

K-line



**VALVE GUIDE LINERS &
GUIDE LINER TOOLING**

SIMPLE - FAST - ECONOMICAL

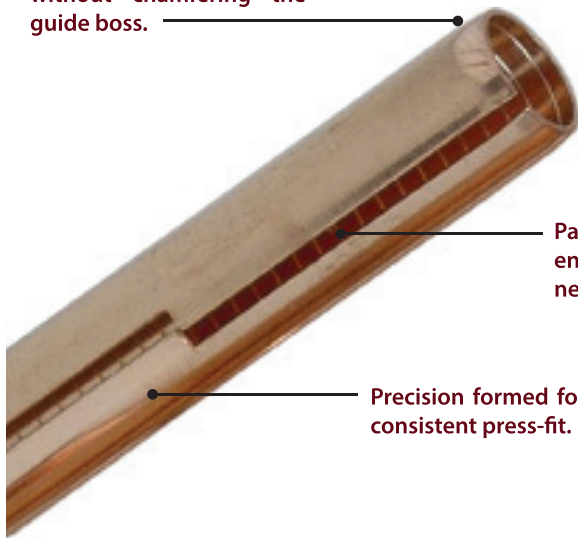
#1 REPAIR METHOD FOR ALUMINUM & CAST IRON CYLINDER HEADS

Our leadership in developing new, cost effective ways to repair worn valve guides led to the development of the BRONZE BULLET® INTERRUPTED SPIRAL® GUIDE-LINER® over forty years ago.

Guide-Liner® Benefits:

- Superior Lubricity - Reduces valve stem sticking and galling.
- Oil control - Interrupted Spiral® reduces the possibility of excessive oil consumption.
- Tighter guide-to-stem clearances for improved performance.
- Improved wear characteristics vs. cast iron (see chart).

Bullet nose feature allows for efficient installation without chamfering the guide boss.

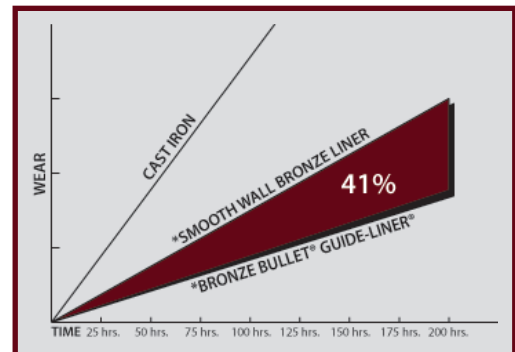


Patented spiral retains engine oil where it's needed.

Precision formed for a consistent press-fit.

Aluminum Cylinder Heads:

- No need to remove original guides.
- No galled or scored guide holes.
- No need for oversize guides.
- Guide-to-seat runout maintained.



Engine Rebuilder Friendly . . . Easy-To-Install

Install in seconds with the auto-installer. Bronze Bullet® Guide-Liners® eliminate the need to chamfer guide bosses, as well as the expense of having to replace valves or guides. The Interrupted Spiral® provides superior lubrication and oil control.

DON'T SETTLE FOR IMITATIONS!

USE THE ORIGINAL



BRONZE BULLET®

BRONZE BULLET® VALVE GUIDE-LINER® 5-STEP INSTALLATION PROCEDURE



INSTRUCTIONAL VIDEOSGUIDE-LINER® INSTALLATION

This professionally produced video gives you a detailed look at the proper procedure for installing the K-Line® Bronze Bullet® Valve Guide-Liner® using recommended installation tools and KL9900 Valve Guide Boring Fixture (page 8). Step-by-step instructions include:

- 1) Boring the valve guide 2) Installing the Bronze Bullet®
- 3) I.D. finishing 4) Trimming excess 5) Flex-Honing

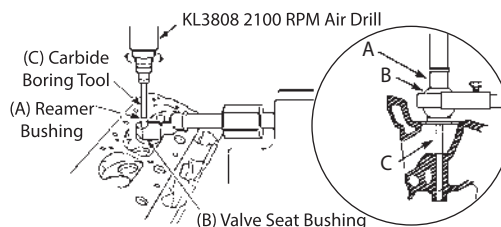
Watch Here:

<https://www.youtube.com/watch?v=LGHMS0XKhsW>

STEP 1 BORE

Use a K-Line® Carbide Boring Tool (page 9) with a high RPM (2,100) Air Drill to bore out the original guide.

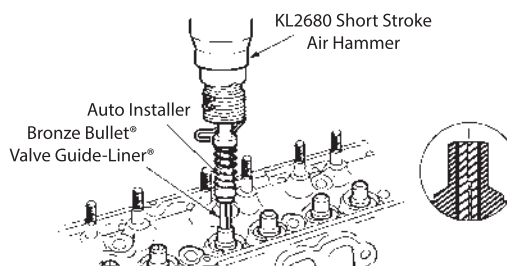
Must use a K-Line® Reamer Bushing (page 9) and K-Line® Valve Seat Bushings (page 6) for proper alignment results. For powdered metal guides, longer life and absolute precision, try a Guide Pro® Solid Carbide Black Beauty® Boring Reamer (page 10).



STEP 2 INSTALL

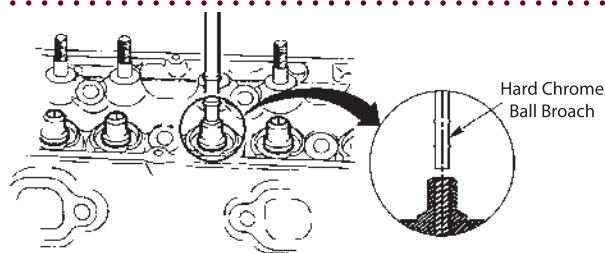
- Blow away chips.
 - Insert Bronze Bullet® (pages 4-7) into holder assembly of the Bronze Bullet® Auto-Installer (page 11).
 - Drive into place with a short stroke H.D. Air Hammer
-
- If the Guide-Liner® installs hard and is under a lot of stress; it is recommended that K-Line® Bronze Lube KL1225 (page 11) be applied providing that the Guide-Liner® doesn't move while ball broaching. If the Guide-Liner® installs easily, it is recommended that no Bronze lube be used. In most cases and in the beginning practice, no Bronze lube should be used.

