CH-100
Line Hone
Line Boring & Cam Boring Capabilities
Main Bearing Bore Alignment - Essential to All Engine Rebuilding Jobs

Warpage.
Continual heating and cooling of engines causes block warpage and distortion. Result: misalignment of the main bearing bores. As warpage occurs slowly, the original inserts and crankshaft compensate for the warpage through gradual wear. If you install a reground crankshaft and new inserts in the warped block, this misalignment (even though slight) causes crankshaft bind. As inserts and crankshaft try to compensate for the existing warpage ... they wear out quickly.

Stretch.
High loads usually cause main bearing caps to "stretch" vertically and "pinch in" at the parting line. Again, the original inserts compensate for this distortion through wear. Installing new inserts with stretched caps causes crankshaft bind and failure of the new inserts or crankshaft.

Spin.
If an engine block is subjected to excessive heat and loads, the bearings may seize to the crankshaft and spin with it. The result is a scored main bearing bore housing with "burned" bearing and crankshaft.
If you put in a reground crankshaft and new inserts without an align hone job ... you'll wind up with crankshaft bind. This robs the engine of horsepower and causes new inserts to wear quickly. Or, excessive cap stretch reduces bearing crush (which holds the insert in place), causing the insert to seize and spin. This results in a scored main bearing bore housing and often a broken crankshaft.

Main bearing bore misalignment is usually detected only after the crankshaft and new inserts are installed. Piece-meal corrections then must be made (time-consuming hammering, filing, etc.) or the engine may even have to be torn down again to correct the problem.

The CH-3 Easy Operation

1. Retractor Lever -
   Drive Unit allows you to retract stones for quick loading and unloading of mandrel in block for ease of gaging bore size.

2. Quick-Coupler -
   Allows you to quickly engage and disengage hone unit to the driving mechanism for easy setup and gaging.

3. Drive Unit -
   Has torque-absorbing mount. Eliminates operator fatigue.

4. Stroking Stops -
   Help set correct stroking pattern for any block.
100 Horizontal Hone

ating Features

5 Drip Tray –
Catches oil runoff.

6 Mandrel Support – (Optional)
Allows mandrels to be rolled into and out of honing position with less lifting by operator.

7 Mandrel Storage Rack –
(Optional)
Holds three mandrels up to 3" (76.2 mm) in diameter.

8 Oil Control –
Directs oil to main bearing web area. Oil flow automatically shuts off when oil line is raised.

9 Crank Handle –
Allows quick, easy height adjustment of block.

10 Exclusive design of Sunnen Hone Unit –
Rounds up holes quickly with minimum stock removal. (Honing Units must be ordered separately.)

11 Adjustable Block Cradle –
Accepts in-line and V-type blocks (both 60° and 90°).

12 Front Panel –
Drops down for easy loading and unloading. (Shown in lowest position.)
Sunnen CH-100 Accessories
Feature Versatility and Efficiency

**PLB-100 Line Boring Attachment:**
- 1.5 in. (38.1 mm) hard chrome bar with tool bit holes on 5 in. (127.0 mm) centers - length 48 in. (1220.0 mm)
- Auto-feed with 4 ranges, .002, .004, .006 & .008 in. (0.05; 0.10; 0.15 and 0.20 mm) per revolution
- Positive feed screw drive
- Hand feed for thrust face matching
- Spring loaded tool bits for easy adjustment
- Universal mounting flange for various car and light truck applications
- Most GM V6 & V8 blocks do not require universal mounts
- Small block and big block Chevy centering bushing standard
- Lightweight: 15 lb. (6.8 kg) plus bar
- Boring range 1.800-4.800 in. (45.7-121.9 mm)

**PLB-1200 Cam Boring Attachment:**
- Easy to install and operate
- Threaded tool bits for easy adjustment
- Adjustable bushings
- Lightweight - only 45 lbs. (20.4 kg.) plus bar and drive unit
- Boring range 2,000 to 2,400 in. (50.8-60.9 mm)
- With optional tooling 2.750 in. (69.85 mm)

**CH-100-I Available for Industrial Applications**
The CH-100-I is equipped with a universal vise fixture for industrial applications such as short hydraulic cylinders, spool valves, tandem bores and shotgun barrels. See your Sunnen Field Engineer for details.

