335	45°	
		91450		1.2736	0.906	1.024	.248	45°	
39018	79018	99018		1.2795	0.984		.394	45°	
		91914		1.2795	1.063		.217	45°	
	71502			1.2820	0.975		.250	45°	
31941	71941			1.2820	0.975		.250	45°	Make To Order
	71403			1.2827	1.063		.236	45°	
	71800			1.2835	1.083		.354	45°	
	72281			1.2840	1.078		.160	45°	
32146	72146			1.2854	0.925		.315	45°	Make To Order
	71360			1.2854	0.984		.236	45°	
31006	71006			1.2854	1.004		.315	45°	
31007	71007			1.2854	1.024		.335	45°	
	72456		Special ID Features	1.2858	1.085		.244	45°	Make To Order
	72340			1.2913	1.122		.346	45°	
	72302			1.2925	1.079		.335	45°	
31879	71879			1.2990	0.984		.375	45°	Make To Order
	71425			1.2992	0.905		.315	45°	
39020	79020	99020		1.2992	0.906		.394	45°	
31136	71136			1.2992	0.984		.177	45°	Make To Order
	79072			1.2992	0.984		.315	45°	
31173	71173			1.2992	0.984		.335	45°	
39019	79019	99019		1.2992	1.023		.394	45°	
	71348	91348		1.2992	1.024		.256	45°	
	72195			1.2992	1.063		.217	45°	
	71901			1.3020	0.975		.250	45°	
	72422		Special ID Features	1.3039	1.102		.268	45°	Make To Order
	72471		Special ID Features	1.3043	1.085		.276	45°	
30739				1.3050	1.048		.227	45°	
31821	71821			1.3051	1.063	1.142	.287	45°	Make To Order
31819	71819			1.3051	1.063	1.142	.315	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
	71008	91008		1.3051	1.102		.276	45°	
	71123			1.3071	1.083		.276	45°	
32288	72288			1.3168	1.114		.256	45°	Make To Order
31622	71622			1.3170	1.000		.219	45°	Make To Order
30735				1.3170	1.046		.219	45°	
30734	70734			1.3170	1.046		.227	45°	Make To Order
30736				1.3170	1.046		.250	45°	
30737				1.3170	1.046		.313	45°	
31289	71289			1.3170	1.063		.219	45°	
31976	71976		Special ID Features	1.3170	1.063	1.265	.219	30°	Make To Order
31056				1.3175	1.000		.250	45°	
31106	71106			1.3181	0.996		.254	45°	Make To Order
31101	71101			1.3181	1.059		.254	45°	
39021	79021	99021		1.3189	1.023		.394	45°	
31293				1.3189	1.063		.354	45°	
31058				1.3190	0.975		.280	45°	
31340				1.3190	0.977		.300	45°	
	71154			1.3190	1.000		.250	45°	
31155	71155			1.3190	1.000		.313	45°	
31623	71623			1.3190	1.020		.258	45°	Make To Order
	72038			1.3190	1.024		.313	45°	
	72487			1.3190	1.030		.312	45°	
30779	70779			1.3190	1.042		.238	45°	
	70563			1.3190	1.045		.316	45°	
30775				1.3190	1.062		.188	45°	
	72177			1.3190	1.063		.250	45°	
31153	71153			1.3190	1.063		.313	45°	
30562				1.3190	1.085		.305	45°	
31963	71963			1.3190	1.123	1.255	.236	45°	Make To Order
31320	71320			1.3190	1.123		.300	45°	
31625	71625			1.3195	0.965		.235	45°	Make To Order
31626	71626			1.3195	0.980		.293	45°	Make To Order
31624	71624			1.3195	1.044		.273	45°	Make To Order
31629	71629			1.3195	1.060		.230	45°	Make To Order
31628	71628			1.3195	1.060		.275	45°	
31630	71630			1.3195	1.065		.285	45°	Make To Order
31632	71632			1.3195	1.070		.257	45°	Make To Order
31631	71631			1.3195	1.070		.330	45°	Make To Order
	71397			1.3228	1.082		.287	45°	
		92222		1.3248	1.157		.260	45°	
31009	71009	91009		1.3268	1.063		.315	45°	
31010	71010	91010		1.3268	1.126		.250	45°	
		92125		1.3268	1.142		.295	45°	
	71438			1.3307	1.126		.250	45°	
		92256		1.3386	0.945		.335	45°	
39023	79023	99023		1.3386	0.945		.394	45°	
31174	71174			1.3386	1.024		.335	45°	
31273	71273	91273		1.3386	1.063		.394	45°	
	79073			1.3386	1.102		.315	45°	
	71306			1.3387	1.102		.177	45°	
31880				1.3390	1.024		.375	45°	
	71385			1.3425	1.083		.236	45°	
	71361			1.3433	1.025		.299	45°	
		91449		1.3445	1.102		.236	45°	
32132				1.3450	1.050		.290	45°	
	72128			1.3450	1.083		.236	45°	
31633	71633			1.3480	1.087		.200	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31060	71060			1.3484	1.063		.315	45°	
	71011			1.3484	1.126		.250	45°	
	71356			1.3504	1.063		.315	45°	
	71633+5		(+.005 O.D.)	1.3530	1.087		.200	45°	
39024	79024	99024		1.3583	1.063		.394	45°	
		92075		1.3583	1.142		.295	45°	
31312	71312			1.3610	1.100	1.220	.306	45°	Make To Order
32265				1.3615	1.142		.220	60°	
		92465	Special ID Features	1.3630	1.181		.188	45°	
31035	71035			1.3634	0.984		.394	45°	
		92032		1.3638	1.166		.276	45°	
31061	71061			1.3661	1.114		.295	45°	
31263	71263		Special ID Features	1.3670	1.108	1.344	.245	45°	Make To Order
	71809			1.3701	1.142		.256	45°	
	71362			1.3701	1.142		.283	45°	
	72085			1.3750	1.100	1.200	.227	60°	
31114	71114			1.3776	1.124		.313	45°	Make To Order
39026	79026	99026		1.3780	0.984		.394	45°	
	71175			1.3780	1.024		.354	45°	
31881	71881			1.3780	1.024		.394	45°	Make To Order
32412	72412	92412		1.3780	1.024		.434	45°	Make To Order
	71408			1.3780	1.102		.197	45°	
	79074			1.3780	1.102		.315	45°	
31824	71824			1.3780	1.102		.335	45°	Make To Order
39025	79025	99025		1.3780	1.102		.394	45°	
31062	71062			1.3799	1.063		.253	45°	Make To Order
31125	71125			1.3800	1.062		.219	45°	
	72486			1.3800	1.062		.229	45°	
30786	70786			1.3800	1.063		.188	45°	
30788	70788			1.3800	1.063		.250	45°	
30787	70787			1.3800	1.063		.313	45°	
32454	72454			1.3800	1.100		.219	45°	
32149	72149			1.3800	1.102		.355	45°	Make To Order
30790	70790			1.3800	1.125		.188	45°	
30558	70558			1.3800	1.125		.219	45°	
30791	70791			1.3800	1.125		.250	45°	
32181	72181			1.3800	1.125		.300	45°	Make To Order
	70792			1.3800	1.125		.375	45°	
	71363			1.3803	1.093		.250	45°	
31102				1.3807	1.059		.254	45°	
31103				1.3807	1.121		.254	45°	
	71156			1.3810	0.938		.313	45°	
31157	71157			1.3810	1.125		.266	45°	
31248	71248			1.3810	1.188		.219	45°	Make To Order
31973	71973			1.3820	1.000		.250	45°	Make To Order
31064				1.3820	1.000		.280	45°	
31063				1.3820	1.000		.410	45°	
31636	71636			1.3820	1.022		.230	45°	Make To Order
31637	71637			1.3820	1.057		.240	45°	Make To Order
31139	71139			1.3820	1.100		.300	45°	
30238	70238			1.3820	1.102	1.160	.260	45°	
31638	71638			1.3820	1.107		.237	45°	Make To Order
	71635			1.3820	1.120		.325	45°	
31837	71837			1.3820	1.130		.304	45°	Make To Order
31820	71820			1.3839	1.138	1.260	.307	45°	Make To Order
	71805			1.3839	1.181		.291	45°	
	72286			1.3860	1.181		.260	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31065	71065			1.3878	1.102		.315	45°	
32183				1.3920	1.141		.318	45°	
39027	79027	99027		1.3976	1.102		.394	45°	
31274	71274			1.3976	1.142		.394	45°	
31294				1.3976	1.161		.374	45°	
31337	71337			1.4008	1.200		.220	45°	Make To Order
	71838			1.4010	1.125		.266	45°	
	71918			1.4016	1.126		.158	45°	
31932	71932			1.4016	1.126		.158	45°	Make To Order
31012	71012			1.4016	1.142		.315	45°	
31277	71277			1.4016	1.142		.374	45°	Make To Order
31264	71264		Special ID Features	1.4040	1.138	1.386	.254	45°	Make To Order
31479	71479			1.4055	1.079	1.329	.300	45°	Make To Order
	71423			1.4055	1.181		.339	45°	
31443	71443			1.4055	1.181		.354	45°	Make To Order
32197				1.4100	1.142		.275	45°	
	72371			1.4110	1.094		.219	45°	
	71399			1.4114	1.181		.244	45°	
		92105		1.4138	1.220		.238	45°	
31882	71882			1.4170	1.063		.394	45°	Make To Order
32407	72407			1.4170	1.063		.434	45°	Make To Order
39029	79029	99029		1.4173	1.024		.394	45°	
	71176			1.4173	1.063		.354	45°	
39028	79028	99028		1.4173	1.142		.394	45°	
	79075			1.4173	1.181		.315	45°	
31968	71968			1.4178	1.181	1.299	.335	45°	Make To Order
	71839			1.4210	1.125		.266	45°	
31066	71066			1.4220	1.152		.315	45°	
	71412			1.4236	1.152		.250	45°	
	71121			1.4252	1.220		.295	45°	
	71420			1.4272	1.142		.315	45°	
32206	72206		Special ID Features	1.4273	1.181		.246	45°	Make To Order
31640	71640			1.4305	1.156		.160	30°	Make To Order
32464				1.4370	1.100		.315	45°	
39030	79030	99030		1.4370	1.141		.394	45°	
31111	71111			1.4405	1.186		.313	45°	
31641	71641			1.4410	1.203		.215	30°	Make To Order
	71380			1.4421	1.125		.250	45°	
	71364			1.4421	1.125		.354	45°	
31013	71013			1.4421	1.126		.315	45°	
31402	71402			1.4421	1.188		.250	45°	
30802	70802			1.4425	1.125		.250	45°	
30803	70803			1.4425	1.125		.313	45°	
31225	71225			1.4425	1.126		.188	45°	
30801	70801			1.4425	1.126		.219	45°	
31642	71642			1.4425	1.188		.156	45°	Make To Order
31030	71030			1.4425	1.188		.219	45°	
	71866			1.4425	1.189		.217	45°	
31031	71031			1.4425	1.219		.219	45°	
31865	71865			1.4429	1.118		.177	45°	Make To Order
	71407			1.4429	1.130		.315	45°	
		92257		1.4429	1.024		.335	45°	
31107				1.4433	1.059		.254	45°	
31329				1.4440	1.100		.315	45°	
30806				1.4440	1.105		.322	45°	
30809				1.4440	1.135	1.250	.316	45°	
31643	71643			1.4440	1.140		.305	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31645	71645			1.4440	1.180		.255	45°	Make To Order
31644	71644			1.4440	1.180		.305	45°	Make To Order
32488				1.4440	1.180		.312	45°	
31646				1.4440	1.181		.280	45°	
	71159			1.4440	1.188		.219	45°	
31161	71161			1.4440	1.188		.250	45°	
30818				1.4440	1.200		.297	45°	
31067				1.4440	1.230		.250	45°	
30556	70556			1.4440	1.250		.219	45°	
31160	71160			1.4440	1.250		.313	45°	
31652	71652			1.4445	1.090		.354	45°	Make To Order
31653	71653			1.4445	1.095		.237	45°	Make To Order
31654	71654			1.4445	1.100		.227	45°	Make To Order
31655	71655			1.4445	1.100		.293	45°	Make To Order
31647	71647			1.4445	1.120		.300	45°	Make To Order
31648	71648			1.4445	1.125		.257	45°	Make To Order
31656				1.4445	1.140		.237	45°	
31658				1.4445	1.142		.336	45°	
31659				1.4445	1.150		.257	45°	
