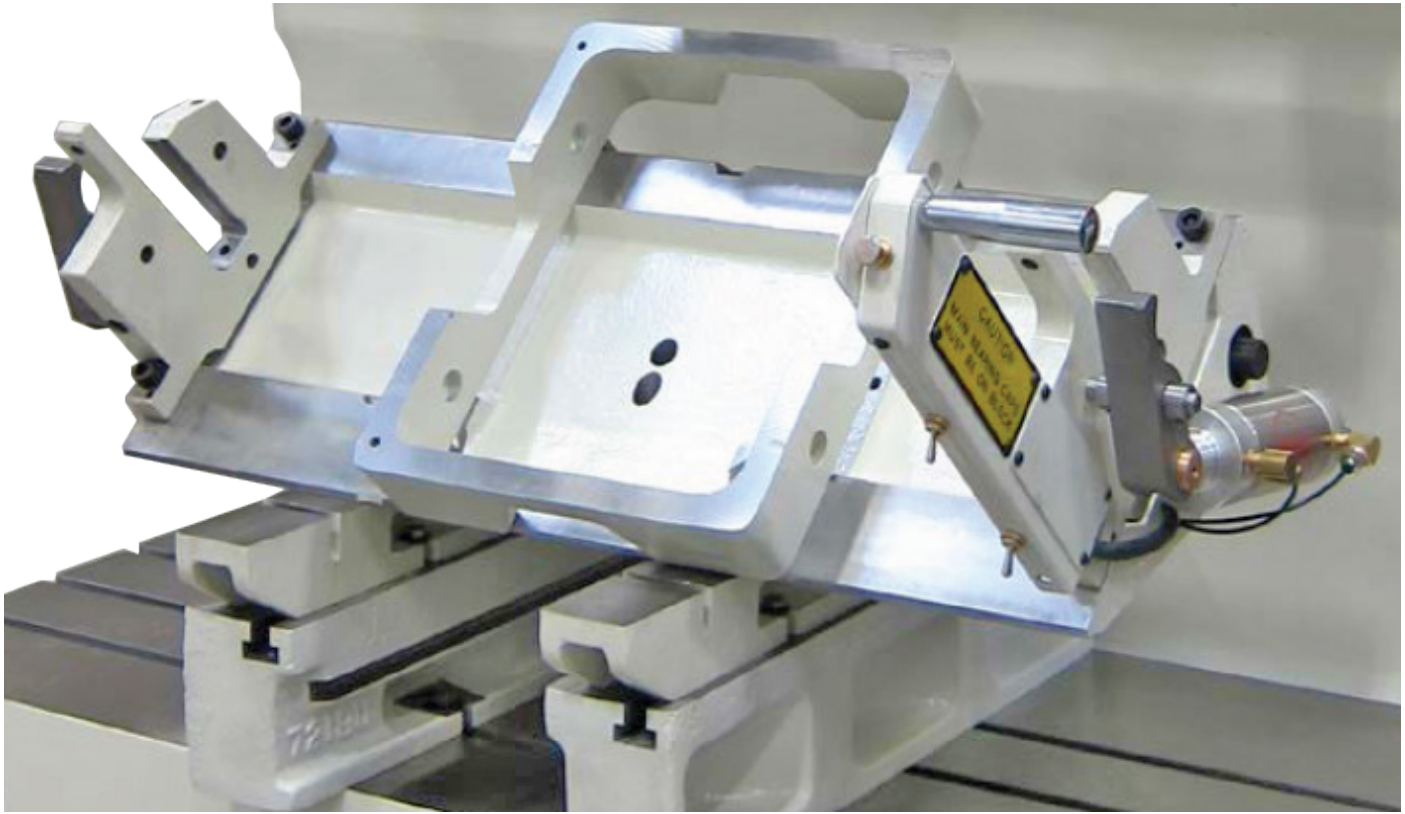




# 502-1-72F V-BLOCK FIXTURE

OPERATION AND MAINTENANCE MANUAL





## **ORDERING PROCEDURE**

Contact your regional Rottler sales rep for assistance in ordering optional equipment, replacement parts, or tooling.