NOTE: On powdered metal guides you may need to run a Flex-Hone® (page 14) prior to installation.



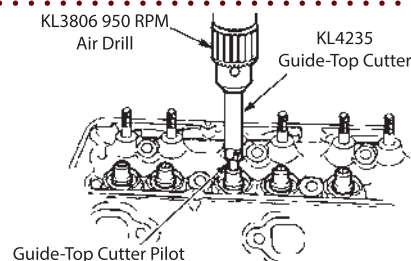
STEP 3 SIZE

- Use Bronze Lube (page 11) in guide and on tool prior to sizing.
- Insert K-Line® Ball Broach (page 12) in guide and drive by air with a Broach Holder KL5758 or KL5759 (page 12) and Air Hammer.



STEP 4 TRIM

Insert appropriate size pilot into K-Line® Carbide Guide Top Cutter (page 13). Using a 2,100 RPM drill, remove any excess Guide-Liner® material from each side of the valve guide.

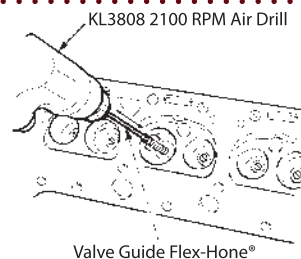


STEP 5 FLEX-HONE (OPTIONAL)

Run the appropriate size Flex-Hone® (page 14) through the Guide-Liner® with a 2,100 RPM drill.

One pass down and one pass up will provide the desired finish.

NOTE: After flex honing, proper guide cleaning is required.



BRONZE BULLET® INTERRUPTED SPIRAL® VALVE GUIDE-LINERS®

Choosing the Right Guide-Liner

Select the proper guide I.D. which corresponds to the clearances you desire. All Guide-Liners have been designed for maximum performance when finished to the stated minimum finished guide I.D. or larger.

Choosing the Right Sizing Tool

To obtain the recommended finished guide I.D., select a slightly larger ball broach (due to material flow-back that occurs during this sizing operation) typically, .001 to .0015 larger than the desired finished I.D.

FRACTIONAL SIZES

Min. Fin. ID	Length	Part No.	Min. Fin. ID	Length	Part No.
.310 (7.87)	3.13 (79.5)	KL1927STA	.313 (7.95)	3.13 (79.5)	KL1840STA
.3425 (8.70) BORED HOLE MAXIMUM ID					
Min. Fin. ID	Length	Part No.	Min. Fin. ID	Length	Part No.
.339 (8.61)	2.50 (63.5)	KL1961STA	.343 (8.71)	3.13 (79.5)	KL1841STA
.341 (8.66)	2.50 (63.5)	KL1983STA	.344 (8.74)	2.50 (63.5)	KL1921STA
.342 (8.69)	2.50 (63.5)	KL1932STA			
.3735 (9.49) BORED HOLE MAXIMUM ID					
Min. Fin. ID	Length	Part No.	Min. Fin. ID	Length	Part No.
.370 (9.40)	3.13 (79.5)	KL1902STA	.374 (9.50)	3.13 (79.5)	KL1842STA
.373 (9.47)	3.13 (79.5)	KL1992STA	.375 (9.53)	2.50 (63.5)	KL1975STA
.374 (9.50)	2.50 (63.5)	KL1974STA			
.4055 (10.30) BORED HOLE MAXIMUM ID					

*Highlighted part # designates universal length.

MILLIMETER SIZES

Min. Fin. ID	Length	Part No.		Min. Fin. ID	Length	Part No.
.197 (5.00)	1.63 (41.3)	KL1858STA				
.2125 (5.40) BORED HOLE MAXIMUM ID						
Min. Fin. ID	Length	Part No.		Min. Fin. ID	Length	Part No.
.216 (5.49)	2.25 (57.2)	KL1857STA		.217 (5.51)	2.50 (63.5)	KL1900STA
.2485 (6.31) BORED HOLE MAXIMUM ID						
Min. Fin. ID	Length	Part No.		Min. Fin. ID	Length	Part No.
.238 (6.05)	2.25 (57.2)	KL1906STA		.236 (6.00)	2.25 (57.2)	KL1856STA
.2675 (6.79) BORED HOLE MAXIMUM ID						
Min. Fin. ID	Length	Part No.				
.260 (6.60)	2.50 (63.5)	KL1849STA				
.2915 (7.40) BORED HOLE MAXIMUM ID						
Min. Fin. ID	Length	Part No.		Min. Fin. ID	Length	Part No.
.273 (6.93)	2.50 (63.5)	KL1904STA		.277 (7.03)	2.50 (63.5)	KL1850STA
.275 (6.98)	3.00 (76.2)	KL19100STA		.278 (7.06)	1.81 (46.0)	KL1903STA
.276 (7.01)	2.75 (69.9)	KL19107STA		.279 (7.09)	2.50 (63.5)	KL1909STA
.3095 (7.86) BORED HOLE MAXIMUM ID						
Min. Fin. ID	Length	Part No.		Min. Fin. ID	Length	Part No.
.312 (7.92)	2.50 (63.5)	KL1944STA		.316 (8.03)	2.50 (63.5)	KL1851STA
.313 (7.95)	2.50 (63.5)	KL1933STA		.317 (8.05)	2.50 (63.5)	KL1940STA
.313 (7.95)	3.00 (76.2)	KL1937STA		.317 (8.05)	3.13 (79.5)	KL19101STA
.314 (7.98)	2.50 (63.5)	KL1997STA		.318 (8.08)	2.50 (63.5)	KL1942STA
.315 (8.00)	2.50 (63.5)	KL1939STA		.318 (8.08)	2.75 (69.9)	KL1967STA
.315 (8.00)	3.15 (80.0)	KL1968STA				
.3475 (8.83) BORED HOLE MAXIMUM ID						

BRONZE
BULLET

BRONZE BULLET® SMOOTH WALL VALVE GUIDE-LINERS®

BORED HOLE TOLERANCES

MILLIMETER			
5mm	.212 (5.37)	–	.2125 (5.395)
5.5mm	.247 (6.27)	–	.2485 (6.312)
6mm	.266 (6.76)	–	.2675 (6.795)
6.6mm	.290 (7.37)	–	.2915 (7.404)
7mm	.308 (7.82)	–	.3095 (7.861)
8mm	.346 (8.79)	–	.3475 (8.827)
8.5mm	.367 (9.32)	–	.3685 (9.360)
9mm	.385 (9.78)	–	.3865 (9.817)
10mm	.424 (10.77)	–	.4255 (10.81)
11mm	.466 (11.84)	–	.4675 (11.87)

**K-Line®, Bronze Bullet®, Interrupted Spiral®,
Guide-Liner®, and Bron-EL®**
are registered trademarks of K-Line® Industries, Inc.



