



TECH AND INSTALLATION TIPS

CALCULATING COMPRESSION RATIO

$$CR = \frac{\text{SWEPT VOL.} + \text{TDC VOL.}}{\text{TDC VOL.}}$$

Swept Volume = 3.1416 x Bore x Bore x Stroke ÷ 4

TDC Volume = Cylinder Head Volume + Gasket Volume + Deck Volume + Piston Dish (-Dome) Volume

Gasket Volume = 3.1416 x Gasket Bore x Gasket Bore x Compressed Gasket Thickness ÷ 4

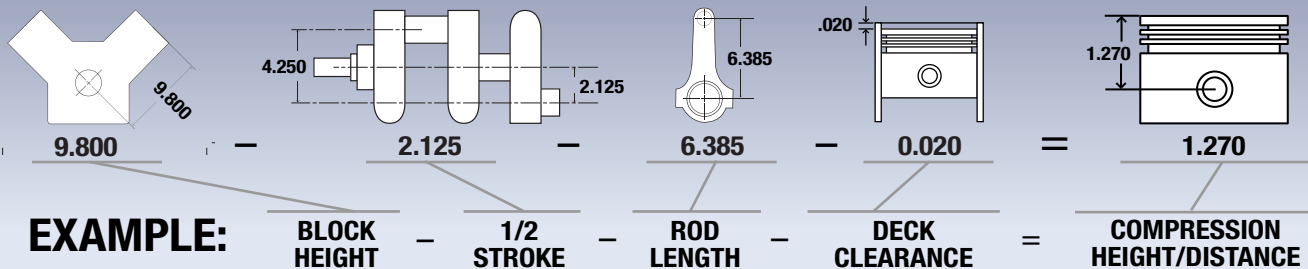
Deck Volume = 3.1416 x Bore x Bore x Deck Clearance ÷ 4

Piston volume = as published in JE catalog x -.061

Head volume = as published in cc's x .061

Always use cc's or ci's, do not mix the two. To convert cc's to ci's multiply cc's by .061

CALCULATING COMPRESSION HEIGHT/DISTANCE



PISTON/DOME TO HEAD AND SPARK PLUG CLEARANCE

Always check piston/dome to head and spark plug clearance to assure proper clearance (See fig.1). Minimum clearance for steel rod = .040", aluminum = .060". Check using clay with piston installed on rod at TDC, be sure to rock the piston back and forth in the bore to get total minimum running clearance.

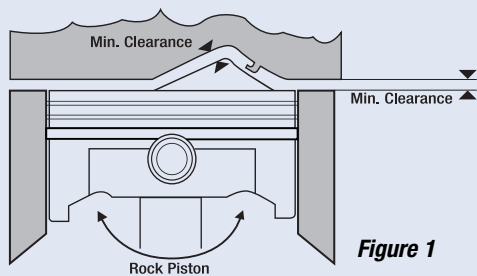


Figure 1

PISTON TO VALVE CLEARANCE

Piston to valve clearance is determined by cam lift, lobe separation, duration, valve margin, head design, and aftermarket milling of cylinder head. **Minimum recommended clearance for intake & exhaust valve is .100" in depth and .050" radially.** Check by using clay or follow cam manufacturers recommendations for checking clearance, making sure the cam is degreed exactly as it will be during operation.

CRANK COUNTERWEIGHT TO PISTON CLEARANCE

Always check crank counterweight to piston clearance at BDC. Recommended minimum is .060".

CONNECTING ROD TO PISTON CLEARANCE

Due to the large variation in rod widths and material thickness above pin, always check for proper piston to rod clearance on OEM, aftermarket steel rods and aluminum rods. Recommended clearance is .050" min per side and .050" min from top of rod to piston. With the piston installed on the rod, rock the piston side to side and rotate forward and backward to ensure proper clearance. See figure 2.

