

# **BHJ Products, Inc.**

## **Parts List & Instructions**

Product Name: **Connecting Rod Fixture**  
BHJ Part#: **CRF-2**

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### **Kit Contents:**

**1x** Connecting Rod Fixture

### **Recommended Accessories:**

Rod Length Checking Kit, BHJ P/N: CRF-IND

Set-Up Standards, BHJ P/N: CRF-STD-XXXX (various lengths, per application)

Adjustable Pin-End Boring Head, BHJ P/N: CRF-ABH

## **Description**

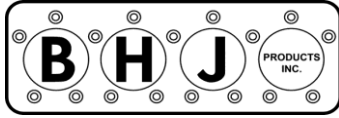
BHJ's Connecting Rod Fixtures provide a highly accurate method for boring the pin end of connecting rods for pin bushing installation. Rods are held securely while the pin end is bored using a common vertical-milling machine. The Fixtures provide a rigid, quick and repeatable method of holding the connecting rod during the pin boring operation. The three-point pneumatic clamping mechanism at the journal end, in conjunction with an adjustable two-sided mechanical clamp at the pin end, ensures the pin bore is machined absolutely parallel to the journal bore.

The adjustable CRF-2 accommodates connecting rods with a center-to-center distance range of 3.00" to 14.00". The journal-end size range for the CRF-2 is 1.920"-4.750".

- Smaller journal-size ranges (1.920"-3.875") are accommodated with the big-end support block in its standard position (two alignment dowels located away from the wrist-pin end of the fixture).
- Larger journal-size ranges (over 3.875"-4.750") are accommodated with the big-end support block in its reversed position (two alignment dowels located closer to the wrist-pin end of the fixture). This switch is made possible, by removing the four bolts in the underside of the base plate and replacing them, after reversing the support block.

Available options include application-specific Set-Up Standards, which enable accurate fixture set-up at the correct center-to-center distance, as well as a Rod Length Checking Kit, which incorporates a dial indicator and mounting bracket, to allow either Fixture to double as a rod length gauge to make comparative measurements using a qualified connecting rod or the Set-Up Standards. BHJ's adjustable Connecting Rod Pin-End Boring Head is also available separately for accurate boring of the pin-end of connecting rods on typical milling machines. For more information on options, visit [www.bhjproducts.com](http://www.bhjproducts.com).

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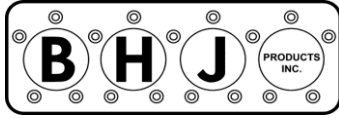
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### **Fixture Set-Up & Use**

1. Clamp the fixture to the mill table. The 5/8" slot in the bottom of the base plate allows use of a key for alignment.
2. Loosen and remove the three bolts mounting the pin-end clamping unit to the base of the fixture and re-locate as necessary to accommodate the rod being machined. The pin-end clamping unit may also be reversed to accommodate very short-length rods.
3. Dial in the outside edges of the 3/4" vertical dowels to establish the correct centerline.
4. Connect a 100psi air supply to the open port on the side of the air switch.
5. Install the set-up standard (if ordered) onto the fixture and move the sliding block back manually, until the clamping ball is contacting the set-up standard bore. Next, open the air switch to clamp the journal end of the standard. Move table X-Axis only and dial-in the 1/2" dowel on the pin-end of the standard. Adjust the pin-end adjusting clamps for Y-Axis position. Remove the standard once the fixture is dialed-in.
  - Smaller journal-size ranges (1.920"-3.875") are accommodated with the big-end support block in its standard position (two alignment dowels located away from the wrist-pin end of the fixture).
  - Larger journal-size ranges (over 3.875"-4.750") are accommodated with the big-end support block in its reversed position (two alignment dowels located closer to the wrist-pin end of the fixture). To switch, remove the four bolts in the underside of the base plate and then replace them, after reversing the support block.
6. Load a connecting rod onto the fixture after backing-out the pin-end clamps to provide adequate clearance. Again, move the sliding block back manually, until the ball is contacting the rod bore. Open the air switch to clamp the journal end of the rod.
7. After clamping the journal end, swing the rod back-and-forth between the pin-end clamps approximately 1/4". This process will allow the rod to seat properly between the ball and the two locating dowels. This adjustment ensures the rod is oriented perpendicular to the journal-end bore.
8. Adjust the pin-end of the rod from side to side, to obtain the desired pin-hole position in the rod forging.

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### **Fixture Set-Up & Use (continued)**

9. The pin-end clamp blocks are adjustable and may be set to one of two positions, to compensate for various rod end widths. To adjust, remove the black clamp-block plate from the main base plate of the fixture and remove the mounting fasteners under each clamp block.
  - If using the Rod-Length Indicator (CRF-IND), adjust the indicator bracket accordingly...
    - i. If the two pin-end clamp blocks of fixture are on the inner mounting location (for smaller rods): Attach the indicator bracket-mounting plate to the two threaded holes of the bracket mount that are one hole inward from the end of the indicator mount, (see "CRF-2" location range, engraved on bracket mount).
    - ii. If the two pin-end clamp blocks of fixture are on the outer mounting location (for larger rods): Attach the indicator bracket-mounting plate to the two threaded holes of the bracket mount at the end of the indicator mount furthest from the indicator, (see "CRF-2" location range, engraved on bracket mount).
10. When loading consecutive rods, loosen one side of the pin-end clamps only to speed the pin-end aligning process described in step 7.

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