BRONZE BULLET® GUIDE-LINER® KITS



RX STANDARD GUIDE-LINER® AIR INSTALLATION KITS

These tool kits are designed for the smaller to mid-sized shop, answering the need for a more economical tooling kit package. Each kit features a Carbide Boring Reamer with accessories, packaged in a plastic storage box with step-by-step instructions.

These kits are designed to be used with KL9907 Seat Bushing Kit.



	Step 1		Step 2		Step 3				Step 4
Guide Size Kit No.	Boring Reamer	Reamer Bushing	Guide Brush	Auto Installer	Ball Broaches				Trim Tool
5/16" KL1600RX	KL1719C-9	KL9932	KL1036	KL9961	KL5844/.312	KL5845/.313	KL5846/.314	KL1787	
11/32" KL1601RX	KL1725C-9	KL9934	KL1036	KL9962	KL5857/.3435	KL5858/.3445	KL5859/.3455	KL1797	
3/8" KL1602RX	KL1735C-9	KL9936	KL1036	KL9963	KL5872/.374	KL5873/.375	KL5874/.376	KL1807	
5.5mm KL1614RX	*KL3561CC	KL9922	KL1036	KL9958	KL5808/.217	KL5809/.2175	KL5810/.218	KL5811/.2185	KL3184
6mm KL1612RX	KL3566C-9	KL9929	KL1036	KL9971	KL5815/.237	KL5816/.2375	KL5817/.238	KL5818/.2385	KL3185
7mm KL1607RX	KL3576C-9	KL9931	KL1036	KL9973	KL5835/.276	KL5836/.277	KL5837/.278	KL5838/.279	KL1897
8mm KL1608RX	KL3581C-9	KL9933	KL1036	KL9968	KL5847/.315	KL5848/.316	KL5849/.317	KL1787	

VALVE SEAT BUSHING KITS

* Guide Pro® Solid Carbide Boring Reamer.

These kits offers sizes to fit most valve seats. Bushings easily disconnect from fixture head for quick size changes. Kits come in a sturdy, padded plastic storage case.



KL9907 (7 Pc. Kit)

Part No.	
KL9911	 1"
KL9912	 1-3/16"
KL9913	 1-3/8"
KL9915	 1-5/8"
KL9916	 1-3/4"
KL9918	 2"
KL9919	 2-1/4"

These kits are designed to be used with the RX or NX Guide-Liner® Air Installation Kits

BRONZE BULLET® GUIDE-LINER® KITS



NX DELUXE GUIDE-LINER® AIR INSTALLATION KITS

Complete kit designed for use with KL9900, featuring the Black Beauty® Carbide Boring Reamer and deluxe tooling. Packaged in a plastic storage box, complete with step-by-step instructions.



These kits are designed to be used with KL9907 Seat Bushing Kit.

Step 1		Step 2		Step 3	Step 4		Step 5			Guide Size Kit No.
Boring Reamer	Reamer Bushing	Go-No-Go Gage	Guide Brush	Auto Installer	Ball Broaches	Guide-Top Cutter	Cutter Pilot	Flex Hone	Removal Tool	
KL1725CB-9	KL9934	KL2501	KL1036	KL9962	KL5857/.3435 KL5858/.3445 KL5859/.3455	KL4235	KL4239	KL2428	KL5681	11/32" KL1601NX
KL1735CB-9	KL9936	KL2502	KL1036	KL9963	KL5872/.374 KL5873/.375 KL5874/.376	KL4235	KL4240	KL2419	KL5682	3/8" KL1602NX
*KL3561CC	KL9922	KL2498	KL1036	KL9958	KL5808/.217 KL5809/.2175 KL5810/.218 KL5811/.2185	KL4233	KL4246	KL2424	KL5678	5.5mm KL1614NX
KL3566CB-9	KL9929	KL2499	KL1036	KL9971	KL5815/.237 KL5816/.2375 KL5817/.238 KL5818/.2385	KL4233	KL4245	KL2423	KL5679	6mm KL1612NX
KL3576CB-9	KL9931	KL2505	KL1036	KL9973	KL5835/.276 KL5836/.277 KL5837/.278 KL5838/.279	KL4233	KL4243	KL2426	KL5685	7mm KL1607NX
KL3581CB-9	KL9933	KL2506	KL1036	KL9968	KL5847/.315 KL5848/.316 KL5849/.317	KL4235	KL4238	KL2427	KL5686	8mm KL1608NX

* Guide Pro® Solid Carbide Boring Reamer.

Steps **1, 4 & 5** use Drill - 2100 RPM. Steps **2 & 3** use Air Hammer - 4,500 blows/min.

Step 3 recommended purchase (KL5758, KL5759) Ball Broach Driver.

STEP 1

BORE



BLACK BEAUTY® CARBIDE BORING TOOLS FOR CAST IRON GUIDES

The Ultimate Boring Tool for Precision and Extra Long Life

- Hardness - Rockwell C hardness of 93-95 allows faster operating speeds with extended tool life - even in hardened guides.
- Unique molecular structure resists galling or chip build up, resulting in reduced tool temperature.
- Lubricity - The lubricious surface aids in maintaining a lower temperature and efficient chip removal.
- Low temperature application process eliminates the possibility of tool warpage or annealing.
- Precision - Each reamer is carefully crafted to a .0002 tolerance or less. Hole sizing is true and consistent.