If you are unable to contact your regional Rottler sales rep, call the factory at 253-872-7050 and ask to speak to the parts sales specialist.

Have the following information handy to expedite the ordering process:

1. Your name, business name, and contact number
2. Customer number
3. If you don't have a customer number, your billing address
4. Shipping address if different from billing address
5. Machine model and serial number
6. Part number and description of what you want to order
7. Preferred method of shipment

You may also contact us via e-mail with the above information. Send e-mail requests to:  
[parts@rottermfg.com](mailto:parts@rottermfg.com) or [intlpart@rottermfg.com](mailto:intlpart@rottermfg.com)

In some cases you may be requested to send a photo of the part you are ordering if it is a replacement part, or doesn't appear in the database.

If you are unsure which part you need to order, contact our service department and ask to speak to one of our service consultants. They will assist you in determining which part you require.

**THERE IS A MINIMUM ORDER OF \$25.00**



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## Operating Instructions

### Loading Blocks: Small Gas and Diesel

#### **WARNING**

Handle the block and fixture with EXTREME care and guidance. A block hoist is REQUIRED. Mishandling of a heavy engine block and fixture may result in the dropping of parts and personal injury.

The Model 502-1-72F manual V6/V8 combination fixture is a fast, simple and universal system to properly and accurately hold most 60 degree V-type engine blocks for either cylinder boring or deck surfacing.

See illustration on the following page.

### Boring Application

**NOTE: The block must have the main bearing caps in place and torqued.**

Care must be taken to assure the contact edges of the locator bar are near the cap split line. A pair of 3/8" and 1/2" spacers are provided for blocks with large main bearing bores, to enable the bar to locate near the main bearing split line. (See figure 2)

### V-blocks

(blocks with main bearing center lines no more than 1/2" higher than the pan rail plane) are mounted with the 502-3-8B V-block frame in place. Select the 90-degree option placement of the frame to suit block length, or main bearing caps will interfere with frame. Rotate frame 90 degrees by moving its shoulder screws to alternate set of holes.

### Y-Blocks

(blocks with main bearing center lines 2-3/8" to 3-1/2" higher than the pan rail plane) are mounted directly on the fixture. Some Y-blocks (GM 60 degree) have too narrow pan rails and some have too low main bearing location which will require the use of the 502-1-15C precision 1-1/4" x 3" parallel set to raise and or support the block. Use the shoulder screw from the V-block frame and hook the parallels over the back of the V-fixture.

This fixture may be easily repositioned on the support parallels (without a block in place) to shift from the 60 degree support surface to the 90 degree support surface or vice versa.

**⚠ WARNING**

Extreme care must be taken by operator whenever handling large blocks. Large blocks may cause fixture to tip when floated too far outward. We recommend leaving hoist attached when moving these blocks. Large blocks should be lifted from the block bank surface. DO NOT use the 502-1-95 block handler assembly on these blocks.