31660	71660			1.4445	1.150		.410	45°	Make To Order
31661	71661			1.4445	1.162		.214	45°	Make To Order
31650	71650			1.4445	1.162		.230	45°	Make To Order
31649	71649			1.4445	1.162		.310	45°	Make To Order
31651	71651			1.4445	1.175		.260	45°	Make To Order
	71439			1.4449	1.142		.315	45°	
	71440			1.4449	1.220		.295	45°	
31664	71664			1.4470	1.219		.344	45°	Make To Order
31380+5	71380+5		(+.005 O.D.)	1.4471	1.125		.250	45°	Make To Order
31380+10	71380+10		(+.010 O.D.)	1.4521	1.125		.250	45°	Make To Order
32000	72000			1.4550	1.079	1.329	.375	45°	Make To Order
31068	71068			1.4567	1.102		.354	45°	
31069	71069			1.4567	1.181		.315	45°	
39031	79031	99031		1.4567	1.181		.394	45°	
32299	72299			1.4567	1.220		.212	45°	Make To Order
31275				1.4567	1.220		.394	45°	
31883	71883			1.4570	1.102		.394	45°	Make To Order
32457				1.4570	1.102		.434	45°	
32001				1.4571	1.260		.240	45°	
31113				1.4577	1.098		.352	45°	
32304	72304			1.4600	1.220		.265	45°	Make To Order
32500				1.4606	1.280		.247	45°	
	72390		Special ID Features	1.4618	1.183	1.362	.264	45°	
	72470		Special ID Features	1.4618	1.260		.307	45°	
31822	71822			1.4626	1.217	1.339	.307	45°	Make To Order
	71908			1.4630	1.220		.354	45°	
31070	71070			1.4646	1.181		.276	45°	
		92100		1.4650	1.181		.218	45°	
32239			Special ID Features	1.4665	1.181	1.350	.282	44°	
	71365			1.4685	1.142		.315	45°	
	72420			1.4724	1.250	1.372	.310	45°	
31044	71044			1.4750	1.240		.227	0°	
39033	79033	99033		1.4764	1.181		.394	45°	
31071				1.4764	1.220		.335	45°	
	72341			1.4764	1.228		.274	45°	
	71858			1.4764	1.236		.335	45°	
	71386			1.4764	1.240		.335	45°	
31315	71315			1.4772	1.232		.335	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31936	71305	92051		1.4777	1.213		.154	45°	Make To Order
	71353			1.4791	1.187		.313	45°	
	71936			1.4799	1.260		.226	45°	
				1.4803	1.181		.260	45°	
	71854			1.4803	1.181		.281	45°	
	71400			1.4803	1.200		.276	45°	
	71379			1.4803	1.287		.283	45°	
31014				1.4823	1.220	1.319	.276	45°	Make To Order
31818	71818		1.4823	1.240	.315		45°		
32174			1.4830	1.260	.350		45°		
	72455		1.4840	1.125	.177		45°		
	71903		1.4840	1.125	.219		45°		
31015	71015		1.4843	1.220	.315		45°		
30738			1.4850	1.260	.237		45°		
32346			1.4852	1.238	1.380	.315	45°	Make To Order	
31665	71665		1.4860	1.270		.290	30°		
	71864		1.4862	1.219		.344	45°		
	71387		1.4862	1.220		.335	45°		
32243	72243		1.4960	1.140		.390	45°		
31884	71884		1.4960	1.142		.394	45°		
32437			1.4960	1.142		.434	45°		
32063	72063	92063	1.4961	0.906	.276	45°	Make To Order		
39035	79035	99035	1.4961	1.102	.394	45°	Make To Order		
	71178		1.4961	1.142	.354	45°			
31038	71038		1.4961	1.181	.276	45°			
	79076		1.4961	1.181	.315	45°			
31276	71276	91276	1.4961	1.220	.394	45°			
31823	71823		1.4961	1.260	.335	45°			
		92102	1.4965	1.181	.238	45°			
31927	71927		1.4975	1.234	1.418	.318	45°	Make To Order	
31198			1.5000	1.188		.250	45°		
32280			1.5000	1.273		.180	60°		
	71366		1.5008	1.148		.283	45°		
31940	71940		1.5020	1.221		.303	45°		
31855	71855		1.5039	1.220		.315	45°		
32077	72077	Special ID Features	1.5040	1.175		1.255	.300	45°	Make To Order
32348			1.5040	1.215	1.400	.255	45°	Make To Order	
31072	71072		1.5040	1.125	1.405	.253	45°	Make To Order	
	71342		1.5043	1.188		.313	45°		
	71343		1.5043	1.250		.281	45°		
31032			1.5045	1.188		.313	45°		
31290	71290		1.5045	1.313		.188	45°		
30045		1.5050	1.100	1.225	.316	45°	Make To Order		
30706	70706	1.5050	1.125		.188	45°			
30707	70707	1.5050	1.125		.219	45°			
30708		1.5050	1.125		.250	45°			
30709	70709	1.5050	1.125		.313	45°			
30105	70105	1.5050	1.140		1.250	.325		45°	
30823		1.5050	1.188			.218		45°	
30822	70822	1.5050	1.188	.250		45°			
30705	70705	1.5050	1.215	1.344		.219	45°		
30722	70722	1.5050	1.215			.250	45°		
30015		1.5050	1.215			1.275	.280	45°	
30721		1.5050	1.215				.305	45°	
30716		1.5050	1.215		.310		45°		
	70717	1.5050	1.215		.318		45°		
30718	70718	1.5050	1.215		.345		45°	Make To Order	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
30711	70710			1.5050	1.250		.188	45°	
30024	70711			1.5050	1.250		.219	45°	
30712	70712			1.5050	1.250	1.390	.240	45°	
30713	70713			1.5050	1.250		.250	45°	
30714	70714			1.5050	1.250		.282	45°	Make To Order
30715	70715			1.5050	1.250		.313	45°	
	71367			1.5051	1.122		.375	45°	
31073	71073	91073		1.5051	1.220		.343	45°	
	71073	92258		1.5051	1.102		.315	45°	
	71853			1.5059	1.181		.335	45°	
31108	71109			1.5059	1.183		.157	45°	
31109	71109			1.5059	1.246		.254	45°	
	71419			1.5059	1.280		.254	45°	
	71906			1.5060	1.000		.295	45°	
31942	71942			1.5060	1.000		.406	45°	Make To Order
31205	71205			1.5060	1.175	1.235	.406	45°	Make To Order
31247	71247			1.5060	1.179	1.307	.236	45°	Make To Order
	71207			1.5060	1.180	1.280	.293	45°	Make To Order
31258	71258			1.5060	1.180	1.345	.214	45°	
31162	71162			1.5060	1.188		.307	45°	
31326				1.5060	1.195		.313	45°	
31501				1.5060	1.195		.315	45°	
31241	71241			1.5060	1.200	1.240	.360	45°	Make To Order
31909				1.5060	1.205		.315	45°	
31214				1.5060	1.210		.322	45°	
31832	71832			1.5060	1.215		.345	45°	
31204	71204			1.5060	1.220	1.328	.330	45°	Make To Order
32152	72152		Special ID Features	1.5060	1.225	1.467	.310	45°	Make To Order
31244				1.5060	1.230		.280	45°	Make To Order
32098	72098			1.5060	1.250	1.358	.278	45°	Make To Order
31235	71235			1.5060	1.255		.312	45°	Make To Order
	72479		Special ID Features	1.5060	1.296		.318	45°	Make To Order
31255	71255			1.5060	1.313		.210	45°	Make To Order
32110	72110			1.5065	1.220		.219	45°	Make To Order
31314	71314			1.5067	1.210	1.263	.350	45°	Make To Order
31074				1.5070	1.100		.344	45°	Make To Order
30824	70824			1.5070	1.175		.315	45°	Make To Order
31666	71666			1.5070	1.180		.236	45°	Make To Order
30031				1.5070	1.180	1.318	.300	45°	Make To Order
31668	71668			1.5070	1.182		.305	45°	Make To Order
31484	71484			1.5070	1.203	1.294	.275	45°	Make To Order
30191	70191			1.5070	1.210	1.320	.280	45°	Make To Order
30148	70148			1.5070	1.210	1.333	.315	45°	Make To Order
31291				1.5070	1.210	1.276	.345	45°	Make To Order
30204	70204			1.5070	1.239		.345	45°	Make To Order
32116	72116			1.5070	1.250		.225	45°	Make To Order
31485	71485			1.5070	1.250		.319	45°	Make To Order
31667	71667			1.5070	1.295		.344	45°	Make To Order
32351				1.5110	1.220	1.405	.262	45°	Make To Order
	71388			1.5157	1.220		.275	45°	
	71368			1.5157	1.220		.335	45°	
39036	79036	99036		1.5157	1.220		.343	45°	
	79036	92263		1.5157	1.240		.394	45°	
31670	71670			1.5160	1.250		.295	45°	Make To Order
		92104		1.5161	1.260		.250	45°	
31977	71977			1.5200	1.116	1.340	.250	45°	Make To Order
							.333	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status			
30000	70000	90000										
30711+20	71432	70711+20	(+.020 O.D.)	1.5209	1.220		.285	45°	Make To Order			
	71036			1.5248	1.183		.394	45°				
	71389			1.5250	1.250		.219	45°				
	71840			1.5256	1.220		.335	45°				
	71840			1.5260	1.250		.250	45°				
30043	70043	92415		1.5270	1.200		.250	45°	Make To Order			
31993	71993			1.5285	1.149		.265	45°	Make To Order			
31992				1.5285	1.250		.265	45°				
31016	71016			1.5335	1.221		.335	45°				
32244	72244			1.5350	1.180		.390	45°	Make To Order			
31885	71885			1.5350	1.181		.394	45°	Make To Order			
32415	72415			1.5350	1.181		.434	45°	Make To Order			
39038	79038			1.5354	1.141		.394	45°				
	71369			1.5354	1.181		.276	45°				
	79077			1.5354	1.181		.315	45°				
	71179			1.5354	1.181		.354	45°				
	71180			1.5354	1.220		.335	45°				
39037	79037			99037	1.5354		1.260	.394	45°			
	71370			1.5354	1.299		.315	45°				
	71671			1.5365	1.255		.359	45°				
	72126	1.5400	1.240	.275	45°							
32133		99037		1.5400	1.300		.315	45°				
	71416			1.5410	1.327		.256	45°				
	71426			1.5413	1.366		.232	45°				
31970	71970			1.5450	1.291		.276	45°		Make To Order		
31075	71075			1.5472	1.260		.315	45°				
31972				1.5510	1.180		.320	45°				
39039	79039			1.5551	1.260		.394	45°				
31076	71076			1.5551	1.299		.335	45°				
	72374			Special ID Features	1.5555		1.281	1.398		.236	30°	
	72375			Special ID Features	1.5555		1.300	1.385		.189	45°	
31295		92411	Special ID Features	1.5591	1.319		.374	45°				
31197	71197			1.5630	1.250		.250	45°		Make To Order		
	71422			1.5630	1.299		.339	45°				
	71442			1.5630	1.299		.354	45°				
	72009			1.5649	1.272		.256	45°				
32411	72411			1.5650	1.062		.287	45°		Make To Order		
32019	72019			1.5650	1.290		.324	45°		Make To Order		
	71802			1.5650	1.299		.335	45°				
31112	71112			1.5657	1.186		.376	45°				
31850	71850			1.5669	1.207		.217	45°		Make To Order		
	71344	1.5669	1.250	.313	45°							
	71851	91851	1.5669	1.313	.177	45°						
31870	71870	1.5670	1.250	.188	45°							
31833	71833	1.5670	1.250	.337	45°	Make To Order						
31033		1.5670	1.344	.219	45°							
31486	71486	1.5670	1.375	.250	45°	Make To Order						
31077		1.5673	1.250	.253	45°							
30839	70839	1.5680	1.188	.313	45°							
30640	70640	1.5680	1.250	.219	45°							
30645	70645	1.5680	1.250	.250	45°							
30740	70740	1.5680	1.250	.281	45°							
32409		Special ID Features	1.5680	1.250	1.450	.281	35°					
30647	70647	90647	1.5680	1.250	.313	45°						
30719	70719	1.5680	1.250	.317	45°	Make To Order						
32113		1.5680	1.250	.343	45°							
30541	70541	1.5680	1.312	1.390	.219	45°						