Replacement Boring Tools for NX Series Guide-Liner® Kits

Part No.	Size	Use With
KL1725CB-9	.343 - .030	11/32" Guide-Liners®
KL1735CB-9	.375 - .030	3/8" Guide-Liners®
KL3566CB-9	.236 - .030	6.0mm Guide-Liners®
KL3576CB-9	.275 - .030	7mm Guide-Liners®
KL3581CB-9	.315 - .030	8mm Guide-Liners®

Black Beauty® is a registered trademark of 9" Overall Length
K-Line® Industries, Inc.

STANDARD CARBIDE BORING TOOLS FOR CAST IRON GUIDES

Replacement Boring Tools for RX Series Guide-Liner® Kits



Part No.	Size	Use With
KL1719C-9	.312 - .030	5/16" Guide-Liners®
KL1725C-9	.343 - .030	11/32" Guide-Liners®
KL1735C-9	.375 - .030	3/8" Guide-Liners®
KL3566C-9	.236 - .030	6mm Guide-Liners®
KL3576C-9	.275 - .030	7mm Guide-Liners®
KL3581C-9	.315 - .030	8mm Guide-Liners®

9" Overall Length

BLACK BEAUTY® CARBIDE BORING TOOLS FOR BRONZE GUIDES

Specifically designed to bore Manganese Bronze, Aluminum Bronze and Silicon Aluminum Bronze prior to Guide-Liner® installation.

Part No.	Size
KL3561CSP	5.5mm - 30
KL3566CSP	6mm - 30
KL3576CSP	7mm - 30

9" Overall Length

REAMER BUSHINGS

Replacement Reamer Bushings for NX/RX Series Guide-Liner® Kits



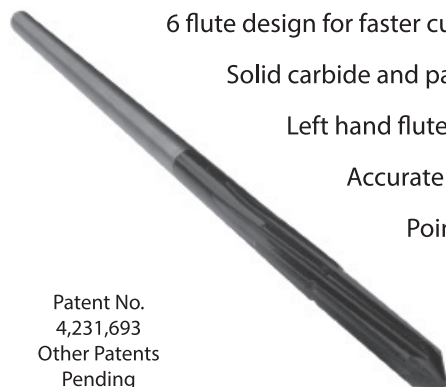
Part No.	Size
KL9932	5/16"
KL9934	11/32"
KL9936	3/8"

Part No.	Size
KL9922	5.5mm
KL9929	6mm

Part No.	Size
KL9931	7mm
KL9933	8mm

STEP 1 BORE

GUIDE PRO® SOLID CARBIDE BLACK BEAUTY® BORING TOOLS



6 flute design for faster cutting action

Solid carbide and patented Black Beauty® process provide increased longevity

Left hand flutes send chips down out of the way for size consistency

Accurately bores in most types of valve guide materials

Pointed pilot for faster hole location

Patented tool design provides a smoother finish

Patent No.
4,231,693
Other Patents
Pending

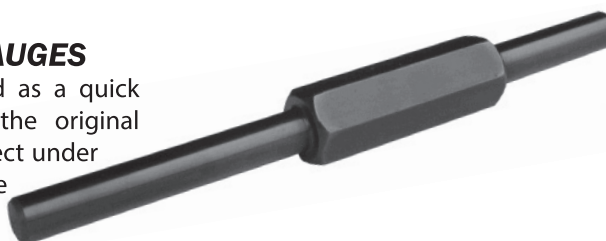
An exclusive line of Guide-Liner® boring tools designed to cut faster, straighter holes. Coupled with our patented Black Beauty® process and patented cutting geometric design, these solid carbide reamers provide a smoother finish. Life expectancy is considerably greater than standard brazed carbide boring tools.

Part No.	Size	Use With
KL3556CC	.197 - .030	5mm
KL3561CC	.216 - .030	5.5mm
KL3566CC	.236 - .030	6mm
KL3576CC	.275 - .030	7mm
KL3581CC	.315 - .030	8mm

Part No.	Size	Use With
KL1725CC	.343 - .030	11/32"
KL1735CC	.375 - .030	3/8"

Go-No-Go GAUGES

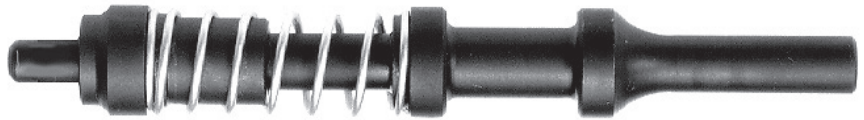
Designed to be used as a quick check after boring the original valve guide. Will detect under or over sizing of the valve guide before installation of the Guide-Liner®. Will also help the machinist know when the boring tool is approaching dull stage and needs to be sharpened or replaced.



Part No.	Size
KL2501	11/32"
KL2502	3/8"

Part No.	Size
KL2498	5.5mm
KL2499	6mm
KL2505	7mm
KL2506	8mm

STEP 2 INSTALL



BRONZE BULLET® AUTO INSTALLER **#1 Rated Installation Tool**

This universal tool features a Guide-Liner® holder incorporated into the driver assembly, making installation quick and effortless. Attach the Auto-Installer to the H.D. Air Hammer, insert the Bronze Bullet® liner into the holder assembly, position the driver pilot and Bronze Bullet® liner into the bored hole and drive the Bronze Bullet® liner into the hole until the driver shoulder reaches the guide boss. The Auto-Installer eliminates the need for a separate holder and driver and can cut installation time in half.

U.S. Patent No. 5,355,572

Part No.	Size
KL9961	5/16"
KL9962	11/32"
KL9963	3/8"
KL9968	8mm

SMALL DIAMETER BRONZE BULLET® AUTO INSTALLER

This line of metric auto installers features a reduced diameter Guide-Liner® holder for improved access to the valve guide in modern aluminum cylinder heads with small diameter valve bowls or overhead cam towers.

U.S. Patent No. 5,355,572

Part No.	Size
KL9958	5.5mm
KL9971	6mm
KL9973	7mm



BRONZE LUBE

For Knurling and Reaming

This oil is specially formulated for guide knurling and finish reaming. Reamer and arbor life will be extended if the proper amount and type of oil is used. Bronze Lube should be used on bronze Guide-Liners®, but can also be used on cast iron guides.