**CRG-920 All Purpose Cap and Rod Grinder**
Cuts main bearing and con rod parting surfaces. Handles sizes from subcompact up through large diesels. Assures ultimate precision — fast and easy.

**MBK-75 Main Bearing Cap Knurler**
The Sunnen MBK-75 knurls main bearing caps that have become loose. Knurling ends of the caps increases their width up to .01" (0.25 mm). Tightening the fit ensures exact location of caps. With the MBK-75 you can line hone and line bore and be sure the bore will stay straight and round when the caps are removed for installing bearings and crankshaft. Handles caps from small 4 and 6 cylinder cars to large diesel blocks. Easy to set up.

**PLB-1600 Oil Grooving Tool**
The Sunnen PLB-1600 is used on blocks when installing oversize roller cam bearings. It is also ideal for enlarging cam grooves to increase the oil flow.
Why Line Hone?
The Sunnen CH-100 does the complete job of alignment and sizing main bearing bores in about 30 minutes. That’s floor-to-floor time for an average passenger car block. Add a few minutes more for truck blocks.

But in the long run, quality of the job is the final determining factor for which method is best. It can make or break your reputation.

The CH-100 has no equal for doing quality work. That’s why it has a practical and profitable application in any shop... for big blocks or little blocks.

Line Hone –
All in-line and V-type passenger car and light truck blocks are easy work for the Model CH-100.

Line Bore –
Handles big truck blocks up to 45" (1140 mm) long...bores from 1.8" to 7.0" (46 to 178 mm) range.

Versatile –
Block cradle adjusts easily to accept small in-line 4-cylinder blocks.

Built with Benefits That Assure Precision and Profits!

- Minimum Stock Removal– Usually less than .003" (.076 mm) off the caps compared to as much as .010" (.254 mm) with boring. And so little stock out of the main bearing bores that thrust faces or oil seal grooves are not affected.
- No Delays During Engine Assembly— No binding crankshafts or bearing misalignment.
- Fast, Easy Set Up— After grinding and replacing the caps, you position the block... insert and adjust the Honing Units... engage the drive arm and set the limit stops. You’re ready to hone.
- Easy to Use— Any shop person can run the CH-100 right away... “the old pro” or your newest man.
- Optimum Precision in Every Way— You’re sure to meet or exceed original factory accuracy. For alignment, roundness, size.
- Maximum Precision— The CH-100 hone corrects distortion caused by warpage and cap stretch. High spots in the bore are removed to achieve alignment.
- Practical and Profitable— Line hone every block you rebuild. It can even be used to hone cam bores down to 1" (25.4 mm).
- High Profit— You make $90-$120 in 30 minutes on a typical V-8 block.
Specifications:

Capacity: V-blocks, both 90° and 60°; overhead and L-head in-line blocks; angle head blocks: up to 45° (1140 mm) long, 28" (710 mm) from head deck to main bearing centerline.

Main Bearing Bore: 1.800" to 7.000" (46 to 178 mm)

Diameter Range: Note: special tooling required for 5000" to 7000" (127 to 178 mm) range


Honing Oil Reservoir: 35 gallon (132 liter) capacity

Electrical System: 115/230 V, 1-phase, 60 Hz

Also available in 220 V, 1-phase, 50 Hz

Floor Area: 116" x 50" (2946 mm x 1270 mm)

Weight: Approximately 1450 lbs. (660 kg)

Shipping Weight: Approximately 1650 lbs. (760 kg)

Ordering Information:

<table>
<thead>
<tr>
<th>CH-100</th>
<th>Diameter Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honing Unit</td>
<td>Inches</td>
</tr>
<tr>
<td>8RY-2400G</td>
<td>2.400-2.700</td>
</tr>
<tr>
<td>8RY-2700G</td>
<td>2.700-3.000</td>
</tr>
<tr>
<td>10RY-1800F</td>
<td>1.800-2.100</td>
</tr>
<tr>
<td>10RY-2100F</td>
<td>2.100-2.400</td>
</tr>
<tr>
<td>10RY-2400G</td>
<td>2.400-2.700</td>
</tr>
<tr>
<td>10RY-2700G</td>
<td>2.700-3.000</td>
</tr>
<tr>
<td>10RY-3000H</td>
<td>3.000-3.500</td>
</tr>
<tr>
<td>10RY-4500H</td>
<td>4.500-5.000</td>
</tr>
<tr>
<td>15RY-3500H</td>
<td>3.500-4.000</td>
</tr>
<tr>
<td>15RY-4000H</td>
<td>4.000-4.500</td>
</tr>
<tr>
<td>15RY-4500H</td>
<td>4.500-5.000</td>
</tr>
<tr>
<td>10RY-5000H</td>
<td>4.500-5.000</td>
</tr>
<tr>
<td>15RY-5500H</td>
<td>5.000-6.000</td>
</tr>
<tr>
<td>10RY-6000H</td>
<td>6.000-6.500</td>
</tr>
<tr>
<td>15RY-6500H</td>
<td>6.500-7.000</td>
</tr>
<tr>
<td>15RY-5000H</td>
<td>5.000-5.500</td>
</tr>
<tr>
<td>15RY-5500H</td>
<td>5.500-6.000</td>
</tr>
<tr>
<td>15RY-6000H</td>
<td>6.000-6.500</td>
</tr>
<tr>
<td>15RY-6500H</td>
<td>6.500-7.000</td>
</tr>
</tbody>
</table>

PLB-1200 Cam Boring Attachment (includes the following):

- PLB-1400 Cam Boring Stand
- PLB-1300 PLB-100 Mounting Adapter
- PLB-1260 Stud Drive Shaft
- PLB-1235 Adjustable Bushings (Pkg. of 2)
- PLB-1280 Adjustable Pilot Lock Tool
- PLB-1290 Adjustable Pilot Lock Tool
- PLB-1210 Boring Bar Assembly
- PLB-1275 Tool Bit 2.000" - 2.400" (50.8 - 60.96)
- PLB-1733A Micrometer (for setting tool bits)

Optional for sizes 2.250" - 2.750" (57.15 - 69.85):

- PLB-2400 Blade Set
- PLB-1295 Tool Bit
- PLB-100 Line Boring Attachment
- PLB-1600 Oil Grooving Tool
- MBK-75 Main Bearing Cap Knurler

For price and availability contact Sunnen Customer Service -
U.S.A. Toll Free: 1-800-772-2878
Outside U.S.A.: 314-781-2100

NOTE: Sunnen reserves the right to change or revise specifications and product designs in connection with any feature or performance claims made herein. Such changes shall not affect the buyer to corresponding changes, improvements, additions, or replacements for equipment, supplies or accessories previously sold. Information contained herein is considered to be accurate based on available information at the time of printing. Should any discrepancy of information arise, Sunnen recommends that users verify the discrepancy with Sunnen before proceeding in any bore sizing and finishing operation.

SUNNEN PRODUCTS COMPANY
7910 Manchester Ave., St. Louis, MO 63143 U.S.A.
Phone: 314-781-2100
U.S.A. Toll Free Sales and Service: 1-800-772-2878
Fax: 314-781-2268
International Fax: 314-781-6128
www.sunnen.com
e-mail: sunnen@sunnen.com

SUNNEN PRODUCTS LIMITED
No. 1 Centro, Maxted Road
Hemel Hempstead, Herts HP2 7EF ENGLAND
Phone: 44 1442 39 39 39 Fax: 44 1442 39 12 12

www.sunnen.com

SUNNEN AG
Fabrikstrasse 1
8586 Ennetach-Arben SWITZERLAND
Phone: 41 71 648 16 16 Fax: 41 71 648 31 31

SHANGHAI SUNNEN MECHANICAL CO., LTD.
889 Kang Qiao East Road, Pudong
Shanghai 201319 P.R. CHINA
Phone: 86 21 5813 3322 Fax: 86 21 5813 2299

SUNNEN ITALIA S.R.L.
Via Stelvio 12/15
20021 Ospedale di Bollate (MI) ITALY
Phone: 39 02 383 417 1 Fax: 39 02 383 417 50

©2004 Sunnen Products Co.
Printed in U.S.A.
X-CH-5001
5814-MP-7.3