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
30643	70643	90643		1.5680	1.312		.219	45°	
32484	72484			1.5680	1.312		.219	45°	
30503	70503			1.5680	1.312	1.390	.250	45°	
30644	70644			1.5680	1.312		.250	45°	
30731				1.5680	1.312		.313	45°	
30840	70840			1.5680	1.313		.188	45°	
	70838			1.5680	1.313		.219	30°	
	71267			1.5680	1.313		.280	45°	
30841				1.5680	1.375		.218	45°	
31104				1.5681	1.183		.254	45°	
31253	71253			1.5685	1.188		.313	60°	Make To Order
31222	71222			1.5685	1.220		.344	45°	Make To Order
31199	71199			1.5685	1.255	1.372	.319	45°	
31259	71259			1.5685	1.255	1.392	.319	45°	Make To Order
31210	71210			1.5685	1.265		.280	45°	Make To Order
31251	71251			1.5685	1.290	1.345	.324	45°	Make To Order
	71163			1.5690	1.125		.313	45°	
31079				1.5690	1.180		.305	45°	
31078				1.5690	1.230		.310	45°	
31328	71328			1.5690	1.245		.352	45°	Make To Order
31140	71140			1.5690	1.255		.320	45°	Make To Order
31080	71080			1.5690	1.300		.256	45°	Make To Order
31138	71138			1.5690	1.315		.270	45°	Make To Order
31673	71673			1.5695	1.170		.267	45°	Make To Order
31674				1.5695	1.180		.316	45°	
31675	71675			1.5695	1.200		.293	45°	Make To Order
31287	71287			1.5695	1.219		.317	45°	
31292				1.5695	1.220	1.356	.344	45°	
31676	71676			1.5695	1.246		.230	45°	Make To Order
31677	71677			1.5695	1.260		.233	45°	Make To Order
31286				1.5695	1.265	1.320	.280	45°	
31318				1.5700	1.243		.354	45°	
		92438		1.5700	1.295		.312	45°	
30643+5	70643+5		(+.005 O.D.)	1.5730	1.312		.219	45°	
30644+5	70644+5		(+.005 O.D.)	1.5730	1.312		.250	45°	Make To Order
39041	79041	99041		1.5748	1.141		.394	45°	
	71181			1.5748	1.181		.374	45°	
39040	79040	99040		1.5748	1.260		.394	45°	
	79078			1.5748	1.299		.315	45°	
31296				1.5748	1.319		.354	45°	
31886	71886			1.5750	1.181		.434	45°	
30643+10	70643+10		(+.010 O.D.)	1.5780	1.312		.219	45°	Make To Order
30644+10			(+.010 O.D.)	1.5780	1.313		.250	45°	
		92434		1.5803	1.299		.315	45°	
31966	71966			1.5816	1.339		.277	45°	Make To Order
31081	71081			1.5823	1.180		.413	45°	
31278				1.5827	1.319		.374	45°	
	71017			1.5827	1.339		.295	45°	
	71803			1.5827	1.368		.272	45°	
	71418			1.5846	1.358		.287	45°	
30640+20	70640+20		(+.020 O.D.)	1.5880	1.250		.219	45°	Make To Order
31222+20	71222+20		(+.020 O.D.)	1.5885	1.220		.344	45°	Make To Order
	71904			1.5890	1.250		.250	45°	
39042	79042	99042		1.5945	1.260		.394	45°	
		92035		1.5953	1.181		.394	45°	
	72052	92052		1.5953	1.319		.394	45°	
	72393			1.5980	1.438		.188	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
	71018			1.5984	1.339		.276	45°	
		92259		1.6000	1.181		.315	45°	
32458				1.6000	1.230	1.450	.400	45°	
	71371			1.6000	1.282		.299	45°	
32072				1.6000	1.300		.409	45°	
32089				1.6000	1.345	1.444	.400	45°	
		92124		1.6023	1.398		.315	45°	
32189	72189			1.6050	1.310	1.428	.250	45°	
	71905			1.6090	1.250		.250	45°	
	71841			1.6090	1.313		.219	45°	
	72148			1.6090	1.313		.414	45°	
31679	71679			1.6090	1.400		.250	45°	Make To Order
	72394			1.6100	1.438		.188	45°	
31887	71887			1.6140	1.220		.414	45°	Make To Order
32413	72413			1.6140	1.220		.434	45°	Make To Order
39044	79044	99044		1.6142	1.181		.394	45°	
	71182			1.6142	1.220		.335	45°	
	79079			1.6142	1.260		.315	45°	
	72271			1.6142	1.260		.413	45°	
39043	79043	99043		1.6142	1.299		.394	45°	
31039	71039			1.6142	1.339		.295	45°	
	71413			1.6201	1.374		.256	45°	
	71813			1.6201	1.398		.256	45°	
	71437			1.6220	1.319		.260	45°	
	71946			1.6220	1.344		.197	45°	
	70855			1.6245	1.322		.375	45°	
31196				1.6250	1.313		.250	45°	
		92049		1.6260	1.319		.236	45°	
	72270			1.6260	1.319		.413	45°	
	71372			1.6260	1.320		.375	45°	
31680	71680			1.6280	1.344		.250	30°	Make To Order
31681	71681			1.6285	1.348		.365	45°	Make To Order
	71924			1.6285	1.348	1.524	.365	45°	
31682	71682			1.6285	1.357		.249	30°	Make To Order
32010	72010	92010		1.6285	1.359	1.504	.248	60°	Make To Order
	72305		Special ID Features	1.6289	1.359	1.500	.250	30°	
31836	71836			1.6290	1.330		.282	45°	Make To Order
31859				1.6299	1.398		.197	45°	
31683	71683			1.6300	1.188		.375	45°	Make To Order
30661	70661			1.6300	1.250		.219	45°	
30662	70662			1.6300	1.250		.250	45°	
30663	70663			1.6300	1.250		.313	45°	
31684	71684			1.6300	1.250		.344	45°	Make To Order
30853	70853			1.6300	1.250		.375	45°	
32170	72170			1.6300	1.250		.437	45°	Make To Order
31685	71685			1.6300	1.280		.315	45°	Make To Order
32192	72192			1.6300	1.300		.315	45°	Make To Order
31455	71455	91455		1.6300	1.312		.188	45°	Make To Order
30649	70649	90649		1.6300	1.313		.219	45°	
30650	70650	90650		1.6300	1.313		.250	45°	
31488	71488			1.6300	1.313		.281	45°	
30651	70651			1.6300	1.313		.313	45°	
30854	70854			1.6300	1.313		.395	45°	
	72224		Special ID Features	1.6300	1.321	1.549	.393	60°	
32213			Special ID Features	1.6300	1.323	1.580	.240	45°	
	70642			1.6300	1.334		.313	45°	
31489	71489			1.6300	1.344		.250	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
30857				1.6300	1.348		.218	45°	
	72493			1.6300	1.358		.310	45°	
30648	70648			1.6300	1.375		.219	45°	
30506	70506			1.6300	1.375	1.460	.250	45°	Make To Order
30646	70646			1.6300	1.375		.250	45°	
30732	70732			1.6300	1.375		.313	45°	
31482				1.6300	1.406		.250	45°	
32425				1.6310	1.187		.450	45°	
32167	72167			1.6310	1.221	1.370	.437	45°	Make To Order
31233	71233			1.6310	1.280	1.450	.219	45°	Make To Order
31218				1.6310	1.298		.317	45°	
32143	72143			1.6310	1.312	1.500	.312	45°	Make To Order
32144	72144			1.6310	1.312	1.500	.437	45°	Make To Order
31223				1.6310	1.320		.300	45°	
31164	71164			1.6310	1.344		.313	45°	
31046	71046			1.6310	1.375		.188	45°	
31997	71997			1.6310	1.375		.219	45°	Make To Order
31234	71234			1.6310	1.438		.219	45°	Make To Order
31688	71688			1.6320	1.250		.293	45°	Make To Order
31332				1.6320	1.250		.312	45°	
31236				1.6320	1.298	1.422	.317	45°	
31689	71689			1.6320	1.305		.227	45°	Make To Order
30860	70860			1.6320	1.329		.280	45°	
31690				1.6320	1.333		.237	45°	
31691	71691			1.6320	1.335		.420	45°	Make To Order
31692	71692			1.6320	1.340		.307	45°	Make To Order
31686	71686			1.6320	1.345		.290	45°	Make To Order
31687	71687			1.6320	1.380		.257	45°	Make To Order
39045	79045	99045		1.6339	1.299		.394	45°	
		92074		1.6339	1.378		.315	45°	
31323				1.6340	1.260	1.340	.394	45°	
31681+5	71681+5		(+.005 O.D.)	1.6340	1.348	1.524	.365	45°	Make To Order
32287				1.6344	1.375		.256	45°	
		92384		1.6346	1.319		.394	45°	
30648+5			(+.005 O.D.)	1.6350	1.375		.219	45°	
30857+6	70857+6		(+.006 O.D.)	1.6360	1.348		.218	45°	Make To Order
32173				1.6370	1.437		.350	45°	
32056	72056			1.6371	1.257	1.407	.345	45°	Make To Order
31694	71694			1.6380	1.412		.218	45°	Make To Order
31681+10	71681+10		(+.010 O.D.)	1.6385	1.348		.365	45°	Make To Order
31019	71019			1.6386	1.339		.315	45°	
31695	71695			1.6400	1.375		.250	45°	Make To Order
	71020			1.6417	1.339		.250	45°	
32099	72099	92099		1.6421	1.375		.218	45°	Make To Order
30864	70864			1.6450	1.375		.250	45°	
	71996			1.6450	1.406		.187	45°	
31226				1.6460	1.312		.350	45°	
	72129			1.6470	1.300		.325	45°	
31917	71917		Special ID Features	1.6500	1.280	1.468	.350	45°	Make To Order
32070	72070			1.6500	1.280		.350	45°	Make To Order
32076	72076		Special ID Features	1.6500	1.280	1.500	.350	45°	
32069				1.6500	1.340		.350	45°	
32138				1.6500	1.340		.425	45°	
31987	71987			1.6500	1.350		.375	45°	Make To Order
32164	72164			1.6500	1.350		.375	45°	Make To Order
32187				1.6500	1.367		.380	45°	
32025	72025			1.6500	1.385		.375	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
32091				1.6500	1.390	1.489	.400	45°	
32088				1.6500	1.400	1.566	.375	45°	
31979			Special ID Features	1.6500	1.408	1.580	.375	45°	
	72441			1.6520	1.280		.433	45°	
32046	72046	92046		1.6535	1.181		.394	45°	Make To Order
39047	79047	99047		1.6535	1.220		.394	45°	
31183	71183			1.6535	1.260		.374	45°	
	79080			1.6535	1.299		.315	45°	
	71184			1.6535	1.299		.335	45°	
	71931			1.6535	1.299		.374	45°	
	71852	91852		1.6535	1.313		.250	45°	
32417	72417			1.6535	1.313		.290	45°	Make To Order
39046	79046	99046		1.6535	1.338		.394	45°	
	72343			1.6535	1.365	1.487	.250	40°	
31888	71888			1.6540	1.260		.414	45°	Make To Order
31696	71696			1.6544	1.367		.313	45°	Make To Order
31272				1.6560	1.313		.375	45°	
31279			Special ID Features	1.6560	1.350	1.626	.375	45°	
31478			Special ID Features	1.6565	1.246	1.546	.375	55°	
	71697			1.6570	1.312		.395	45°	
		92435		1.6591	1.299		.315	45°	
31336	71336		Special ID Features	1.6594	1.315	1.472	.205	0°	Make To Order
32070+10	72070+10		(+.010 O.D.)	1.6600	1.280		.350	45°	Make To Order
32069+10	72069+10		(+.010 O.D.)	1.6600	1.340		.350	45°	Make To Order
31989	71989	91989		1.6600	1.350		.375	45°	Make To Order
31696+5	71696+5		(+.005 O.D.)	1.6600	1.367		.312	45°	Make To Order
	72178			1.6600	1.412		.256	45°	
31082	71082			1.6614	1.319		.413	45°	
	71810			1.6614	1.398		.315	45°	
	71421			1.6634	1.378		.315	45°	
30868				1.6690	1.372	1.429	.272	37°	
31308				1.6694	1.339		.177	45°	
32284	72284			1.6700	1.350		.400	45°	Make To Order
31698	71698			1.6710	1.367		.311	45°	Make To Order
39048	79048			1.6732	1.338		.394	45°	
31969	71969			1.6737	1.409	1.555	.246	45°	Make To Order
31699	71699			1.6750	1.420		.302	30°	Make To Order
	72503		Special ID Features	1.6764	1.394		.236	30°	
	71373			1.6772	1.417		.315	45°	
32285	72285			1.6800	1.350		.400	45°	Make To Order
32095	72095			1.6800	1.400		.500	45°	Make To Order
32122	72122			1.6805	1.378		.310	45°	Make To Order
31811	71811			1.6811	1.398		.335	45°	
31700	71700			1.6830	1.466		.312	45°	Make To Order
	71390			1.6831	1.469		.295	45°	
31846	71846			1.6870	1.438	1.546	.365	45°	Make To Order
		91828		1.6875	1.410		.365	20°	
31254	71254			1.6890	1.372	1.486	.272	37°	Make To Order
31701	71701			1.6900	1.250		.375	45°	Make To Order
32224+06	72224+06		Special ID Features	1.6900	1.321	1.549	.393	60°	Make To Order
32095+10	72095+10		(+.010 O.D.)	1.6900	1.400		.500	45°	Make To Order
31702	71702			1.6905	1.438		.181	30°	Make To Order
31703	71703			1.6905	1.438		.200	30°	Make To Order
32166	72166			1.6920	1.221	1.421	.437	45°	Make To Order
32274	72274			1.6920	1.292	1.465	.339	30°	Make To Order
30674	70674			1.6920	1.312		.219	45°	
30675	70675			1.6920	1.312		.250	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
30676	70676			1.6920	1.312		.313	45°	
31270				1.6920	1.312		.375	45°	
32142	72142			1.6920	1.312	1.550	.437	45°	Make To Order
	71960			1.6920	1.372	1.492	.281	53°	
31042				1.6920	1.375		.188	45°	
30677	70677			1.6920	1.375		.219	45°	