KL1224 Pint



STEP 3 SIZE



HARD CHROME PLATED BALL BROACHES

A simple, fast method for sizing the inside diameter of Bronze Guide-Liners®. Made of high quality tool steel, hard chrome plated, with a special ground double ball configuration that quickly sizes the inside diameter and eliminates reaming or honing. Use with KL5758 or KL5759 Broach Holder/Driver shown below with Air Hammer.

U.S. Patent No. 4,573,346. Canadian Patent No. 1,219,742.

	Part No.	Ball Size
5/16"	KL5842	.310 (7.87)
	KL5843	.311 (7.90)
	KL5844	.312 (7.92)
	KL5845	.313 (7.95)
	KL5846	.314 (7.98)
11/32"	KL5857	.3435 (8.725)
	KL5858	.3445 (8.750)
	KL5859	.3455 (8.776)
	KL5860	.3465 (8.801)
3/8"	KL5872	.374 (9.50)
	KL5873	.375 (9.53)
	KL5874	.376 (9.55)
	KL5890	.377 (9.58)

	Part No.	Ball Size
5.5mm	KL5808	.217 (5.51)
	KL5809	.2175 (5.525)
	KL5810	.218 (5.54)
	KL5811	.2185 (5.550)
	KL5814	.236 (6.00)
6mm	KL5815	.237 (6.02)
	KL5816	.2375 (6.033)
	KL5817	.238 (6.05)
	KL5818	.2385 (6.058)
	KL5820	.2395 (6.083)

	Part No.	Ball Size
7mm	KL5833	.274 (6.96)
	KL5835	.276 (7.01)
	KL5836	.277 (7.04)
	KL5837	.278 (7.06)
	KL5838	.279 (7.09)
8mm	KL5847	.315 (8.00)
	KL5848	.316 (8.03)
	KL5849	.317 (8.05)
	KL5850	.318 (8.08)
	KL5851	.319 (8.10)

IMPORTANT: to obtain the recommended finished guide I.D., a slightly larger ball broach will be required (due to material flow-back that occurs during this sizing operation) typically, .001" (.025mm) to .0015" (.038mm) larger than the desired finished I.D.

AIR HAMMER BALL BROACH HOLDER/DRIVER



Part No.	Description
KL5758	For Ball Broaches 5mm - 8mm
KL5759	For Ball Broaches 11/32" - 11mm
KL5759B	Replacement Bumper

STEP 4 TRIM

KL4235 GUIDE-TOP CUTTER



Designed to be used when cutting excess Guide-Liners®. It has replaceable carbide blades, which are fastened on with screws. Uses standard K-Line® guide-top cutter pilots.

KL4236 Replacement Carbide Blade (2 required)

KL4237 Replacement Holding Screw

Cutter Pilots

Part No.	Cutters
KL4238	5/16" - 8mm
KL4239	11/32"
KL4240	3/8"

The tool shank is 5/8" in diameter x 4" long and the reversible carbide blade is .720 in diameter.

KL4233 SMALL DIAMETER DELUXE GUIDE-TOP CUTTER



Reversible Carbide Blade

This deluxe cutter is ideal for cutting excess Guide-Liner® material from valve guide bosses in limited clearance areas found on small port cylinder heads. Pilots are interchangeable with the larger KL4235A Deluxe Guide-Top Cutter.

Cutter Pilots

Part No.	Cutters
KL4246	5.5mm
KL4245	6mm
KL4243	7mm

The tool shank is 3/8" in diameter x 3¾" long and the reversible carbide blade can cut up to a 7/16" diameter guide boss.

KL4234 Replacement Carbide Blade

GUIDE-LINER® TRIMMING TOOL

For manually trimming off excess Guide-Liner® material after installation.

Part No.	Size
KL1787	5/16"
KL1797	11/32"
KL1807	3/8"
KL3184	5.5mm
KL3185	6mm
KL1897	7mm
KL1787	8mm



STEP 5 (OPTIONAL)

FLEX-HONE®

VALVE GUIDE FLEX-HONES®

Ideal for Precision, Final Fitting of Valves to Guide-Liners®

Use with power drill or guide and seat machine. Simply run the closest size FLEX-HONE® through the guide. Works with all guide materials: cast iron, bronze, Bron-EL® and silicon aluminum-bronze. Recommended for one pass final finish on Bronze Guide-Liners.

NOTE: After flex honing, proper guide cleaning is required.

Recommended for use with KL3808 2100 RPM Air Drill to activate approximately 20-23 Ra in Bronze Guide-Liners®.



Part No.	Size	Grit
KL2424	5.5mm	240
KL2423	6mm	240
KL2426	7mm	240
KL2427	5/16" (8mm)	240
KL2428	11/32" (9mm)	240
KL2419	3/8"	240

GUIDE-LINER® REMOVAL TOOL

#1 Rated Removal Tool



Easily removes old Guide-Liners® without disrupting original guide bore. Pilot aligns tool as you drive it through the guide. KL5758 Air Hammer Ball Broach Holder/Driver (page 16) required with removal tool when using pneumatic hammer to remove the Guide-Liner®

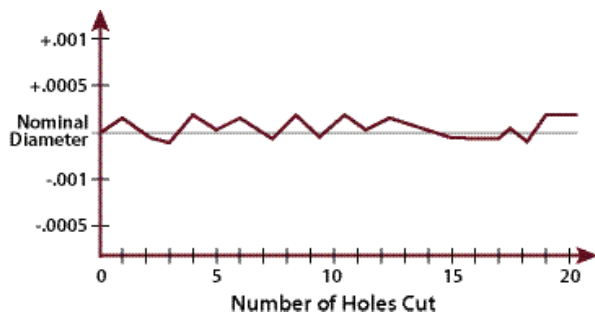
Part No.	Guide-Liner® Size
KL5680	5/16"
KL5681	11/32"
KL5682	3/8"
KL5678	5.5mm
KL5679	6mm
KL5685	7mm
KL5686	8mm

BRONZE VALVE GUIDE FINISH REAMERS

- Whether you are reaming Manganese Bronze, Aluminum Bronze or Silicon Aluminum Bronze, you can count on cutting more holes per reamer.
- Specially fluted, heat-treated and ground to give you improved cutting geometry.
- A new pointed pilot allows for easier insertion into guide and better chip removal
- You can count on getting longer life and greater consistency from hole to hole.
- K-Line's Bronze Valve Guide Finish Reamers produce a smooth on-size I.D. while they resist galling.