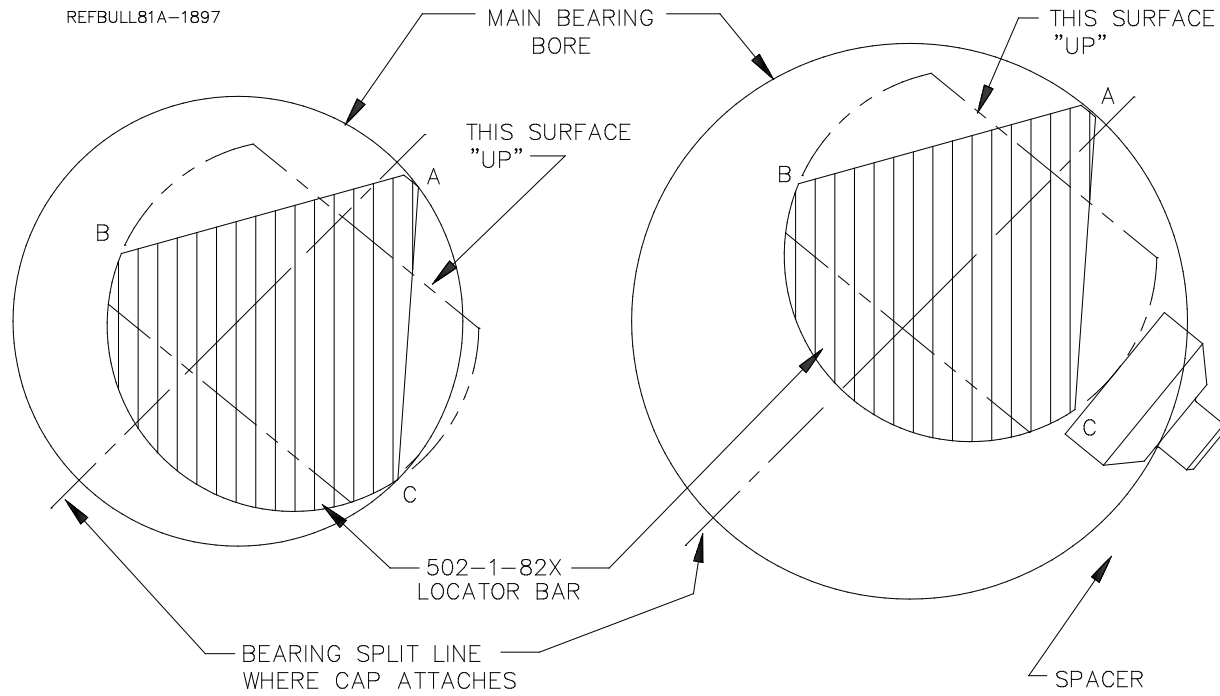


FIGURE 1

FIGURE 2

## Normal Operating Procedure

The normal operation procedure on smaller V-blocks is to first pick up the block. If using the optional 502-1-95 block handler attach it to the block making sure the cam lifters are COMPLETELY engaged, and that the lift hook is approximately centered in the block lengthwise. Place the 502-1-82X locator bar through the main bearings and hoist the block into the fixture. Pulling the block towards you, with the locator against the positioners, will prevent jamming in the slot of the guides during the loading and unloading operations. The locator bar is positioned with the word 'UP' that is on the end of the bar facing up and away from the operator. (see figure 1) After the locator bar is engaged in the positioners, pivot block outwards as you lower it. Slide block to the far left (this is the non adjustable position).

Make sure the block is firmly seated in place and not resting on pan-rail burrs or other interference points. Accurate seating can also be a problem with extremely warped, distorted blocks. Another cause of problems is failure to remove main bearing inserts. The locator bar has a relief for blocks with a small main bearing or seal. Rotate locator bar clamps into position & lightly tighten the hand screws, applying even pressure to both. Clamp the block securely with the main base clamp arms.

Warped or distorted blocks may require leveling of the deck surface in the long direction. This is possible with the hand-screw assembly in the left-hand bar positioner. Loosen both clamp hand-screws and slide the locator bar to the far right position. Retighten both clamp hand-screws. Raise or lower the adjusting hand-screw as required. For the non-adjustable position slide locator bar to the far left.

Push fixture back into bore position. There is a guide block (502-1-105) attached to the bottom of the fixture to aid in guiding the fixture along the support ways.

Operate the block clamp arms, bore, and pull fixture back to the load position.

Loosen locator bar hand screws and rotate clamps out of the way. Lift the block, either from the deck surface or with the optional 502-1-95 block handler. Turn the block 180 degrees & reload to duplicate the operation on the other bank.

After turning the engine block 180 degrees the locator bar must be twisted 180 degrees also. Again the word 'UP' must enter into the positioners facing up and away from the operator. (See figure 1).

### Figure 1

502-1-82X main bearing locator bar indexes at point A. When bank is reversed and the bar is twisted 180 degrees, point A still indexes the main bearing.

Point C holds the block down. When bank is reversed and the bar is twisted 180 degrees, point B holds the block down.