30678	70678			1.6920	1.375		.250	45°	
30720	70720			1.6920	1.375		.285	45°	Make To Order
30679	70679			1.6920	1.375		.313	45°	
30871	70871			1.6920	1.375		.375	45°	
30670	70670			1.6920	1.406		.250	45°	
31116	71116			1.6920	1.406		.305	45°	Make To Order
31846+5	71846+5		(+.005 O.D.)	1.6920	1.438	1.546	.365	45°	Make To Order
30872				1.6920	1.438		.156	45°	
30873	70873			1.6920	1.438		.188	45°	
30664	70664			1.6920	1.438		.219	45°	
30673	70673			1.6920	1.438		.250	45°	
30733	70733			1.6920	1.438		.313	45°	
31916	71916			1.6920	1.439	1.515	.365	45°	Make To Order
	71374			1.6921	1.312		.315	45°	
32150	72150			1.6922	1.358	1.592	.191	0°	Make To Order
30559	70559			1.6925	1.344		.313	45°	
31922	71922			1.6925	1.375	1.500	.312	45°	Make To Order
31490				1.6925	1.406		.313	45°	
31869	71869			1.6925	1.430		.248	30°	Make To Order
31491	71491			1.6925	1.500		.250	45°	Make To Order
39050	79050	99050		1.6929	1.260		.394	45°	
31186	71186	91186		1.6929	1.299		.335	45°	
31861	71861			1.6929	1.313		.177	45°	Make To Order
32112	72112			1.6929	1.313		.312	45°	Make To Order
	71185			1.6929	1.339		.325	45°	
	71406			1.6929	1.350		.315	45°	
	79081			1.6929	1.378		.315	45°	
39049	79049	99049		1.6929	1.378		.394	45°	
	71391			1.6929	1.385		.315	45°	
31889	71889			1.6930	1.299		.414	45°	Make To Order
32398	72398			1.6930	1.299		.434	45°	Make To Order
	71947		Special ID Features	1.6930	1.437	1.625	.250	30°	
31704	71704			1.6930	1.438		.365	45°	Make To Order
31213	71213			1.6935	1.390		.305	45°	Make To Order
31856				1.6937	1.394		.305	45°	
31083				1.6940	1.300		.360	45°	
31705	71705			1.6940	1.335		.275	45°	Make To Order
30190				1.6940	1.385	1.520	.305	45°	
30881				1.6940	1.450		.297	45°	
31492	71492			1.6945	1.281		.313	45°	Make To Order
31706	71706			1.6945	1.338		.309	45°	Make To Order
31493	71493			1.6945	1.344		.375	45°	Make To Order
31707	71707			1.6945	1.375		.295	45°	
31288				1.6945	1.390	1.480	.305	45°	
31708	71708			1.6945	1.397		.257	45°	Make To Order
	71701+5		(+.005 O.D.)	1.6950	1.250		.375	45°	
32015	72015			1.6955	1.312		.350	45°	Make To Order
32165	72165	92165	Special ID Features	1.6960	1.350	1.580	.305	45°	Make To Order
31846+10	71846+10		(+.010 O.D.)	1.6970	1.438	1.546	.365	45°	Make To Order
	70664+5		(+.005 O.D.)	1.6970	1.438		.219	45°	
	72389		Special ID Features	1.6980	1.419	1.598	.264	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31704+5	71704+5		(+.005 O.D.)	1.6980	1.438		.365	45°	Make To Order
32005	72005			1.7000	1.300		.250	45°	Make To Order
32185	72185			1.7000	1.300	1.566	.400	45°	Make To Order
31331	71331			1.7000	1.413		.375	45°	Make To Order
	72512		Special ID Features	1.7005	1.360		.264	45°	
	78003			1.7008	1.260		.315	45°	
31021	71021			1.7028	1.417		.315	45°	
31704+10	71704+10		(+.010 O.D.)	1.7030	1.438		.365	45°	Make To Order
31857				1.7035	1.394		.315	45°	
	71085			1.7059	1.384		.250	45°	
31084	71084			1.7059	1.384		.354	45°	
31869+15	71869+15		(+.015 O.D.)	1.7075	1.430		.248	30°	Make To Order
30678+20	70678+20		(+.020 O.D.)	1.7120	1.375		.250	45°	Make To Order
39051	79051			1.7126	1.378		.394	45°	
39070	79070			1.7126	1.417		.394	45°	Make To Order
	71503			1.7140	1.313		.313	45°	
32356				1.7200	1.280		.350	45°	
32121	72121			1.7205	1.378		.318	45°	Make To Order
	71814			1.7205	1.457		.335	45°	
	72218		Special ID Features	1.7210	1.360	1.565	.264	45°	
31709	71709	91709		1.7220	1.358		.265	45°	
31869+30	71869+30		(+.030 O.D.)	1.7225	1.430		.248	30°	Make To Order
32442				1.7320	1.338		.434	45°	
31890	71890			1.7320	1.339		.414	45°	Make To Order
31709+10	71709+10	91709+10	(+.010 O.D.)	1.7320	1.358		.265	45°	Make To Order
	72242		Special ID Features	1.7320	1.457	1.457	.365	R.212	
39053	79053	99053		1.7323	1.299		.394	45°	
31187	71187			1.7323	1.339		.374	45°	
	71375			1.7323	1.417		.276	45°	
	79082			1.7323	1.417		.315	45°	
39052				1.7323	1.417		.394	45°	
		92101		1.7327	1.417		.238	45°	
31929	71929			1.7330	1.375		.312	45°	Make To Order
31920	71920			1.7330	1.375		.375	45°	Make To Order
31710	71710			1.7330	1.455		.365	45°	Make To Order
	71925			1.7330	1.455	1.620	.365	45°	
31110				1.7333	1.335		.372	45°	
32057	72057			1.7350	1.338	1.583	.350	45°	Make To Order
		92260		1.7362	1.280		.315	45°	
	72342			1.7374	1.398		.274	45°	
	72215	92215		1.7374	1.417		.354	45°	
31971	71971		Special ID Features	1.7407	1.398	1.622	.276	45°	Make To Order
31709+20	71709+20	91709+20	(+.020 O.D.)	1.7420	1.358		.265	45°	Make To Order
31907				1.7420	1.487		.268	45°	
31086	71086			1.7421	1.457		.315	45°	
32240			Special ID Features	1.7421	1.480	1.642	.282	44°	
		92103		1.7425	1.457		.250	45°	
31309	71309			1.7460	1.406		.375	45°	Make To Order
39056	79056	99056		1.7520	1.181		.394	45°	
31709+30	71709+30	91709+30	(+.030 O.D.)	1.7520	1.358		.265	45°	Make To Order
39071	79071	99071		1.7520	1.417		.394	45°	
39055	79055	99055		1.7520	1.417		.433	45°	
31862				1.7524	1.437		.157	45°	
	71128			1.7550	1.250		.250	45°	
31232				1.7550	1.312		.395	45°	
30889				1.7550	1.313		.250	45°	
31712	71712			1.7550	1.360		.315	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31711	71711			1.7550	1.375		.188	45°	Make To Order
30652	70652			1.7550	1.375		.219	45°	
30653	70653			1.7550	1.375		.250	45°	
30654	70654			1.7550	1.375		.313	45°	
31713	71713			1.7550	1.430		.215	45°	Make To Order
32350				1.7550	1.437		.375	45°	
30891	70891			1.7550	1.438	1.610	.203	45°	Make To Order
30655	70655			1.7550	1.438		.219	45°	
30656	70656	90656		1.7550	1.438		.250	45°	
31117				1.7550	1.438	1.500	.302	45°	
30657	70657			1.7550	1.438		.313	45°	
32273				1.7550	1.468		.220	45°	
32109				1.7550	1.468		.312	45°	
30658	70658			1.7550	1.500		.219	45°	
30659	70659	90659		1.7550	1.500		.250	45°	
	70660			1.7550	1.500		.313	45°	
	71381			1.7559	1.378		.295	45°	
31863				1.7559	1.476		.281	45°	
	71165			1.7560	1.313		.313	45°	
31246	71246			1.7560	1.410	1.560	.315	45°	Make To Order
	71221			1.7560	1.437		.302	45°	
31045				1.7560	1.438	1.500	.188	45°	
31215				1.7560	1.445	1.617	.310	45°	
31209				1.7560	1.594		.278	45°	
31467	71467			1.7570	1.323	1.490	.280	45°	Make To Order
31717	71717			1.7570	1.360		.315	45°	Make To Order
30869	70869			1.7570	1.372	1.429	.281	53°	Make To Order
31129	71129			1.7570	1.375		.375	45°	
31900				1.7570	1.375		.450	45°	
	70127			1.7570	1.385	1.559	.380	45°	
31265	71265			1.7570	1.400		.420	45°	Make To Order
30165				1.7570	1.410	1.560	.315	45°	
32201	72201		Special ID Features	1.7570	1.410		.400	45°	Make To Order
31714	71714			1.7570	1.454		.277	45°	Make To Order
31718	71718			1.7570	1.455		.307	45°	Make To Order
31317				1.7570	1.457		.312	45°	
31719	71719			1.7570	1.460		.275	45°	Make To Order
30129	70129			1.7570	1.460	1.553	.425	45°	Make To Order
31715				1.7570	1.468		.276	45°	
31720	71720			1.7570	1.500		.255	45°	Make To Order
31494	71494			1.7570	1.531		.312	45°	Make To Order
32158	72158			1.7600	1.250		.375	45°	Make To Order
31229	71229			1.7600	1.312		.395	45°	Make To Order
32245	72245			1.7600	1.409		.377	45°	Make To Order
30658+5	70658+5		(+.005 O.D.)	1.7600	1.500		.219	45°	Make To Order
	71392			1.7618	1.457		.335	45°	
31994				1.7648	1.511		.265	45°	
39058	79058	99058		1.7717	1.339		.472	45°	
	71227			1.7717	1.358		.394	45°	
	79083			1.7717	1.417		.315	45°	
	71393			1.7717	1.457		.335	45°	
39057	79057	99057		1.7717	1.457		.472	45°	
31891	71891			1.7720	1.358		.434	45°	Make To Order
	72416	92416		1.7725	1.433		.270	45°	
31721	71721			1.7750	1.458		.300	45°	Make To Order
32117	72117			1.7750	1.487		.312	20°	Make To Order
31227+5	71227+5		(+.005 O.D.)	1.7770	1.358		.394	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
	72395			1.7800	1.620		.188	45°	
	71257	91257		1.7810	1.476		.311	45°	
31991	71991			1.7814	1.535		.226	45°	Make To Order
	71404			1.7815	1.496		.315	45°	
	71472			1.7815	1.535		.295	45°	
31722	71722			1.7825	1.490		.340	30°	Make To Order
	71230			1.7840	1.469		.290	45°	
32327			Special ID Features	1.7856	1.514	1.680	.275	R.159	
31257+5	71257+5		(+.005 O.D.)	1.7860	1.476		.311	45°	Make To Order
31087	71087			1.7863	1.406		.288	45°	
	72002			1.7863	1.500		.288	45°	
	71427			1.7874	1.409		.297	45°	
31257+10	71257+10		(+.010 O.D.)	1.7910	1.476		.311	45°	Make To Order
	71801			1.7913	1.440		.374	45°	
39059	79059			1.7913	1.457		.472	45°	
31088	71088			1.7969	1.418		.390	45°	
31723	71723			1.8035	1.571		.312	45°	Make To Order
31825			Special ID Features	1.8045	1.375	1.610	.375	45°	
		91933		1.8060	1.417		.292	45°	
	72392		Special ID Features	1.8100	1.535	1.731	.364	30°	
39061	79061	99061		1.8110	1.339		.472	45°	
	71188			1.8110	1.398		.394	45°	
31892	71892			1.8110	1.398		.434	45°	Make To Order
	79084			1.8110	1.496		.315	45°	
39060	79060			1.8110	1.496		.472	45°	
32230	72230		Special ID Features	1.8110	1.555	1.703	.333	45°	Make To Order
31843				1.8120	1.450		.197	30°	
	72359		Special ID Features	1.8120	1.540	1.650	.365	30°	
	72436		Special ID Features	1.8120	1.560		.365	20°	Make To Order
31827		91827		1.8125	1.540		.365	60°	
32238			Special ID Features	1.8134	1.567	1.714	.282	44°	
32055	72055			1.8140	1.475	1.708	.242	60°	Make To Order
31724	71724			1.8140	1.600		.315	45°	Make To Order
	71376			1.8150	1.392		.297	45°	
31725	71725			1.8150	1.595		.250	45°	Make To Order
32214	72214			1.8161	1.496		.276	45°	Make To Order
	71355			1.8161	1.505		.280	45°	
31919	71919			1.8169	1.496		.307	45°	Make To Order
	70903			1.8170	1.375		.313	45°	
30905	70905			1.8170	1.438		.313	45°	
31843+5	71843+5		(+.005 O.D.)	1.8170	1.450		.197	30°	Make To Order
31089				1.8170	1.484		.250	45°	
31131	71131			1.8170	1.500		.375	45°	
31726				1.8170	1.540		.365	30°	
	70542			1.8170	1.562	1.655	.365	45°	
31459				1.8175	1.438		.375	45°	
31827+5	71827+5		(+.005 O.D.)	1.8175	1.540		.365	30°	Make To Order
31283				1.8175	1.625		.219	45°	
31967	71967			1.8178	1.528	1.695	.277	45°	Make To Order
32008				1.8179	1.500		.256	45°	
	71954			1.8180	1.414		.334	45°	
32135	72135			1.8180	1.438		.188	45°	Make To Order
31269	71269			1.8180	1.438		.219	45°	
30904				1.8180	1.438		.250	45°	
32111				1.8180	1.438		.312	45°	
30680	70680	90680		1.8180	1.468		.313	45°	
30530	70530			1.8180	1.500	1.625	.219	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
30668	70668			1.8180	1.500		.219	45°	
30672	70672			1.8180	1.500		.250	45°	
30741				1.8180	1.500		.281	45°	
30907	70907	90907		1.8180	1.500		.312	45°	
	71961			1.8180	1.520		.177	45°	
31910				1.8180	1.520		.300	45°	
	71951			1.8180	1.520		.334	45°	
30667	70667			1.8180	1.563		.219	45°	
30671	70671			1.8180	1.563		.250	45°	
32379				1.8180	1.563		.280	45°	