Patent Numbers 4,231,693 and 5,921,728

***“K-Line Bronze Guide Reamers:
quick, accurate, long-lasting.”***



Part No.	Size
KL1185NB	.2165 (5.5mm)
KL1110NB	.236 (6mm)
KL1173NB	.260 (6.6mm)
KL1111NB	.2755 (7mm)
KL1117NB	.311 (7.90)
KL1118NB	.312 (5/16")
KL1176NB	.313 (7.95)
KL1177NB	.314 (7.98)
KL1112NB	.315 (8mm)
KL1174NB	.316 (8.03)
KL1120NB	.342 (8.69)
KL1121NB	.343 (8.71)
KL1122NB	.344 (11/32")
KL1123NB	.345 (8.76)
KL1113NB	.3543 (9mm)
KL1127NB	.374 (9.50)
KL1128NB	.375 (3/8")
KL1193NB	.377 (9.58)

All sizes listed are in stock for immediate delivery. **Special reamer sizes also available.** Specials must be within .003 smaller than standard listed reamer. Charge for these is determined from the cost of larger standard size. **Additional grinding charge is added for H.S. Steel and Bronze Reamers.**

H.S.S. FINISH REAMERS FOR CAST IRON VALVE GUIDES



High quality reamers crafted from the finest tools steel and tempered for long life. Reamers are piloted for self-centering action. Spiral flutes give a smooth, even cut. A new pointed pilot allows for easier insertion into guide and better chip removal. With proper care, they will accurately size thousands of guides.

Part No.	Size
KL1060	.197 (5.00)
KL1062	.215 (5.46)
KL1185	.2165 (5.50)
KL1063	.217 (5.51)
KL1216	.235 (5.97)
KL1110	.2362 (6.00)
KL1217	.237 (6.02)
KL1173	.260 (6.60)
KL1111	.2756 (7.00)
KL1214	.276 (7.01)
KL1148	.277 (7.03)
KL1117	.311 (7.90)
KL1118	.312 (5/16")
KL1176	.313 (7.95)

All sizes listed are in stock for immediate delivery. **Special reamer sizes also available.** Specials must be within .003 smaller than standard listed reamer. Charge for these is determined from the cost of larger standard size. **Additional grinding charge is added for H.S. Steel and Bronze Reamers.**

Part No.	Size
KL1177	.314 (7.97)
KL1112	.315 (8.00)
KL1174	.316 (8.03)
KL1120	.342 (8.69)
KL1121	.343 (8.71)
KL1180	.3435 (11/32")
KL1122	.344 (8.74)
KL1123	.345 (8.76)
KL1113	.3542 (9.00)

Part No.	Size
KL1126	.373 (9.47)
KL1127	.374 (9.50)
KL1128	.375 (3/8")
KL1193	.377 (9.58)

ALPHABETICAL INDEX

A

Air Hammer Ball Broach Holder/Driver 11

B

Ball Broaches 11
 BLACK BEAUTY
 Carbide Boring Tools 8, 9
 Boring Bushing Kits 6
 BORING STAND
 Boring Tools 8, 9
 Bronze Bullet® Auto Installers 10
 BRONZE BULLET® GUIDE-LINER® KITS
 NX Deluxe Air Installation Kits 7
 RX Standard Air Installation Kits 6
 BRONZE BULLET® GUIDE-LINERS®
 5-step installation procedure 3
 Bored Hole Tolerances 5
 Instructional Video 3
 Interrupted Spiral 4, 5
 Fractional Sizes 4
 Millimeter Sizes 4, 5
 Smooth Wall 5
 Fractional Sizes 5
 Millimeter Sizes 5
 Bronze Lube 10
 Bronze Valve Guide Finish Reamers 15

C

Carbide Boring Tools 8, 9
 CUTTERS
 Guide-Top 12

D

DRIVERS
 Air Hammer Ball Broach Driver 11

F

FINISH REAMERS
 Bronze Valve Guide 14
 H.S.S. Cast Iron 15
 Flex-Hones® 13

G

GAUGES
 Go-No-Go 9
 GUIDE-LINER®
 Guide-Liners® 4, 5
 Guide-Top Cutters 13
 Installation Kits 6, 7
 Removal Tool 14
 Trimming Tool 12
 Guide Pro® Boring Tools 9

H

High-Speed Steel Guide Reamers 15

L

LUBRICANTS
 Bronze Lube 10

O

Oil - Bronze & Arbor 10

R

Reamer Bushings 8
 Reamer Oil 10
 Reamer RPM Chart by Type and Size 20, 21
 REAMERS
 Boring 8, 9
 Bronze Valve Guide 14
 H.S.S. Valve Guide (Cast Iron) 15

T

TOOL KITS
 Bronze Bullet® Guide-Liner® 6-7

V

VALVE GUIDE
 Boring Bushing Kits 6
 Cutters 12
 Flex-Hones® 5

V

(Continued)

VALVE GUIDE
 Reamers 14, 15
 Valve Guide-Liner® Kits 6, 7
 Valve Guide-Liners® 4, 5
 VALVE SEAT
 Bushing Kits 6
 VIDEOS
 Bronze Bullet® Guide-Liner® Installation 3