### Figure 2

502-1-82X main bearing locator bar indexes near bearing split line. Point C does not contact the bearing cap but rests on matched spacers that are provided to fit in the bar positioners slot. If there is a means of holding the block down such as block clamp towers, this method may be used in large bores in order to properly index near the bearing split line. If extreme care is used this method may be used to index blocks without bearing caps attached. (Optional clamp down must be provided).

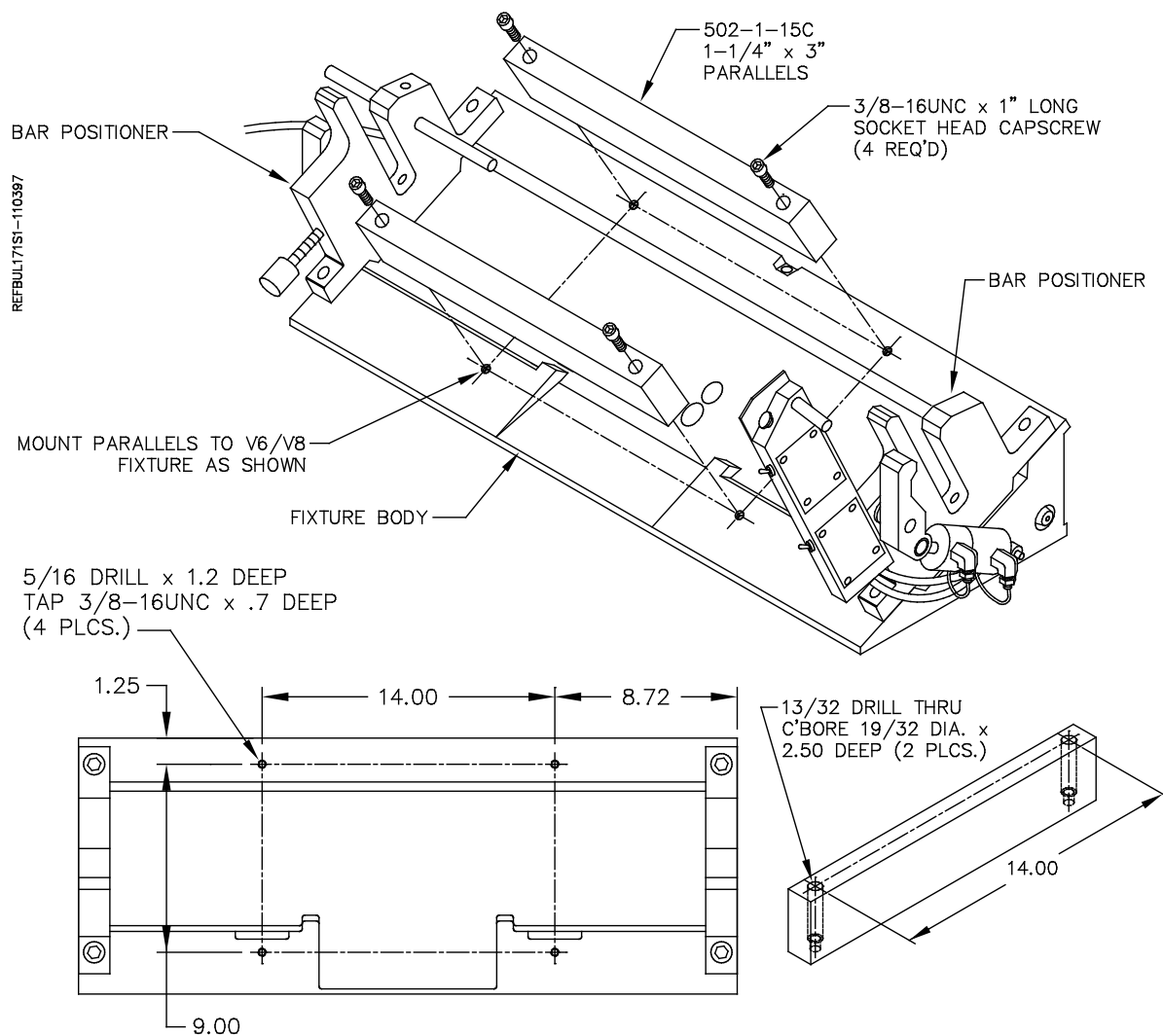


## Retrofitting 502-1-15C Parallels to the Fixture

(Special Applications)