31000	71000			1.8180	1.563		.313	45°	
32157	72157	92157		1.8185	1.500		.312	60°	Make To Order
32253	72253	92253		1.8185	1.500		.512	60°	Make To Order
31211	71211			1.8185	1.656		.307	45°	Make To Order
32475				1.8187	1.365		.450	45°	
32426				1.8190	1.375		.450	45°	
31137	71137			1.8190	1.405		.315	45°	
31327				1.8190	1.440	1.508	.316	45°	
30030				1.8190	1.490	1.600	.305	45°	
31831	71831			1.8190	1.490		.334	45°	Make To Order
31307				1.8190	1.496		.157	45°	
31243	71243			1.8195	1.405	1.632	.315	45°	Make To Order
31284				1.8195	1.440	1.515	.315	45°	
31728	71728			1.8195	1.450		.295	45°	Make To Order
31237	71237			1.8195	1.490	1.628	.307	45°	Make To Order
31285				1.8195	1.500	1.555	.278	45°	
31239	71239			1.8195	1.530	1.710	.307	45°	Make To Order
31727	71727			1.8195	1.535		.293	45°	Make To Order
	72011			1.8195	1.570		.284	60°	
31729	71729			1.8195	1.571		.283	30°	Make To Order
31730	71730			1.8195	1.590		.450	45°	Make To Order
31319				1.8200	1.435	1.505	.314	45°	
	72306		Special ID Features	1.8203	1.570	1.660	.282	30°	
31843+10	71843+10		(+.010 O.D.)	1.8220	1.450		.197	30°	Make To Order
31726+5	71726+5		(+.005 O.D.)	1.8220	1.540		.365	30°	Make To Order
31827+10	71827+10		(+.010 O.D.)	1.8225	1.540		.365	30°	Make To Order
31283+5	71283+5		(+.005 O.D.)	1.8225	1.625		.219	45°	Make To Order
30671+5	70671+5		(+.005 O.D.)	1.8230	1.563		.250	45°	Make To Order
32229	72229		Special ID Features	1.8250	1.560	1.671	.272	58.5°	Make To Order
31726+10	71726+10		(+.010 O.D.)	1.8270	1.540		.365	30°	Make To Order
31090	71090			1.8303	1.437		.375	45°	
39062	79062			1.8307	1.496		.472	45°	
		92050		1.8307	1.575		.276	45°	
31731	71731			1.8315	1.555		.280	30°	Make To Order
31433	71433			1.8358	1.496		.285	45°	
31731+15	71731+15		(+.015 O.D.)	1.8465	1.555		.280	30°	Make To Order
31732	71732			1.8465	1.563		.281	30°	Make To Order
31266	71266			1.8490	1.563	1.662	.365	45°	Make To Order
32474				1.8497	1.365		.450	45°	
31893	71893			1.8500	1.437		.434	45°	Make To Order
		92373		1.8500	1.500		.281	60°	
39065	79065	99065		1.8504	1.417		.472	45°	
31228	71228			1.8504	1.437		.394	45°	
39063				1.8504	1.535		.472	45°	
31732+5	71732+5		(+.005 O.D.)	1.8515	1.563		.281	30°	Make To Order
31734	71734			1.8530	1.500		.273	30°	
	72364		Special ID Features	1.8535	1.500		.272	30°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
	72217		Special ID Features	1.8540	1.499	1.619	.273	60°	
	72376		Special ID Features	1.8545	1.570	1.711	.249	45°	
	72232		Special ID Features	1.8545	1.576	1.788	.230	45°	
		92373+5	(+.005 O.D.)	1.8550	1.500		.281	60°	
31228+5	71228+5		(+.005 O.D.)	1.8555	1.437		.394	45°	Make To Order
	71268			1.8560	1.635		.280	45°	
31732+10	71732+10		(+.010 O.D.)	1.8565	1.563		.281	30°	Make To Order
	71339			1.8567	1.457		.339	45°	
	72478			1.8575	1.614		.275	45°	
		92446		1.8578	1.614		.276	45°	
31735	71735			1.8580	1.608		.209	30°	Make To Order
		92373+10	(+.010 O.D.)	1.8600	1.500		.281	60°	
31731+30	71731+30		(+.030 O.D.)	1.8615	1.555		.280	30°	Make To Order
31734+10	71734+10		(+.010 O.D.)	1.8630	1.500		.273	30°	Make To Order
	71377			1.8661	1.535		.315	45°	
		92373+20	(+.020 O.D.)	1.8700	1.500		.281	60°	
39066	79066			1.8701	1.535		.472	45°	
31734+20	71734+20		(+.020 O.D.)	1.8730	1.500		.273	30°	Make To Order
	71378			1.8740	1.435		.382	45°	
32020	72020			1.8780	1.575		.305	45°	Make To Order
31835	71835			1.8780	1.642		.282	45°	Make To Order
	72307		Special ID Features	1.8785	1.565	1.725	.438	30°	
31736	71736			1.8800	1.500		.219	45°	Make To Order
30919	70919			1.8800	1.500		.250	45°	
31091	71091			1.8800	1.500		.375	45°	
	71930			1.8800	1.562	1.740	.187	45°	
32175	72175			1.8800	1.562	1.812	.187	60°	Make To Order
30509	70509			1.8800	1.562		.250	45°	
30923	70923	90923		1.8800	1.562		.312	45°	
	71739			1.8800	1.563		.438	30°	
32119				1.8800	1.594		.375	45°	
31921	71921			1.8800	1.625	1.740	.187	60°	Make To Order
31737	71737	91737		1.8800	1.625		.188	45°	Make To Order
	71955			1.8800	1.625	1.775	.219	45°	
32114	72114			1.8805	1.500		.294	45°	Make To Order
32297	72297			1.8810	1.437		.375	60°	Make To Order
32427				1.8810	1.437		.450	45°	
30920	70920			1.8810	1.500		.313	45°	
31238	71238			1.8810	1.563		.219	45°	
31217				1.8810	1.575		.317	45°	
30687	70687			1.8810	1.594		.250	45°	
30688	70688			1.8810	1.594		.313	45°	
30689	70689			1.8810	1.594		.328	45°	Make To Order
		92026		1.8810	1.594		.375	45°	
30681	70681			1.8810	1.625		.219	45°	
30682	70682			1.8810	1.625		.250	45°	
30683				1.8810	1.625		.281	45°	
30684	70684			1.8810	1.625		.313	45°	
30685	70685			1.8810	1.625		.375	45°	Make To Order
	70686			1.8810	1.625		.453	45°	
	71394			1.8819	1.575		.315	45°	
	70138			1.8820	1.505	1.689	.380	45°	
32151	72151		Special ID Features	1.8820	1.565	1.815	.257	37°	Make To Order
32225	72225			1.8820	1.575		.250	45°	Make To Order
31741	71741			1.8820	1.575		.290	45°	Make To Order
31034	71034			1.8820	1.575	1.692	.317	45°	
31256	71256			1.8820	1.575	1.732	.317	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31316				1.8820	1.575		.320	45°	
31092	71092			1.8820	1.600		.252	45°	
31740	71740			1.8820	1.615		.290	45°	Make To Order
31742	71742			1.8820	1.625		.352	45°	Make To Order
31495	71495			1.8820	1.640		.280	45°	Make To Order
31734+30	71734+30		(+.030 O.D.)	1.8830	1.500		.273	30°	Make To Order
31955+5	71955+5		(+.005 O.D.)	1.8850	1.625	1.775	.219	45°	Make To Order
31956	71956			1.8850	1.625		.219	45°	Make To Order
	71189			1.8890	1.476		.394	45°	
		92261		1.8898	1.417		.335	45°	
		92391	Special ID Features	1.8898	1.417	1.668	.360	35°	
39069	79069	99069		1.8898	1.457		.472	45°	
39068	79068			1.8898	1.496		.433	45°	
39067	79067			1.8898	1.575		.472	45°	
31894				1.8900	1.476		.434	45°	
31930+10	71930+10		(+.010 O.D.)	1.8900	1.562	1.740	.187	45°	Make To Order
32119+10	72119+10		(+.010 O.D.)	1.8900	1.594		.375	45°	Make To Order
	71913			1.8917	1.575		.315	45°	
	72502		Special ID Features	1.8937	1.579		.240	30°	
	72221			1.8976	1.457		.284	45°	
31743	71743			1.9000	1.645		.250	45°	Make To Order
31745	71745			1.9000	1.650		.220	30°	Make To Order
31744	71744			1.9000	1.650		.300	45°	Make To Order
32045	72045			1.9055	1.482		.181	60°	Make To Order
31834	71834			1.9080	1.561		.397	45°	Make To Order
31746	71746			1.9120	1.625		.281	45°	
31984	71984			1.9150	1.554		.250	45°	Make To Order
31945				1.9181	1.703		.197	45°	
31860				1.9232	1.634		.177	45°	
31895				1.9290	1.516		.434	45°	
31926	71926			1.9290	1.652	1.850	.311	45°	Make To Order
	71190			1.9291	1.516		.394	45°	
	71191			1.9291	1.654		.315	45°	
32062	72062			1.9316	1.575	1.839	.372	45°	Make To Order
32061	72061			1.9316	1.575	1.839	.450	45°	Make To Order
32275	72275			1.9340	1.620	1.765	.319	27°	Make To Order
32203	72203		Special ID Features	1.9410	1.557		.470	45°	Make To Order
31747	71747			1.9420	1.540		.315	45°	Make To Order
32115				1.9420	1.563		.375	45°	
31748	71748			1.9425	1.578		.203	45°	Make To Order
30933	70933			1.9430	1.563		.219	45°	
30932	70932			1.9430	1.563		.250	45°	
	71496			1.9430	1.563		.313	45°	
31497	71497			1.9430	1.625		.250	45°	
31749				1.9430	1.625		.281	45°	
31134	71134			1.9430	1.625		.312	45°	
31471				1.9430	1.625		.375	45°	
30935				1.9430	1.688		.188	45°	
30936				1.9430	1.688		.219	45°	
32378				1.9430	1.688		.281	45°	
31250	71250			1.9435	1.573	1.719	.379	45°	Make To Order
31281				1.9435	1.573		.379	45°	
31262				1.9435	1.625		.219	45°	
31242	71242			1.9435	1.750		.219	45°	Make To Order
31166	71166			1.9440	1.500		.313	45°	
30141	70141			1.9440	1.575	1.719	.380	45°	Make To Order
30560	70560			1.9440	1.688		.250	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31750	71750			1.9445	1.674		.276	45°	Make To Order
31974	71974			1.9450	1.500		.375	45°	Make To Order
31898				1.9450	1.500		.450	45°	
31324	71324			1.9450	1.570	1.685	.380	45°	Make To Order
31322	71322			1.9460	1.525		.425	45°	Make To Order
31118	71118			1.9460	1.688		.379	45°	Make To Order
32324			Special ID Features	1.9510	1.691	1.860	.262	R.187	
31751	71751			1.9520	1.660		.345	45°	Make To Order
32247	72247			1.9530	1.500		.287	45°	Make To Order
32396				1.9550	1.695		.270	45°	
32196				1.9570	1.665		.280	45°	
32205	72205			1.9570	1.750		.280	45°	Make To Order
31752	71752			1.9620	1.595		.365	30°	Make To Order
31923	71923			1.9620	1.595	1.775	.365	60°	Make To Order
	72241		Special ID Features	1.9620	1.597	1.597	.365	R.178	
		92282		1.9685	1.500		.335	45°	
	71192			1.9685	1.535		.394	45°	
	72065			1.9685	1.614		.315	45°	
	72040	92040		1.9685	1.693		.295	45°	
31753	71753			1.9690	1.535		.413	45°	Make To Order
31896	71896			1.9690	1.535		.453	45°	Make To Order
	72331			1.9728	1.693		.394	45°	
32127	72127			1.9730	1.646		.287	45°	Make To Order
31754	71754			1.9730	1.658		.300	45°	Make To Order
30297				1.9800	1.694		.250	45	
	72332			1.9807	1.693		.402	45°	
	72333			1.9886	1.693		.409	45°	
31755	71755			1.9910	1.616		.309	45°	Make To Order
31978	71978			1.9970	1.646	1.815	.296	45°	Make To Order
32163				2.0000	1.580		.375	45°	
32358				2.0000	1.593	1.790	.375	45°	
32078			Special ID Features	2.0000	1.600	1.870	.375	45°	
32237				2.0000	1.665	1.837	.375	60°	
32459				2.0000	1.681	1.820	.400	45°	
32090				2.0000	1.745	1.844	.400	45°	
32017	72017			2.0005	1.602		.377	45°	
	72401			2.0006	1.730	1.906	.264	49°	
31756	71756			2.0010	1.712		.385	30°	
31757	71757			2.0030	1.688		.282	30°	Make To Order
		92362	Special ID Features	2.0030	1.690		.280	30°	
31758				2.0035	1.688		.438	45°	
31761	71761			2.0040	1.685		.317	30°	Make To Order
31759	71759			2.0040	1.688		.438	30°	Make To Order
31760	71760			2.0040	1.718		.345	45°	Make To Order
30952	70952			2.0050	1.813		.219	45°	
31762	71762			2.0055	1.562		.250	45°	Make To Order
31763	71763			2.0055	1.750		.156	45°	Make To Order
31280	71280			2.0060	1.563		.313	45°	Make To Order
	71988			2.0060	1.600		.375	45°	
30723				2.0060	1.625		.219	45°	
30724	70724			2.0060	1.625		.250	45°	
30725		90725		2.0060	1.625		.281	45°	
31506	71506	91506		2.0060	1.625		.281	30°	Make To Order
	70726			2.0060	1.625		.297	45°	
30727	70727			2.0060	1.625		.313	45°	
30728				2.0060	1.625		.344	45°	
30729	70729			2.0060	1.625		.375	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
30730				2.0060	1.625		.438	45°	
31829		91829		2.0060	1.630		.280	0°	
	72344			2.0060	1.688		.188	45°	
32134	72134			2.0060	1.688		.215	45°	Make To Order
30698	70698	90698		2.0060	1.688		.219	45°	
31957	71957		Special ID Features	2.0060	1.688	1.900	.219	30°	
30704	70704			2.0060	1.688		.234	45°	Make To Order
30699	70699			2.0060	1.688		.250	45°	
