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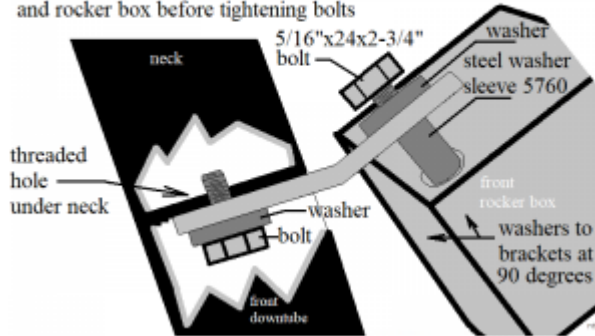
# IH: Engine Mechanicals - Sub-09B

## Shimming Motor Mounts

- The top mounts should be shimmed if they do not fit nice against the frame.
- Before tightening top mounts, check to make sure there is no space left between the mount and rocker box (or heads respectively).  
Don't allow any of the mounts to be "stressed" or "pulled" into position by tightening the bolts. The mount is flat at each bolt hole and any space between it and the recessed hole on the rocker box can stress therefore break the mount.  
If it doesn't break the mount, the stress can allow the rocker box to be "stress" pulled upward and create a leak at the gasket. <sup>1)</sup>  
Use extra washers to add / change as needed to achieve "zero space left" before tightening.  
Remove the mount if need be to add shims.  
Then go back through the installation steps to just snug the entire assembly before torque is applied.
- Normally washers are used as shims although some have bought or made spacers from hollow sleeves.  
Either way, the shims need to be flat on top and bottom to allow for even torque across them. Store bought spacers have a habit of warpage or imperfections on the ends which may need to be straightened before using.  
If the top or bottom of a shim is not true flat, any high/low spots can turn during vibration and end up loosening the motor mount assembly.
- Use hardened flat washers (soft washers will crush or taco and not hold correctly) over slotted holes and grade 8 nylock nuts.  
Use hardened washers against aluminum also. Pyramid stack hardened washers for the big single upper mount bolt.  
Use a fender washer or make a large diameter shim if needed to close any gap (fine thread grade 8 bolt & nut).  
[Click Here](#) to reference for more detailed information on top mounts per year model.
- The parts books "hint" thru illustration that washers can be used between the frame and upper front motor mount if needed to take up space as needed.  
However, placing the bracket against the frame gives maximum clamp space to the assembly without added "tilt-ability" of the bracket.  
Placing spacers below the bracket and leaving the bracket against the frame will give more rigidity to the assembly.
  - 1/16" washers (6702) suggested for 78-81 models and 5/64" washers (6702) suggested for 82-85 models.

**1977 (only) Sportster Upper Front Motor Mount**www.sportsterpedia.com (can also swap to 78-85 hardware instead)

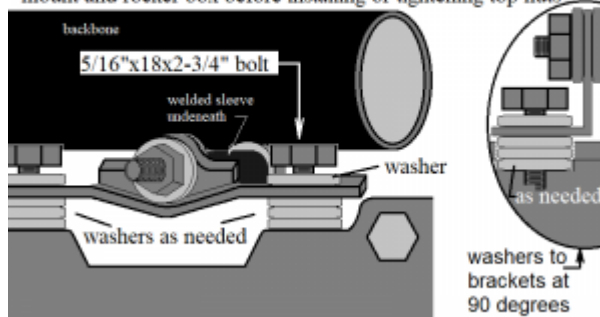
Use shims as needed to take up all space between mount and rocker box before tightening bolts



DO NOT TRY TO CLOSE ANY GAPS BY TIGHTENING THE ASSEMBLY

**1977 (only) Sportster Upper Rear Motor Mount**www.sportsterpedia.com

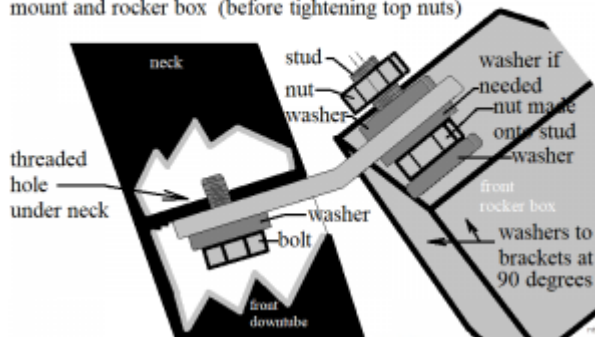
Use washers (shims) as needed to take up all space between mount and rocker box before installing or tightening top nuts



2) DO NOT TRY TO CLOSE ANY GAPS BY TIGHTENING THE ASSEMBLY (dramatization not to scale)

**1978-1985 Sportster Upper Front Motor Mount**www.sportsterpedia.com (can also be used on 77 models)

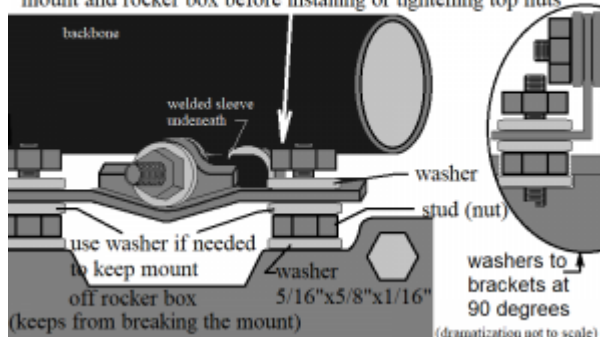
Use washers (shims) as needed to take up all space between mount and rocker box (before tightening top nuts)



DO NOT TRY TO CLOSE ANY GAPS BY TIGHTENING THE ASSEMBLY

**1978-1981 Sportster Upper Rear Motor Mount**www.sportsterpedia.com (can also be used on 77 models)

Use washers (shims) as needed to take up all space between mount and rocker box before installing or tightening top nuts



4) DO NOT TRY TO CLOSE ANY GAPS BY TIGHTENING THE ASSEMBLY (dramatization not to scale) 5)

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Pan55 of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/167782-seat-and-motor-mount-help/page2?t=1801757&page=2>

2) 3) 4) 5)

drawing by Hippysmack

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