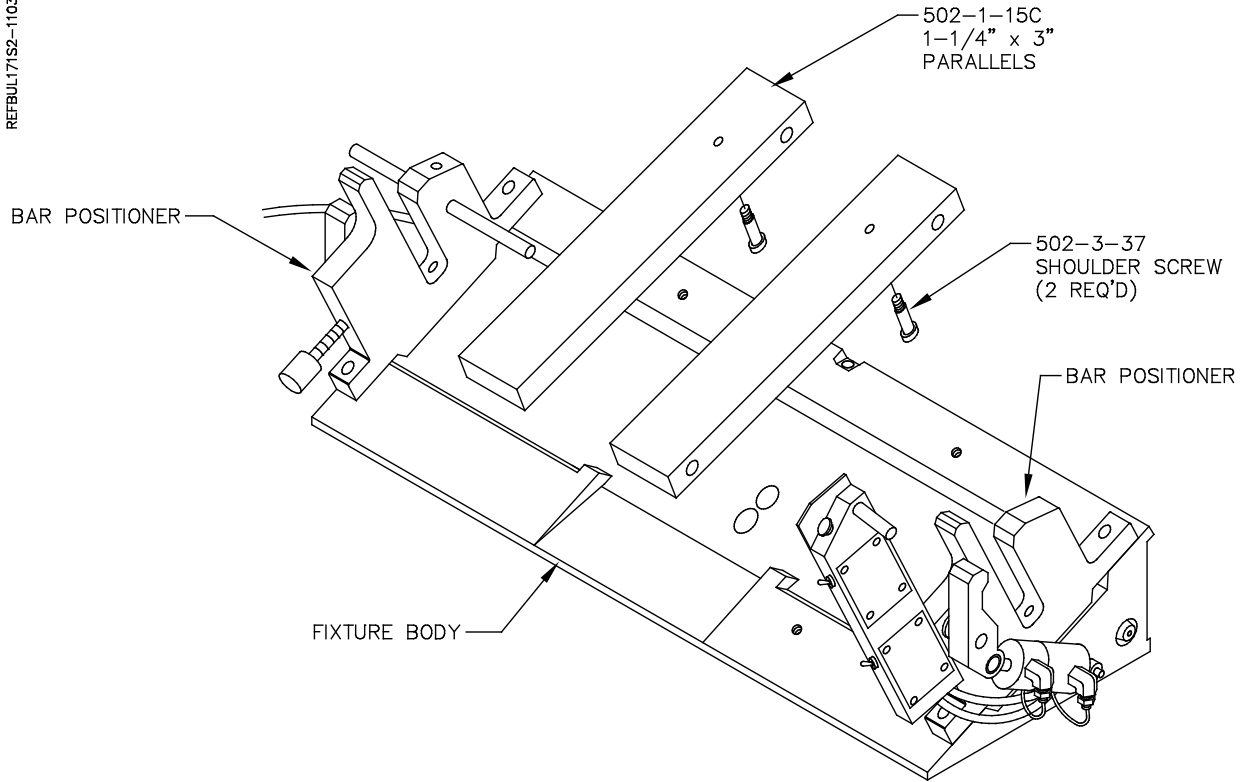
Some engine blocks with large main bores ( $3\text{-}1/8''$  and larger) cause a problem of the locator bar bottoming out in the bar positioners and/or the V-shaped relief's of the 502-3-8B V-block frame before clamping the block properly. Mounting the 502-1-15C parallel set as shown below in place of the V-block frame will provide proper clearance for clamping. Older style fixtures and parallels can be modified to this configuration using illustrations below.