30700	70700			2.0060	1.688		.282	45°	
32408			Special ID Features	2.0060	1.688	1.949	.282	35°	
30701				2.0060	1.688		.313	45°	
30702				2.0060	1.688		.375	45°	
30703				2.0060	1.688		.438	45°	
31756+5	71756+5		(+.005 O.D.)	2.0060	1.712		.385	30°	Make To Order
30690	70690			2.0060	1.750		.188	45°	
30691	70691	90691		2.0060	1.750		.219	45°	
	72298			2.0060	1.750	1.880	.219	45°	
30692	70692			2.0060	1.750		.250	45°	
30693	70693			2.0060	1.750		.281	45°	Make To Order
30694				2.0060	1.750		.313	45°	
30695	70695			2.0060	1.750		.375	45°	Make To Order
30696	70696			2.0060	1.750		.438	45°	Make To Order
30697	70697			2.0060	1.750		.453	45°	Make To Order
31975	71975		Special ID Features	2.0065	1.600	1.878	.375	45°	Make To Order
31899	71899			2.0070	1.562		.450	45°	Make To Order
	71415			2.0079	1.575		.217	45°	
	71193			2.0079	1.575		.413	45°	
31757+5	71757+5		(+.005 O.D.)	2.0080	1.688		.282	30°	Make To Order
	72363		Special ID Features	2.0080	1.700		.280	30°	
32190	72190			2.0100	1.600		.400	45°	Make To Order
32385	72385			2.0100	1.600		.400	45°	Make To Order
32017+10	72017+10		(+.010 O.D.)	2.0105	1.602		.377	45°	Make To Order
31755+20	71755+20		(+.020 O.D.)	2.0110	1.616		.309	45°	Make To Order
		90725+5	(+.005 O.D.)	2.0110	1.625		.281	45°	
30726+5	70726+5		(+.005 O.D.)	2.0110	1.625		.297	45°	Make To Order
		91829+5	(+.005 O.D.)	2.0110	1.630		.280	0°	
30700+5	70700+5		(+.005 O.D.)	2.0110	1.688		.282	45°	Make To Order
31756+10			(+.010 O.D.)	2.0110	1.712		.385	30°	
32054	72054			2.0123	1.575	1.850	.372	45°	Make To Order
31757+10	71757+10		(+.010 O.D.)	2.0130	1.688		.282	30°	Make To Order
		91959		2.0150	1.670		.282	0°	
31764	71764			2.0150	1.828		.188	45°	Make To Order
		90725+10	(+.010 O.D.)	2.0160	1.625		.281	45°	
32352	72352			2.0160	1.625		.375	45°	Make To Order
31965	71965			2.0160	1.625		.450	45°	Make To Order
30700+10	70700+10		(+.010 O.D.)	2.0160	1.688		.282	45°	Make To Order
	71765			2.0180	1.594		.281	45°	
32386	72386			2.0200	1.600		.400	45°	Make To Order
32017+20	72017+20		(+.020 O.D.)	2.0205	1.602		.377	45°	Make To Order
32277	72277	92277		2.0210	1.586	1.586	.282	90°	Make To Order
31755+30	71755+30		(+.030 O.D.)	2.0210	1.616		.309	45°	Make To Order
31758+20	71758+20		(+.020 O.D.)	2.0235	1.688		.438	45°	Make To Order
31943	71943	91943		2.0250	1.670		.282	0°	Make To Order
		90725+20	(+.020 O.D.)	2.0260	1.625		.281	45°	
32004	72004	92004		2.0270	1.772		.177	45°	
31341				2.0276	1.726		.217	45°	
32418	72418			2.0276	1.726		.257	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31999	71999		Special ID Features	2.0300	1.600	1.878	.375	45°	Make To Order
32017+30	72017+30		(+.030 O.D.)	2.0305	1.602		.377	45°	Make To Order
31939	71939			2.0315	1.571		.374	45°	Make To Order
31758+30	71758+30		(+.030 O.D.)	2.0335	1.688		.438	45°	Make To Order
31934	71934	91934		2.0350	1.610		.325	45°	Make To Order
31952	71952	91952		2.0350	1.670		.282	0°	Make To Order
		90725+30	(+.030 O.D.)	2.0360	1.625		.281	45°	
32017+40	72017+40		(+.040 O.D.)	2.0405	1.602		.377	45°	Make To Order
32034	72034	92034		2.0441	1.732		.406	45°	
31194	71194			2.0472	1.614		.413	45°	
32496	72496		Special ID Features	2.0481	1.770		.254	53°	
32188				2.0485	1.765	1.809	.250	45°	
	72361		Special ID Features	2.0485	1.771	1.928	.339	30°	
31766				2.0485	1.781		.344	30°	
31297	71297			2.0500	1.575		.340	45°	Make To Order
32387	72387			2.0500	1.600		.400	45°	Make To Order
32397				2.0500	1.750		.270	45°	
32017+50	72017+50		(+.050 O.D.)	2.0505	1.602		.377	45°	Make To Order
	71816			2.0508	1.575		.364	45°	
32208				2.0600	1.562		.450	45°	
31980	71980	91980		2.0650	1.610		.325	45°	Make To Order
	72269			2.0669	1.750		.413	45°	
32191	72191			2.0670	1.750		.315	45°	Make To Order
31401	71401			2.0673	1.693		.354	45°	
	72223		Special ID Features	2.0675	1.748	2.026	.392	45°	
31767	71767			2.0680	1.625		.281	45°	Make To Order
32176	72176			2.0680	1.650	1.806	.281	45°	Make To Order
32428				2.0680	1.687		.450	45°	
31768	71768			2.0680	1.688		.281	45°	
31958	71958		Special ID Features	2.0680	1.688	1.900	.229	30°	Make To Order
32154	72154			2.0680	1.724	1.806	.281	45°	Make To Order
32021	72021			2.0680	1.750		.250	45°	Make To Order
31769				2.0680	1.750		.281	45°	
32467	72467			2.0680	1.750	1.949	.281	35°	
32147	72147			2.0680	1.750		.435	45°	Make To Order
32212			Special ID Features	2.0680	1.770	2.016	.250	45°	
30963	70963			2.0680	1.812		.250	45°	
32141	72141			2.0680	1.812	1.900	.281	45°	Make To Order
	71770			2.0680	1.813		.188	45°	
30964				2.0680	1.813	1.875	.250	45°	
31249	71249			2.0685	1.750		.219	45°	
31260	71260			2.0685	1.813	1.895	.250	45°	Make To Order
32445	72445			2.0695	1.750		.281	45°	
32491	72491			2.0695	1.750	1.850	.281	45°	
	72424			2.0695	1.750		.420	45°	
		92048		2.0709	1.752		.236	45°	
32440				2.0720	1.654		.425	45°	
		92383		2.0835	1.732		.406	45°	
31195	71195	91195		2.0866	1.654		.413	45°	
31771				2.0880	1.692		.299	45°	
31475				2.0902	1.697		.382	45°	
		92400		2.0905	1.693	1.929	.327	20°	
	71430			2.0906	1.693		.354	45°	
	72031			2.0906	1.693	1.990	.374	70°	
31424	71424			2.0906	1.693		.394	45°	
	72382			2.0933	1.693		.354	45°	
		97999		2.0945	1.693		.276	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31771+10	71771+10		(+.010 O.D.)	2.0980	1.692		.299	45°	Make To Order
32092	72092			2.1000	1.815	1.914	.400	45°	Make To Order
32071				2.1000	1.818		.431	45°	
31310				2.1050	1.765		.375	45°	
31771+20	71771+20		(+.020 O.D.)	2.1080	1.692		.299	45°	Make To Order
31093	71093			2.1098	1.697		.402	45°	
	71447			2.1102	1.693		.354	45°	
	71441			2.1102	1.693		.394	45°	
		92399		2.1140	1.693		.394	45°	
31771+30	71771+30		(+.030 O.D.)	2.1180	1.692		.299	45°	Make To Order
31454				2.1200	1.812		.375	45°	
		92186		2.1250	1.800		.437	45°	
32231	72231			2.1260	1.755		.311	45°	Make To Order
32223+06	72223+06		Special ID Features	2.1275	1.748	2.026	.392	45°	Make To Order
31772	71772			2.1290	1.813		.437	30°	Make To Order
32060	72060			2.1292	1.747	2.030	.266	60°	Make To Order
		92505		2.1299	1.693		.394	45°	
32169	72169			2.1300	1.700		.437	45°	Make To Order
32153	72153			2.1300	1.724	1.932	.437	45°	Make To Order
32155	72155			2.1300	1.724	1.887	.437	45°	Make To Order
30557	70557			2.1300	1.812		.250	45°	
31330	71330			2.1300	1.812		.375	45°	Make To Order
32139		92139		2.1300	1.812	2.030	.437	45°	
32140	72140			2.1300	1.812	2.000	.437	45°	Make To Order
31124				2.1300	1.813		.313	45°	
32097	72097			2.1300	1.850	1.975	.250	60°	Make To Order
30974				2.1300	1.875		.219	45°	
30537	70537			2.1300	1.875		.250	45°	
32003				2.1300	1.906		.177	45°	
	71473	91473		2.1300	1.906		.234	45°	
31773	71773			2.1300	1.938		.188	45°	Make To Order
32053	72053			2.1304	1.747	2.030	.266	60°	Make To Order
	71777			2.1305	1.750		.219	45°	
	71776			2.1305	1.750		.250	45°	
31774	71774			2.1305	1.750		.281	45°	Make To Order
31775	71775			2.1305	1.750		.375	45°	Make To Order
31779		91779		2.1305	1.813		.188	45°	
31498	71498			2.1305	1.906		.250	45°	
31867	71867			2.1307	1.935		.219	45°	Make To Order
	71990			2.1310	1.810		.375	45°	
31240	71240			2.1310	1.813		.219	45°	
31780	71780			2.1310	1.813		.437	30°	Make To Order
32024	72024			2.1310	1.845		.312	45°	Make To Order
31897				2.1320	1.690		.450	45°	
31985	71985			2.1320	1.810		.312	45°	Make To Order
	71338	91338		2.1339	1.693		.339	45°	
	71417			2.1339	1.752		.287	45°	
	72216	92216		2.1340	1.693		.394	45°	
32202	72202		Special ID Features	2.1340	1.805		.470	45°	Make To Order
	72439			2.1350	1.750		.219	80°	
	72171		Special ID Features	2.1360	1.652	1.978	.310	52°	
	72172		Special ID Features	2.1360	1.705	1.978	.295	60°	
31781	71781			2.1360	1.705		.319	45°	Make To Order
	71504			2.1370	1.700		.400	45°	
32084	72084			2.1370	1.810		.400	45°	Make To Order
31830				2.1400	1.812		.375	45°	
31938	71938			2.1496	1.748		.268	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
31782	71782	92402		2.1500	1.859		.292	30°	Make To Order
				2.1516	1.720		.394	45°	
32204	72204		Special ID Features	2.1560	1.770		.400	45°	Make To Order
32200	72200		Special ID Features	2.1560	1.830		.400	45°	Make To Order
	72347	92022		2.1600	1.750		.350	45°	
				2.1600	1.750		.375	45°	
31271	71271			2.1600	1.800		.300	45°	Make To Order
32067	72067			2.1600	1.810		.350	45°	Make To Order
32023	72023	92023		2.1600	1.810		.375	45°	Make To Order
32068	72068			2.1600	1.880		.350	45°	Make To Order
32016	72016			2.1605	1.747		.352	45°	Make To Order
32209				2.1640	1.750		.450	45°	
31783	71783			2.1654	1.732		.433	45°	Make To Order
31141	71141			2.1654	1.732		.472	45°	
		92506		2.1693	1.693		.394	45°	
				2.1700	1.732		.433	45°	
	71783+5		(+.005 O.D.)	2.1700	1.732		.433	45°	
32120	72120		Special ID Features	2.1700	1.752	1.825	.327	62.5°	Make To Order
32354				2.1700	1.800		.375	45°	
32234	72234			2.1700	1.810		.350	45°	Make To Order
31935	71935			2.1700	1.812		.375	45°	Make To Order
32184	72184			2.1700	1.813	2.072	.400	45°	Make To Order
31351	71351			2.1701	1.751		.336	45°	Make To Order
32041				2.1701	1.751		.336	80°	
	72044			2.1701	1.751		.336	80°	
32016+10	72016+10			(+.010 O.D.)	2.1705	1.747		.352	45°
32355	72355			2.1800	1.800		.375	45°	Make To Order
32235	72235			2.1800	1.810		.350	45°	Make To Order
32016+20	72016+20		(+.020 O.D.)	2.1805	1.747		.352	45°	Make To Order
	72431		Special ID Features	2.1856	1.820		.338	36.8°	
32016+30	72016+30		(+.030 O.D.)	2.1905	1.747		.352	45°	Make To Order
31499	71499		2.1925	1.875		.250	45°	Make To Order	
32349				2.1925	1.875		.375	45°	
31784	71784			2.1930	1.688		.281	45°	Make To Order
31785	71785			2.1930	1.813		.281	45°	Make To Order
31282				2.1930	1.937		.250	45°	
30984	70984			2.1935	1.875		.281	45°	
32429				2.1940	1.800		.450	45°	
31135				2.1940	1.812		.250	45°	
	72276			2.1940	1.812		.375	45°	
32447				2.1940	1.820		.340	45°	
31928	71928			2.1940	1.906		.250	45°	Make To Order
	72481			2.1945	1.812		.281	45°	
32014	72014			2.1955	1.750		.350	45°	Make To Order
32093				2.2000	1.720	1.863	.312	45°	
31986	71986			2.2000	1.820		.375	45°	Make To Order
32087				2.2000	1.830	1.983	.312	45°	
31982	71982			Special ID Features	2.2000	1.835	1.990	.312	45°
	72492			2.2050	1.880		.384	45°	
31786	71786			2.2200	1.843		.312	45°	Make To Order
32059	72059			2.2280	1.810		.372	45°	Make To Order
32499				Special ID Features	2.2441	1.811		.433	-
31335	71335		Special ID Features	2.2500	1.820	2.193	.375	53°	Make To Order
32357			2.2500	1.947	2.120	.312	45°		
31787	71787			2.2550	1.875		.375	45°	
31788	71788			2.2555	1.813		.250	45°	Make To Order
	71470			2.2555	1.875		.313	45°	
30989	70989			2.2555	1.938		.188	45°	

