



KB PISTONS

Installation Instructions For Hypereutectic Pistons

CALCULATING TOP RING END GAP

Top Ring Example - Street
Naturally Aspirated 4.000" bore x
.0065" gap factor = .026" total top
ring end gap.

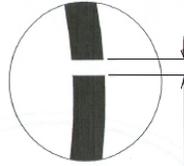
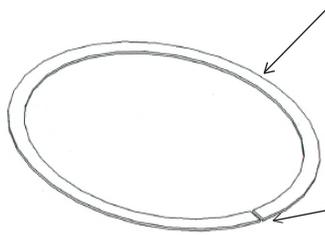
**Second Ring: Set second ring
end gap at .004 per inch of bore
minimum.**

TOP RING END
GAP FACTORS
FOR ALL APPLICA-
TIONS LOCATED
ON PAGE 2.

SPIRAL LOCKRING INSTALLATION

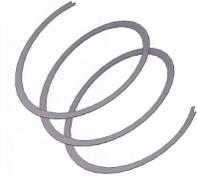
RETAINER COMES UNSPRUNG. WE
SUGGEST SPRINGING THE RETAINER
ABOUT 1/2" TO 3/4" TO MAKE INSTALA-
TION EASIER. DO NOT OVER SPRING
RETAINER. DO NOT USE LOCKS WHEN
PRESS FITTING THE PIN.

TOP COMPRESSION RING



RING END GAP

SPIRAL LOCKRING



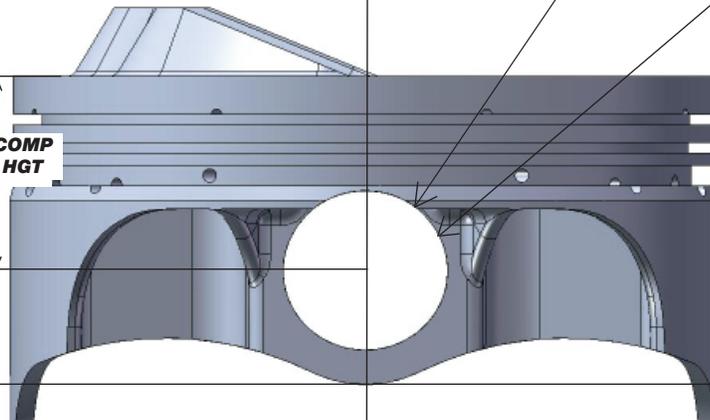
PISTON PIN C/L

TOP OF PISTON

COMPRESSION HEIGHT IS THE DISTANCE FROM
PIN CENTER LINE TO THE
TOP OF THE PISTON.
COMPRESSION HEIGHT
DOES NOT INCLUDE THE
DISH OR THE DOME.

COMP HGT

PISTON PIN C/L



LUBE PIN HOLE

1. USE HIGH QUALITY ASSEMBLY LUBE.
NEVER USE GREASE.
2. PRESS FIT, USE ROD HEATER.
3. DO NOT USE LOCKS WHEN
PRESS FITTING THE PIN.

DIAL POINT

MEASURE PISTON MAJOR
AXIS (DIAMETER) HERE

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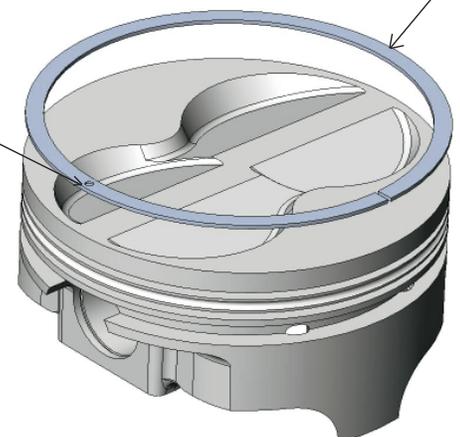
SPACER RING

THE SPACER RING SUPPORTS THE OIL
RAIL ON LONG ROD APPLICATIONS WHEN
THE WRIST PIN IS INTERSECTING THE OIL
GROOVE. THE SPACER RING SHOULD BE
LOCATED IN THE BOTTOM OF THE OIL
GROOVE. TO INSTALL, SPIRAL THE RING INTO
THE OIL GROOVE. TAKE CARE NOT TO
DISTORT OR BEND THE SPACER RING.

DIMPLE

DIMPLE SHOULD BE PLACED
OVER THE OPENING FORMED
BY THE PIN INTERSECTING
THE OIL GROOVE. THE
RAISED SECTION SHOULD BE
PLACED FACING DOWN.