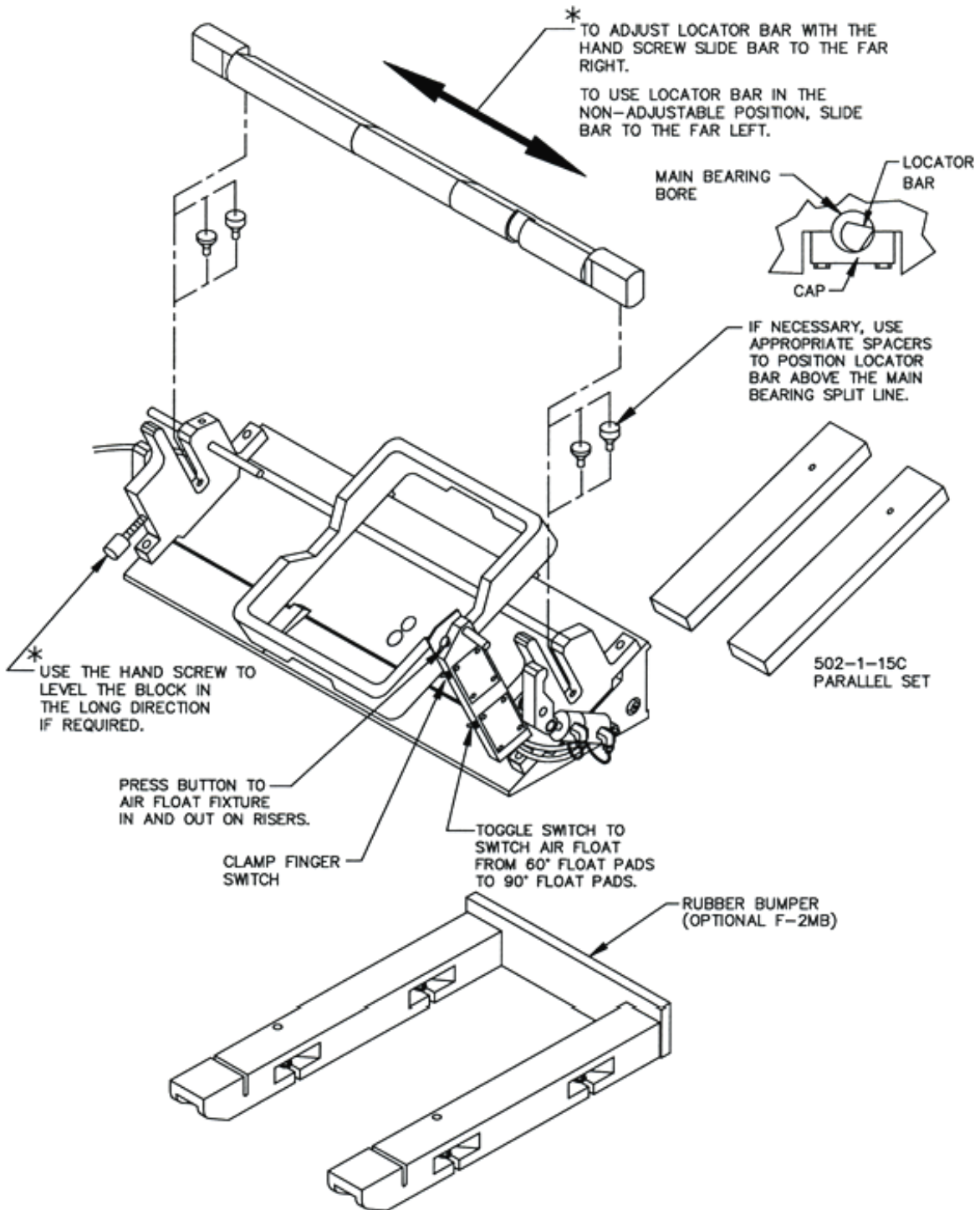
V-6 blocks with one-piece 'caged' main bearing caps (all caps are connected) can interfere with 502-3-8B V-block frame. The parallel arrangement shown below will allow proper support and clamping of these blocks.