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT PROGRESSIVE LISTING BY OUTSIDE DIAMETER

PART NUMBER SERIES			Product Comments	Actual OD	ID	ID Top Taper	Depth	Seat Angle	Part Status
30000	70000	90000							
32107	72107	92107		2.2560	1.850		.375	45°	Make To Order
32430				2.2560	1.870		.450	45°	
31252	71252			2.2560	1.875		.281	45°	Make To Order
	71261			2.2560	1.938		.219	45°	
31983				2.2560	1.938		.375	45°	
		92156		2.2560	1.960		.250	60°	
	71995			2.2590	1.960		.250	45°	
	72246		Special ID Features	2.2590	1.960	2.135	.250	45°	
32156+10	72156+10	92156+10	(+.010 O.D.)	2.2660	1.960		.250	60°	Make To Order
32013	72013			2.2870	1.949		.238	45°	Make To Order
31457	71457		Special ID Features	2.2900	1.900	2.236	.375	53°	Make To Order
32272				2.3120	1.937		.220	45°	
32108				2.3120	1.937		.312	45°	
30991	70991	90991		2.3180	2.000		.250	45°	
31790	71790			2.3180	2.000		.281	45°	Make To Order
32118				2.3180	2.000		.375	45°	
32058	72058			2.3275	1.928	2.177	.266	60°	Make To Order
32118+10	72118+10		(+.010 O.D.)	2.3280	2.000		.375	45°	Make To Order
31456			Special ID Features	2.3500	1.970	2.290	.375	53°	
31981				2.3500	1.970		.375	45°	
31476				2.3657	2.011		.350	45°	
	72328			2.3665	2.008		.350	45°	
31847	71847			2.3680	1.890		.460	20°	Make To Order
31847+5	71847+5		(+.005 O.D.)	2.3730	1.890		.460	20°	Make To Order
	72329			2.3744	2.008		.358	45°	
31847+10	71847+10		(+.010 O.D.)	2.3780	1.890		.460	20°	Make To Order
31948	71948		Special ID Features	2.3800	1.900	2.242	.375	45°	Make To Order
31791	71791			2.3800	2.000		.188	45°	Make To Order
	72360		Special ID Features	2.3810	1.927	2.140	.319	30°	
31844	71844	91844		2.3810	2.000		.323	30°	Make To Order
32029	72029	92029		2.3810	2.000		.323	60°	Make To Order
31845				2.3810	2.030		.323	60°	
32030	72030	92030		2.3810	2.030		.323	60°	Make To Order
	71815			2.3819	2.000		.394	45°	
30994	70994			2.3820	2.000		.281	45°	Make To Order
	72330			2.3823	2.008		.366	45°	
31844+5	71844+5	91844+5	(+.005 O.D.)	2.3860	2.000		.323	30°	Make To Order
31845+5	71845+5	91845+5	(+.005 O.D.)	2.3860	2.030		.323	30°	Make To Order
31844+10	71844+10	91844+10	(+.010 O.D.)	2.3910	2.000		.323	30°	Make To Order
31845+10	71845+10	91845+10	(+.010 O.D.)	2.3910	2.030		.323	30°	Make To Order
31998	71998		Special ID Features	2.4000	1.900	2.242	.375	45°	Make To Order
32370				2.4430	2.125		.375	45°	
31792	71792			2.4440	2.046		.299	45°	Make To Order
			Special ID Features	2.4500	1.980	2.265	.375	45°	
32073	72073			2.4505	2.000		.312	45°	Make To Order

Make to Order Parts - 300 minimum order quantity (Special pricing may apply).

VALVE SEAT TECHNOLOGY HAS **CHANGED**

GM is equipping the LS3 heads with high tech sintered copper-infiltrated valve seats. High-Performance European engines like BMW and Mercedes also use this technology. This is a powder metal valve seat with a copper wafer that is infiltrated into the valve seat. This creates a unique product of 15% free copper in the microstructure of the seat. Allowing heat to be quickly transferred and performance greatly improved.

GOOD NEWS!

Dura-Bond has developed this technology and it is now available for the aftermarket in our **“KILLER BEE” Valve Seat Line.** Initially offered for the GM LS-Series engines with more applications to come.

- Offers Superior Thermal Conductivity
- Excellent Machining Characteristics
- High Thermal Expansion
- Lowest Wear – Improved Reliability/Durability
- Superior Surface Finishes
- Suitable for HD Intake and Exhaust Seats, Gas and Diesel
- Compatible with Most Valve Materials



“This is a Killer, LS3, Copper-Infiltrated exhaust valve seat.”

Lou Oniga, Powertrain Engineer - GM



Dura-Bond®

Quality Camshaft Bearings Since 1947



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- Superior Surface Finishes



Application	Part #	Actual OD	ID	ID Top Taper	Depth	Seat Angle
Chrysler 4.0L	72420 (Intake)	1.472	1.250	1.372	.310	45°
Chrysler 4.0L	72419C (Exhaust)	1.199	0.960	1.076	.322	45°
Chrysler 4.7L Corsair	72401 (Intake)	2.001	1.730	1.906	.264	49°
Chrysler 4.7L Corsair	72405C (Exhaust)	1.502	1.219	1.408*	.255	57.8°
Chrysler 5.7L Eagle	72431 (Intake)	2.186	1.820	2.007*	.338	53.2°
Chrysler 5.7L Eagle	72432C (Exhaust)	1.602	1.322	1.504*	.276	53.7°
General Motors 6.2L LS3	72443C (Intake)	2.194	1.900		.413	45°
General Motors 6.2L LS3	72444C (Exhaust)	1.632	1.340		.413	45°

Dura-Bond[®]
Quality Camshaft Bearings Since 1947

*Special ID Features

"KILLER BEE" COPPER INFILTRATED VALVE SEAT INSERTS



DESCRIPTION and APPLICATION

GM is equipping the LS3 heads with high tech sintered copper-infiltrated valve seats. High-Performance European engines like BMW and Mercedes also use this technology. This is a powder metal valve seat with a copper wafer that is infiltrated into the valve seat. This creates a unique product of 15% free copper in the microstructure of the seat. Allowing heat to be quickly transferred and performance greatly improved.