SPACER RING



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General Clearance Guidelines

APPLICATION	Ring End Gap Factor	PISTON TO WALL CLEARANCE	
		4.000" - 4.100"	4.100" and up
STREET NATURALLY ASPIRATED	0.0065"	.0015" - .0020"	.0020" - .0025"
STREET TOWING	0.0080"	.0015" - .0020"	.0020" - .0025"
STREET NITROUS OR SUPERCHARGED	0.0080"	.0020" - .0025"	.0025" - .0035"
CIRCLE TRACK 2 BBL/RESTRICTOR GAS	0.0070"	.0015" - .0045"	.0020" - .0050"
CIRCLE TRACK UNRESTRICTED	0.0080"	.0025" - .0045"	.0030" - .0045"
CIRCLE TRACK ALCOHOL INJECTION	0.0080"	.0025" - .0045"	.0025" - .0050"
CIRCLE TRACK ALCOHOL CARB	0.0080"	.0030" - .0045"	.0030" - .0050"
DRAG GASOLINE	0.0075"	.0015" - .0045"	.0020" - .0045"
DRAG ALCOHOL	0.0065"	.0015" - .0045"	.0020" - .0045"
DRAG SUPERCHARGED OR NITROUS	0.0095"	.0020" - .0045"	.0025" - .0050"
DRAG SUPERCHARGED ALCOHOL	0.0085"	.0015" - .0045"	.0025" - .0045"
MARINE NATURALLY ASPIRATED	0.0080"	.0030" - .0045"	.0035" - .0050"
MARINE SUPERCHARGED	0.0090"	.0030" - .0045"	.0035" - .0050"
AIR COOLED BAJA	0.0075"	.0030" - .0045"	.0035" - .0050"
PROPANE	0.0065"	.0015" - .0045"	.0020" - .0045"

Modern piston design locates the top ring higher for improved performance. A high top ring operates at higher temperatures and requires a larger top ring end gap. To find the proper ring end gap, multiply your bore size by the ring end gap factor listed on the chart (i.e., Street Naturally Aspirated 4.000" bore x .0065" gap factor = .026" total top ring end gap).

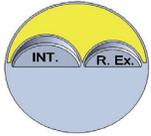
Your hypereutectic performance piston will expand less than typical cast or forged pistons. Because of this and the wear characteristics of the hypereutectic alloy, you can run tight piston-to-wall clearances.

NOTE: Hypereutectic piston engines will require 2-4 degrees less total ignition timing. One key to top performance is to have all cylinders longing for the same timing numbers. Equal air flow, fuel mix, quench, chamber temperature, swirl, and compression at each cylinder work to this end.

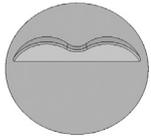
Final piston clearance should be based solely on the demands of your application.

Factors such as fuel type, altitude, outside temp., humidity, tune up, and many others factors need to be taken into account for your final clearance.

PISTON ORIENTATION



QUENCH AREA (YELLOW): Quench is the area behind the valves. This area should match the flat area on your cylinder head. Proper quench promotes cooling of the piston and can be effective in reducing detonation.

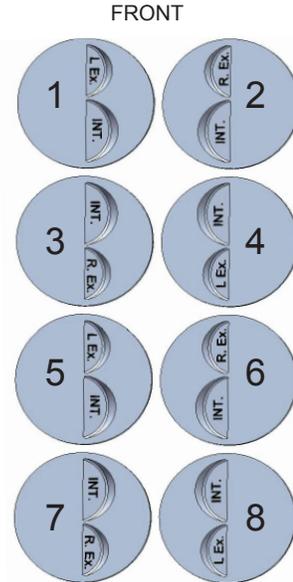
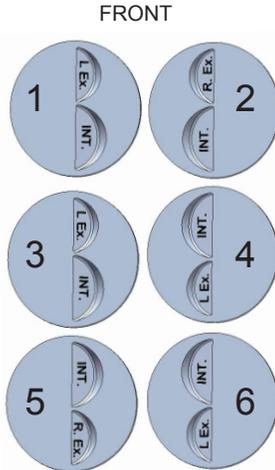


NOTE: Some pistons come with symmetrical valve reliefs. This allows the piston to be fitted to any cylinder with just orientating the quench area towards the center of the block.

CHECKING CYLINDER HEADS: Check cylinder heads with clay or some other method before balancing and final assembly to assure proper piston to head clearance. .040" minimum clearance.

CHEVY 302, 305, 327, 334, 350, 377, 383, 400, 434
CHRY 318, 340, 360, 383, 400, 408, 440, 450, 463, 468, 493, 498, 505, 520
BUICK 455
PONTIAC 389, 400, 428, 455

CHEVY V6 4.3L / 262 CI
4 LEFTS AND 2 RIGHTS



FORD 289, 302, 331, 347, 351W, 372W, 383W, 393W, 408W, 416W, 418W

FORD 390FE, 406FE, 410FE, 427FE, 428FE, 438FE, 452FE, 455FE, 482FE

FORD CLEV 351C&W/C, 377C, 387C, 402C
FORD BB 429, 460, 502, 520, 545
CHEVY BB 396/402, 427, 454, 489, 502, 540

TOYOTA 22R 1985 AND NEWER