NUMERICAL PAGE INDEX

KL1036	6, 7	KL1216	17	KL1932STA	4	KL4230	12
KL1060	15	KL1217	17	KL1933STA	4	KL4230A	12
KL1062	15	KL1224	10	KL1937STA	4	KL4233	12
KL1063	15	KL1600NX	7	KL1939STA	4	KL4234	12
KL1110	15	KL1600RX	6	KL1940STA	4	KL4235	12
KL1110NB	16	KL1601NX	7	KL1942STA	4	KL4236	12
KL1111	15	KL1601RX	6	KL1944STA	4	KL4237	12
KL1111NB	16	KL1602NX	7	KL1961STA	4	KL4238	12
KL1112	15	KL1602RX	6	KL1967STA	4	KL4239	12
KL1112NB	16	KL1607NX	7	KL1968STA	4	KL4240	12
KL1113	15	KL1607RX	6	KL1974STA	4	KL4243	12
KL1113NB	16	KL1608NX	7	KL1975STA	4	KL4245	12
KL1117	15	KL1608RX	6	KL1983STA	4	KL4246	12
KL1117NB	16	KL1719C-9	6, 8	KL1992STA	4	KL4247	12
KL1118	15	KL1725C-9	6, 8	KL1997STA	4	KL5678	7, 13
KL1118NB	16	KL1725CB-9	7, 8	KL2419	7, 13	KL5679	7, 13
KL1120	17	KL1725CC	9	KL2424	7, 13	KL5680	7, 13
KL1120NB	16	KL1735C-9	6, 8	KL2426	7, 13	KL5681	7, 13
KL1121	17	KL1735CB-9	7, 8	KL2427	7, 13	KL5682	7, 13
KL1121NB	16	KL1735CC	9	KL2428	7, 13	KL5685	7, 13
KL1122	17	KL1749CB-9	7, 8	KL2498	7, 9	KL5686	7, 13
KL1122NB	16	KL1787	6, 12	KL2499	7, 9	KL5758	11
KL1123	17	KL1797	6, 12	KL2501	7, 9	KL5759	11
KL1123NB	16	KL1807	6, 12	KL2502	7, 9	KL5759B	11
KL1125	17	KL1840STA	4	KL2505	7, 10	KL5808	6, 7, 11
KL1126	17	KL1841A	5	KL2506	7, 10	KL5809	6, 7, 11
KL1127	17	KL1841STA	4	KL3184	6, 12	KL5810	6, 7, 11
KL1127NB	16	KL1842A	5	KL3185	6, 12	KL5811	6, 7, 11
KL1128	17	KL1842STA	4	KL3519CSP	8	KL5814	11
KL1128NB	16	KL1849STA	4	KL3525CSP	8	KL5815	6, 7, 11
KL1148	17	KL1850STA	4	KL3535CSP	8	KL5816	6, 7, 11
KL1173	17	KL1851STA	4	KL3556CC	6, 7, 9	KL5817	6, 7, 11
KL1173NB	16	KL1852STA	4	KL3561CC	6, 7, 9	KL5818	6, 7, 11
KL1174	17	KL1856STA	4	KL3561CSP	8	KL5820	11
KL1174NB	16	KL1857STA	4	KL3566C-9	6, 8	KL5833	11
KL1176	17	KL1858STA	4	KL3566CB-9	7, 8	KL5835	6, 7, 11
KL1176NB	16	KL1897	6, 12	KL3566CC	9	KL5836	6, 7, 11
KL1177NB	16	KL1900STA	4	KL3566CSP	8	KL5837	6, 7, 11
KL1180	17	KL1902STA	4	KL3571CSP	8	KL5838	6, 7, 11
KL1181	17	KL1903STA	4	KL3576C-9	6, 8	KL5842	11
KL1182	17	KL1904STA	4	KL3576CB-9	7, 8	KL5843	11
KL1185	17	KL1905STA	4	KL3576CC	9	KL5844	6, 7, 11
KL1185NB	16	KL1906STA	4	KL3576CSP	8	KL5845	6, 7, 11
KL1188	17	KL1909STA	4	KL3581C-9	6, 8	KL5846	6, 7, 11
KL1190	17	KL1920STA	5	KL3581CB-9	7, 8	KL5847	6, 7, 11
KL1193	17	KL1921STA	4	KL3581CC	9	KL5848	6, 7, 11
KL1193NB	16	KL1925STA	5	KL3581CSP	8	KL5849	6, 7, 11
KL1214	17	KL1927STA	4	KL3586CSP	8	KL5850	11

NUMERICAL PAGE INDEX

KL5851	11
KL5857	6, 7, 11
KL5858	6, 7, 11
KL5859	6, 7, 11
KL5860	11
KL5869	11
KL5872	6, 7, 11
KL5873	6, 7, 11
KL5874	6, 7, 11
KL9907	6
KL9911	6
KL9912	6
KL9913	6
KL9914	6
KL9915	6
KL9916	6
KL9917	6
KL9918	6
KL9919	6
KL9922	6, 7, 8
KL9929	6, 7, 8
KL9931	6, 7, 8
KL9932	6, 7, 8
KL9933	6, 7, 8
KL9934	6, 7, 8
KL9936	6, 7, 8
KL9958	6, 7, 10
KL9961	6, 7, 10
KL9962	6, 7, 10
KL9963	6, 7, 10
KL9968	6, 7, 10
KL9971	6, 7, 10
KL9973	6, 7, 10
KL19100STA	4
KL19101STA	4
KL19107STA	4

MANUFACTURER TRADEMARKS

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K-LINE® REAMER RPM BY TYPE AND SIZE