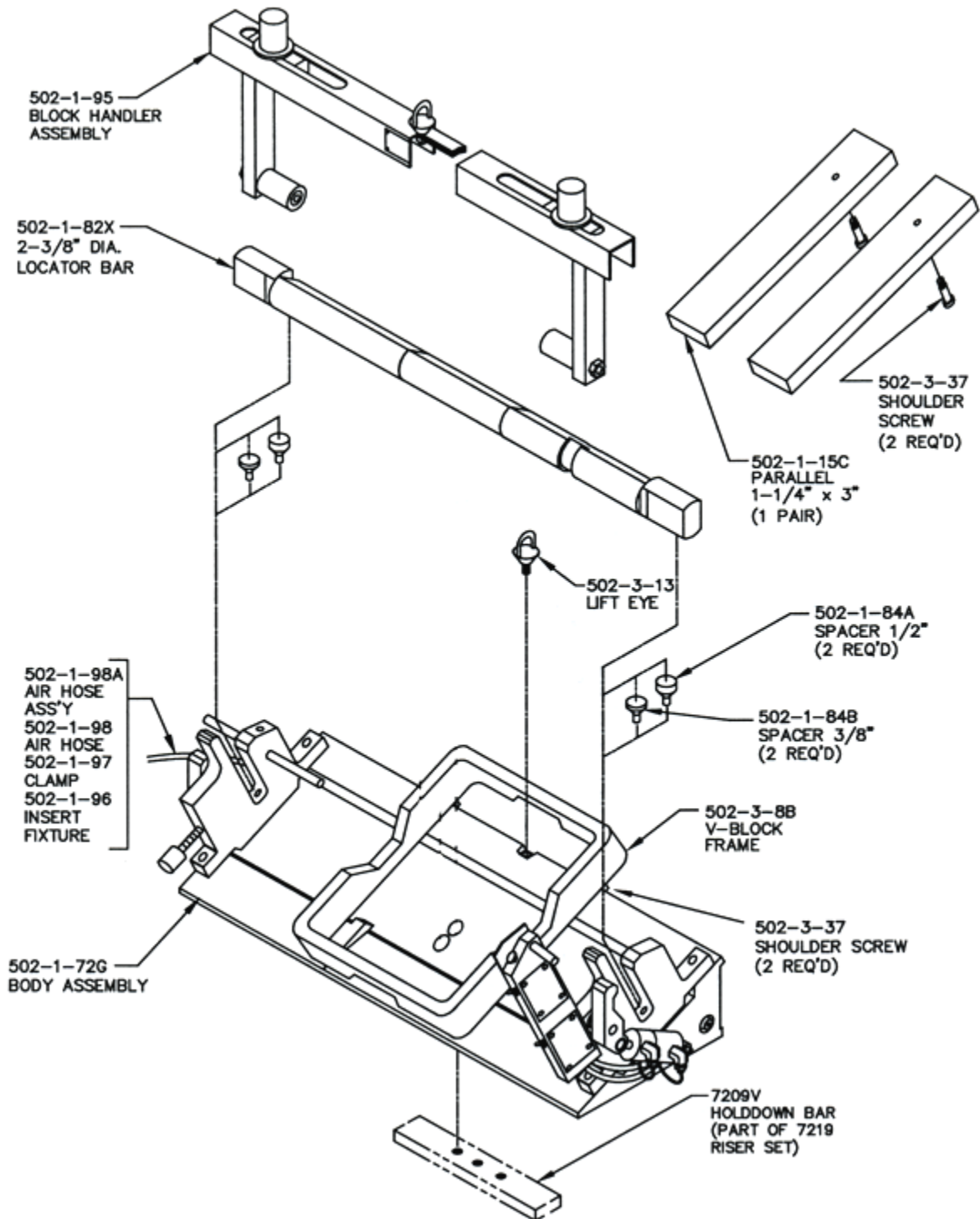
Some V-6 engine blocks (for example Buick V-6) have main bearing bores that are too low in respect to the pan rails. This presents a problem of the locator bar bottoming out in the bar positioners before the block is properly clamped. Positioning the 502-1-15C parallel set as shown below will raise the block enough to provide proper clamping.

REFBUL1752-110397





Fixture Parts





# Air System Diagram