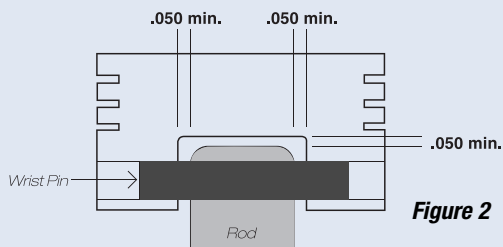


Figure 2



SMALL BLOCK
CHEVY

BIG BLOCK
CHEVY

FORD

MOPAR

BUICK/HRV

SPORT COMPACT

RINGS

HOW TO

Convert from Cubic Centimeters to Cubic Inches

Multiply by **.0610237**

Example **1835cc x .0610237= 111.98**

Convert from Cubic Inches to Cubic Centimeters

Multiply by **16.387064**

Example **350ch x 16.387064= 5735.47**

Convert from Inches to Millimeters

Multiply by **25.4**

Example **3.189 x 25.4= 81.00mm**

Convert from Millimeters to Inches

Multiply by **.0393701**

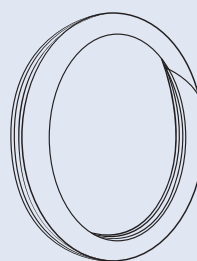
Example **81mm x .0393701= 3.1889**

INSTALLING WIRE LOCKS

Install the end of one lock at 90 degrees from the pick lock groove. Carefully rotate the lock into the groove without kinking or deforming the lock. Firm pressure will be needed to install wire locks into piston wire lock groove. After the first lock is in place, seat the lock by solidly hitting the wrist pin with a brass drift pin into the wire lock. Now install the wrist pin and connecting rod into the piston, install the second wire lock the same as the first. Just as a precaution, after final assembly of both locks we recommend hitting each side of the wrist pin with the brass drift pin back and forth an additional time. Perform these functions on a cloth towel or soft rubber pad to prevent damage to the piston occurs.

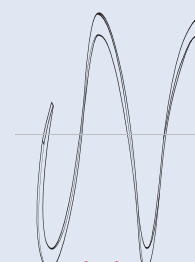
INSTALLING SPIRO LOCKS

For installing Spiro locks, grip each end of the lock and pull apart (approx. 3/8"-7/16"). The lock will resemble a small coil (fig. 5). The lock can then be spiraled into place almost as if you were screwing them into a groove (fig. 6). When the locks are properly seated, only half of the lock will be visible above the groove. Most JE Pistons that require spiral locks will need 4 locks per piston, two at each end of the pin. **WARNING: It is important that the correct numbers of locks are installed in each piston or severe engine damage may occur. WARNING: Do not over stretch spiro locks and do not reuse spiro locks!**



Not to Scale!

Figure 5



Approximate:
3/8" - 7/16"

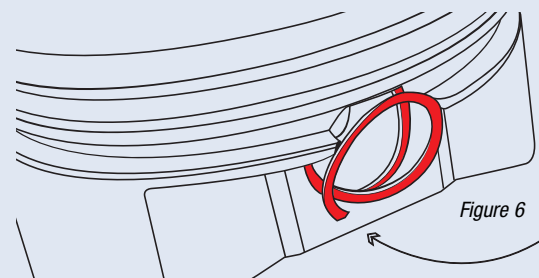


Figure 6

Attn: (JE Sales Associate)