K-LINE REAMER #	NOMINAL	SIZE	RPM RANGE
BLACK BEAUTY® CARBIDE BORING REAMERS FOR CAST IRON GUIDES			
KL1719CB-9	5/16"	.312 - .030	1,600-2,000
KL1725CB-9	11/32"	.343 - .030	1,400-1,800
KL1735CB-9	3/8"	.375 - .030	1,300-1,700
KL3566CB-9	6.00mm	.236 - .030	2,300-2,700
KL3571CB-9	6.60mm	.260 - .030	2,000-2,400
KL3576CB-9	7.00mm	.275 - .030	1,900-2,300
KL3581CB-9	8.00mm	.315 - .030	1,600-2,000
KL3586CB-9	9.00mm	.354 - .030	1,400-1,800
KL3591CB-9	10.0mm	.394 - .030	1,200-1,600
KL1749CB-9	11.0mm	.437 - .030	1,000-1,400
STANDARD CARBIDE BORING REAMERS FOR CAST IRON GUIDES			
KL1719C-9	5/16"	.312 - .030	1,600-2,000
KL1725C-9	11/32"	.343 - .030	1,400-1,800
KL1735C-9	3/8"	.375 - .030	1,300-1,700
KL3566C-9	6.00mm	.236 - .030	2,300-2,700
KL3571C-9	6.60mm	.260 - .030	2,000-2,400
KL3576C-9	7.00mm	.275 - .030	1,900-2,300
KL3581C-9	8.00mm	.315 - .030	1,600-2,000
KL3586C-9	9.00mm	.354 - .030	1,400-1,800
BLACK BEAUTY® CARBIDE BORING REAMERS FOR BRONZE GUIDES			
KL3519CSP	5/16"	.312 - .030	1,600-2,000
KL3525CSP	11/32"	.343 - .030	1,400-1,800
KL3535CSP	3/8"	.375 - .030	1,300-1,700
KL3561CSP	5.50mm	.216 - .030	2,500-2,900
KL3566CSP	6.00mm	.236 - .030	2,300-2,700
KL3571CSP	6.60mm	.260 - .030	2,000-2,400
KL3576CSP	7.00mm	.275 - .030	1,900-2,300
KL3581CSP	8.00mm	.315 - .030	1,600-2,000
KL3586CSP	9.00mm	.354 - .030	1,400-1,800
GUIDE PRO® SOLID CARBIDE BLACK BEAUTY® BORING REAMERS FOR HARDENED POWDERED METAL GUIDES			
KL3556CC	5.00mm	.197 - .030	2,700-3,100
KL3561CC	5.50mm	.216 - .030	2,500-2,900
KL3566CC	6.00mm	.236 - .030	2,300-2,700
KL3576CC	7.00mm	.275 - .030	1,900-2,300
KL3581CC	8.00mm	.315 - .030	1,600-2,000
KL3586CC	9.00mm	.354 - .030	1,400-1,800
KL1719CC	5/16"	.312 - .030	1,600-2,000
KL1725CC	11/32"	.343 - .030	1,400-1,800
KL1735CC	3/8"	.375 - .030	1,300-1,700
BRONZE VALVE GUIDE FINISH REAMERS			
KL1185NB	5.50mm	0.2165	800-1200
KL1110NB	6.00mm	0.2360	750-1150
KL1173NB	6.60mm	0.2600	700-1100
KL1111NB	7.00mm	0.2755	700-1000
KL1116NB	7.87mm	0.3100	600-900
KL1117NB	7.90mm	0.3110	600-900
KL1118NB	5/16"	0.3120	600-900
KL1176NB	7.95mm	0.3130	600-900
KL1177NB	7.98mm	0.3140	600-900
KL1112NB	8.00mm	0.3150	600-900
KL1174NB	8.03mm	0.3160	600-900
KL1175NB	8.05mm	0.3170	600-900
KL1119NB	8.66mm	0.3410	500-800
KL1120NB	8.69mm	0.3420	500-800
KL1121NB	8.71mm	0.3430	500-800
KL1122NB	11/32"	0.3440	500-800
KL1123NB	8.76mm	0.3450	500-800
KL1113NB	9.00mm	0.3543	500-800
KL1124NB	9.42mm	0.3710	400-700
KL1125NB	9.45mm	0.3720	400-700
KL1126NB	9.47mm	0.3730	400-700
KL1127NB	9.50mm	0.3740	400-700
KL1128NB	3/8"	0.3750	400-700
KL1193NB	9.58mm	0.3770	400-700
KL1182NB	9.60mm	0.3780	400-700

K-LINE® REAMER RPM BY TYPE AND SIZE

K-LINE REAMER #	NOMINAL	SIZE	RPM RANGE
HIGH-SPEED STEEL FINISH REAMERS FOR CAST IRON GUIDES			
KL1060	5.00mm	0.1970	900-1300
KL1061	5.44mm	0.2140	800-1200
KL1062	5.46mm	0.2150	800-1200
KL1185	5.50mm	0.2165	800-1200
KL1063	5.51mm	0.2170	800-1200
KL1064	5.54mm	0.2180	800-1200
KL1199	5.94mm	0.2340	750-1150
KL1216	5.97mm	0.2350	750-1150
KL1110	6.00mm	0.2362	750-1150
KL1217	6.02mm	0.2370	750-1150
KL1218	6.05mm	0.2380	750-1150
KL1115	1/4"	0.2500	700-1100
KL1207	6.55mm	0.2580	700-1100
KL1208	6.58mm	0.2590	700-1100
KL1173	6.60mm	0.2600	700-1100
KL1157	6.96mm	0.2740	700-1000
KL1111	7.00mm	0.2756	700-1000
KL1214	7.01mm	0.2760	700-1000
KL1148	7.03mm	0.2770	700-1000
KL1187	9/32"	0.2810	700-1000
KL1116	7.87mm	0.3100	600-900
KL1117	7.90mm	0.3110	600-900
KL1118	5/16"	0.3120	600-900
KL1176	7.95mm	0.3130	600-900
KL1177	7.97mm	0.3140	600-900
KL1112	8.00mm	0.3150	600-900
KL1174	8.03mm	0.3160	600-900
KL1175	8.05mm	0.3170	600-900
KL1178	8.08mm	0.3180	600-900
KL1188	8.31mm	0.3270	500-800
KL1210	8.64mm	0.3400	500-800
KL1119	8.66mm	0.3410	500-800
KL1120	8.69mm	0.3420	500-800
KL1121	8.71mm	0.3430	500-800
KL1180	11/32"	0.3435	500-800
KL1122	8.74mm	0.3440	500-800
KL1123	8.76mm	0.3450	500-800
KL1136	8.79mm	0.3460	500-800
KL1181	8.81mm	0.3470	500-800
KL1190	8.97mm	0.3530	500-800
KL1113	9.00mm	0.3542	500-800
KL1191	9.02mm	0.3550	500-800
KL1192	9.04mm	0.3560	500-800
KL1215	9.06mm	0.3570	500-800
KL1138	9.09mm	0.3580	500-800
KL1125	9.45mm	0.3720	450-750
KL1126	9.47mm	0.3730	450-750
KL1127	9.50mm	0.3740	450-750
KL1128	3/8"	0.3750	450-750
KL1139	9.55mm	0.3760	450-750
KL1193	9.58mm	0.3770	450-750
KL1182	9.60mm	0.3780	450-750
KL1209	9.63mm	0.3790	450-750
KL1194	9.65mm	0.3800	450-750
KL1213	9.68mm	0.3810	450-750
KL1196	9.86mm	0.3880	450-700
KL1197	25/64"	0.3900	450-700
KL1205	9.98mm	0.3930	450-700
KL1114	10.0mm	0.3937	450-700



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