- Offers superior thermal conductivity
- Excellent machining characteristics
- Lowest wear - Improved reliability/durability
- High thermal expansion
- Superior surface finishes
- Suitable for HD intake and exhaust seats, gas and diesel
- Compatible with most valve materials



**"Killer Bee"
Valve Seat**

CHEMICAL COMPOSITION

Tungsten
Molybdenum
Chromium
Vanadium
Carbon
Cobalt
Nickel
Manganese
Silicon
Copper
(proprietary)
Iron

"Killer Bee"

3.0
3.375
2.0
1.0
1.0
0.28
0.205
0.35
0.2
15
4.5
bal.

GM LS-3

3.68
2.5
1.84
1.44
0.84
0.24
0.13
0.58
NA
14.45
NA
bal.

PHYSICAL PROPERTIES

Apparent Hardness 35 HRC (approx.)
Micro Hardness 50-56 HRC
Thermal Expansion

Dura-Bond reserves the right to revise composition and specifications without notice.

**"KILLER BEE" COPPER INFILTRATED VALVE SEAT
PROGRESSIVE LISTING BY OUTSIDE DIAMETER**

Part # "Killer Bee"	Product Comments	Actual O.D.	I.D.	ID Top Taper	Depth	Seat Angle
32130C		1.0490	0.825		.298	45°
32210C		1.1450	0.835		.295	45°
32182C		1.1980	0.960		.295	45°
72419C		1.1990	0.960	1.076	.322	45°
70764C		1.2550	1.000		.250	45°
91053C		1.2550	1.000		.250	45°
72480C	Special ID Features	1.2560	0.984		.231	
71348C		1.2992	1.024		.256	45°
72490C		1.3180	1.000		.250	45°
72513C		1.3190	0.975		.315	45°
90779C		1.3190	1.042		.238	45°
70791C		1.3800	1.125		.250	45°
70802C		1.4425	1.125		.250	45°
72514C		1.4567	1.180		.315	45°
32515C		1.4960	1.260		.315	45°
72405C	Special ID Features	1.5020	1.219	1.408	.255	33°
32516C		1.5200	1.215		.315	45°
72524C		1.5354	1.299		.256	45°
30643C		1.5680	1.312		.219	45°
70643C		1.5680	1.312		.219	45°
72432C	Special ID Features	1.6020	1.322		.276	36.3°
72448C		1.6320	1.323		.275	45°
72444C		1.6320	1.340		.413	45°
32476C		1.6500	1.280		.375	45°
32476C+10	(+.010 O.D.)	1.6600	1.280		.400	45°
32476C+20	(+.020 O.D.)	1.6700	1.280		.400	45°
22194C		1.6700	1.350		.375	45°
32476C+30	(+.030 O.D.)	1.6800	1.280		.400	45°
32518C		1.6800	1.325		.400	45°
22264C		1.6900	1.370		.500	R.125
32233C	Special ID Features	1.7500	1.375		.550	
20659C		1.7550	1.500		.250	45°
22199C	Special ID Features	1.7570	1.380	1.717	.400	58°
20907C		1.8180	1.500		.312	45°
31091C		1.8800	1.500		.375	45°
22252C		1.9600	1.625		.375	45°
32366C		1.9600	1.655		.375	45°
22252C+10	(+.010 O.D.)	1.9700	1.625		.400	45°
22252C+20	(+.020 O.D.)	1.9800	1.625		.400	45°
22252C+30	(+.030 O.D.)	1.9900	1.625		.400	45°
22017C, 32017C		2.0005	1.602		.377	45°
32017C+10	(+.010 O.D.)	2.0105	1.602		.377	45°
32017C+20	(+.020 O.D.)	2.0205	1.602		.377	45°
32017C+30	(+.030 O.D.)	2.0305	1.602		.377	45°
17846C		2.0906	1.693	1.990	.303	70°
72443C		2.1940	1.900		.413	45°
22193C		2.2500	1.850		.320	45°
32477C		2.2500	1.950		.375	45°
31949C		2.2555	1.820		.375	45°
32477C+10	(+.010 O.D.)	2.2600	1.950		.400	45°
32477C+20	(+.020 O.D.)	2.2700	1.950		.400	45°
32477C+30	(+.030 O.D.)	2.2800	1.950		.400	45°
22228C		2.3800	1.904		.375	45°
17563C	Special ID Features	2.4074	1.956	2.287	.284	30°
17904C		2.4094	1.890		.354	45°
72510C		2.4140	1.971		.375	45°
22018C		2.4505	2.000		.377	45°
22064C		2.4505	2.090		.375	45°
22365C		2.4600	2.040		.375	45°
22064C+10	(+.010 O.D.)	2.4605	2.090		.400	45°
22064C+20	(+.020 O.D.)	2.4705	2.090		.400	45°
22064C+30	(+.030 O.D.)	2.4805	2.090		.400	45°
22251C		2.5000	2.150		.375	45°
22251C+10	(+.010 O.D.)	2.5100	2.150		.400	45°
22251C+20	(+.020 O.D.)	2.5200	2.150		.400	45°
22251C+30	(+.030 O.D.)	2.5300	2.150		.400	45°

Dura-Bond

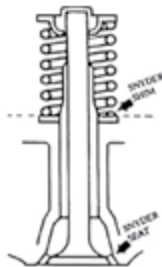
VALVE SPRING BOOSTER SHIMS

Available in both case hardened High Performance and regular series



All Dura-Bond shims meet or exceed OEM specifications.

Only prime quality cold rolled steel is used.



Avoid loss of power due to weak spring tension —

INSTALL BOOSTER SHIMS

Refacing valves and the grinding of valve seats causes loss of metal. This loss of metal results in the loss of proper spring pressure. To restore the proper spring tension, one must replace the lost material by installing a Valve Spring Booster Shim under the valve spring.



1000 SERIES



.015"

3000 SERIES



.030"

6000 SERIES



.060"

Cupped Shims are necessary when the spring base pad area is too shallow to hold the regular shim and the spring in the proper position.

3000 SERIES CUPPED SHIM



.030"

6000 SERIES CUPPED SHIM



.060"

part number	thickness	application
3110-C	.030"	American motors, Chrysler, DeSoto,
6110-C	.060"	Dodge, Dodge Truck, Ford, Lincoln, Mercury, Plymouth, Hercules, John Deere
3153-C	.030"	Chevrolet (remachined pad), Chrysler (remachined pad), Ford (remachined pad), Oldsmobile (remachined pad)
3160-C	.030"	American Motors, Chevrolet, Ford, Lincoln, Mercury, Pontiac, Minneapolis-Moline
6160-C	.060"	
3060-C	.030"	Allis Chalmers, Chrysler, General Motors, International Tractor, John Deere, Mazda, Mercury Marine
6060-C	.060"	

STANDARD REBUILDERS PACK: 500 Pieces per Box • Cupped, Industrial, or HP • 250 Pieces per Box

STANDARD PACKAGE: 100 Pieces per Box • Cupped, Industrial, or HP • 50 Pieces per Box

DESIGN FEATURES

Both sides are flat and without serrations or marks of any kind.

- All OEM specifications call for non-serrated shims.
- Non-serrated shims do not damage the spring pad area on today's aluminum cylinder heads.
- Non-serrated shims lay flat so as not to set up any harmonics in the spring.
- Non-serrated shims lay flat so as not to introduce any lateral loads on the spring, valve or guide.

VALVE SPRING BOOSTER SHIMS PROGRESSIVE LISTING BY OUTSIDE DIAMETER

ACTUAL O.D.	I.D.	PART NUMBER SERIES					
		.015 Thickness		.030 Thickness		.060 Thickness	
0.760	0.578	1003	(C204S)	3003	(B204S)	6003	(A204S)
0.796	0.515	1005	(C204)	3005	(B204)	6005	(A204)
0.915	0.643	1010	(C202)	3010	(B202)	6010	(A202)
0.920	0.520	1011	(C802)	3011	(B802)	6011	(A802)
0.960	0.515	1012	-	3012	-	6012	-
0.960	0.625	1015	-	3015	-	6015	-
1.000	0.515	1022	-	3022	-	6022	-
1.000	0.688	1020	(C101)	3020	(B101)	6020	(A101)
1.002	0.766	1025	(C104)	3025	(B104)	6025	(A104)
1.100	0.721	1030	(C106)	3030	(B106)	6030	(A106)
1.124	0.721	1040	(C300)	3040	(B300)	6040	(A300)
1.140	0.570	1043	(C408)	3043	(B408)	6043	(A408)
1.162	0.825	-	-	3045-I	(B407)	6045-I	(A407)
1.215	0.515	1048	-	3048	-	6048	-
1.215	0.876	1050	(C105)	3050	(B105)	6050	(A105)
1.246	0.814	1060	(C203)	3060	(B203)	6060	(A203)
1.247	0.518	1052	-	3052	-	6052	-
1.247	0.877	1070	(C201)	3070	(B201)	6070	(A201)
1.250	0.625	1055	(C107)	3055	(B107)	6055	(A107)
1.250	0.688	1065	(C107S)	3065	(B107S)	6065	(A107S)
1.250	0.875	1067-HP	-	-	-	-	-
1.270	0.570	1175	-	3175	-	6175	-
1.300	0.520	1230	-	3230	-	6230	-
1.311	0.766	1080	(C302)	3080	(B302)	6080	(A302)
1.311	0.840	1085	-	3085	-	6085	-
1.311	0.890	1087	-	3087	-	6087	-
1.311	0.955	1090	(C100)	3090	(B100)	6090	(A100)
1.330	0.600	1095	-	3095	-	6095	-
1.356	0.642	1100	(C200)	3100	(B200)	6100	(A200)
1.358	1.000	1110	(C102)	3110	(B102)	6110	(A102)
1.374	0.782	-	-	3130-I	(B403)	6130-I	(A403)
1.375	0.766	1120	(C301)	3120	(B301)	6120	(A301)
1.375	1.000	1125	-	3125	-	6125	-
1.375	1.030	1126	-	3126	-	6126	-
1.384	1.018	1127	-	3127	-	6127	-
1.399	0.819	-	-	3060-C	(B505)	6060-C	(A505)
1.400	0.570	1176	-	3176	-	6176	-
1.438	0.645	1135	(C306)	3135	(B306)	6135	(A306)
1.438	0.766	1140	(C305)	3140	(B305)	6140	(A305)
1.438	1.059	1145	-	3145	-	6145	-
1.476	0.705	1150	(C303)	3150	(B303)	6150	(A303)
1.477	0.765	1152	(C602)	3152	(B602)	6152	(A602)
1.500	0.570	1177	-	3177	-	6177	-
1.500	0.645	1153	(C306S)	3153	(B306S)	6153	(A306S)
1.500	1.030	1160	(C103)	3160	(B103)	6160	(A103)
1.502	0.874	1156-I	(C404)	3156-I	(B404)	6156-I	(A404)
1.503	1.155	1170	(C304)	3170	(B304)	6170	(A304)
1.544	1.025	-	-	3110-C	(B502)	6110-C	(A502)
1.600	0.570	1178	-	3178	-	6178	-
1.604	0.820	-	-	3180-I	(B401)	6180-I	(A401)
1.633	0.645	-	-	3153-C	(B506)	6153-C	(A506)
1.633	1.055	-	-	3160-C	(B503)	6160-C	(A503)
1.634	0.643	1185-S-HP	(C601)	3185-S-HP	(B601)	6185-S-HP	(A601)
1.689	1.280	-	-	3190-I	(B402)	6190-I	(A402)
1.750	0.890	-	-	3210-I	(B405)	6210-I	(A405)
1.751	0.818	-	-	3200-I	(B400)	6200-I	(A400)
1.751	1.328	-	-	3220-I	(B406)	6220-I	(A406)

Most of the shims shown in this catalog are available in case hardened ("hp") series.
Use the same part number - just add "hp" to the end.