Custom Piston Order Form

15312 Connector Lane, Huntington Beach, CA 92649, USA • TEL (714) 898-9763 • FAX (714) 893-8297 • www.jepistons.com

Engine Make: _____ Model: _____ Year: _____

Number of Cylinders: _____ Order Quantity of Pistons: _____

Cubic Inch Displacement: _____ Max RPM: _____ Approx. HP: _____

Bore Size: _____ Stroke: _____

Rod Length: _____

Steel Aluminum Titanium

Brand: _____

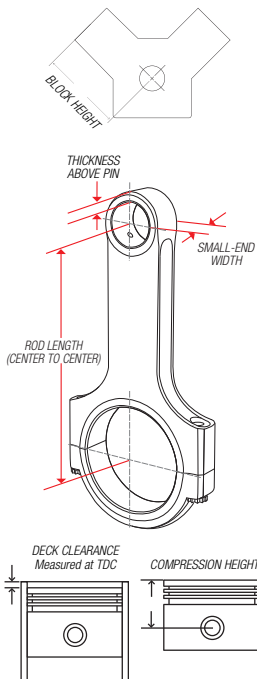
Rod Small-End Width: _____

Thickness Above Pin: _____

Piston Guided Rod Yes No

Compression Height Calculation Table

Block Height: _____
-1/2 of Stroke: _____
Rod Length: _____
Deck Clearance +/-: _____
Compression Height: _____



Head Gasket Thickness: _____

Compression Ratio: _____

CAMSHAFT SPECS: Hydraulic Solid Roller

Gross Valve Lift: In: _____ Ex: _____

Lobe Separation (°): _____ Duration @.050: In: _____ Ex: _____

Degreed in Std. °: + _____ ° - _____ °

Valve Lift @ TDC: In: _____ Ex: _____

CYLINDER HEAD Type: _____ Pt#: _____

Combustion Chamber Size: _____ cc's

Valve Diameter: In: _____ Ex: _____

Free Drop (If Known): _____

Was Cylinder Head Milled?: Yes No

If Cylinder Head Was Milled, How Much?: Flat: _____ Angled: _____

Piston Type (Circle One If Known):

- Dome Flat Top Dish Inverted Dome
- Conical Spherical Round 3D

Pistons Designed For: Circle Track Asphalt Dirt

Drag Race Road Race Marine Street/Strip

Other (Please Specify): _____

Is Your Motor: Carbureted Injected

Turbo Charged: Lbs. Boost: _____ Blown: Lbs. Boost: _____

Nitrous - How Much HP: 100 250 350 400+

Other (Please Specify): _____

Fuel Type: Pump Gas Race Gas Alcohol Nitro

Purchasing Rings with Order: Yes No Cylinder Qty: _____

If **NOT** Purchasing Rings, Please Provide Ring Set Brand

And Part Number: _____

Axial Ring Height: AXIAL RING HEIGHT

Top: _____ 2nd: _____ Oil: _____

Radial Ring Widths: RADIAL RING WIDTH

Top: _____ 2nd: _____ Oil: _____

OPTIONAL FEATURES

*For details on custom piston features and terminology refer to catalog pages VIII and IX

Gas Ports; Vertical: _____ Spin Boss: _____

Gas Ports; Lateral: _____ Window Mill: _____

Accumulator Grooves: _____ Skirt Coating: _____

Contact Reduction: _____ DBL Pin Oilers: _____

Oil Rail Supports: _____ Pin Fit: _____

PIN SPECS

Pin Diameter: _____ Length: _____ Wall Thickness: _____ Qty: _____

Pins With Order: Yes No Pin Fit: Yes No

Pin Series: 51 52 72 93 94 95 44

Locks: Double Spiro Lock Wire Lock Tru Arc HookWire

Single Spiro Lock Single Tru Arc Buttons

JE Pistons reserves the right to choose the appropriate pin length if supplying pins per each piston design.

Expedite Service 7 day + 25% 5 day + 40% 3 day + 50%

BILLING INFORMATION

Bill To: _____ Acct #: _____

Address: _____

Ship To: _____ Acct #: _____

Address: _____

Phone: _____ Fax: _____

Ship Method: _____ P.O. #: _____

CC#: _____ CVC#: _____

Name On Card: _____ Exp: _____

Deposit Amount (50% required): _____ Billing Zip Code: _____

Signature: _____ Date: _____

Customer's Email address: _____

RETURN POLICY: Custom pistons are returnable only for defects in workmanship or materials in the as received condition. Under no circumstances will parts be returnable after 90 days. Please check packaging for complete details regarding return policy. All returns require "Return Materials Authorization" (RMA) number, available from the JE sales department.