

Clamp Tie Bar Installation

For All Uniloy IBS Models

Note: It is strongly recommended that since you have the opportunity to replace tie bars, you also replace the upper nuts on both the upper and lower cross arms with Superbolt tensioners (4 tensioners total). This will eliminate the pre-loading of the tie bar nuts as described in steps 13, 15, 20, and 21 below.

This procedure applies to all Uniloy IBS machines which have upper and lower cross arms with tie bar nuts on both sides of each cross arm. For clarity in this instruction, we will refer to:

- * The lower tie bar nuts on the upper cross arms and the upper tie bar nuts on the lower cross arms as the inner tie bar nuts.
- * The upper tie bar nuts on the upper cross arms and the lower tie bar nuts on the lower cross arms as the outer tie bar nuts.

- 1.) Remove the mold and core rods from the clamp area.
- 2.) Close the clamps and turn off the pump.
- 3.) Remove the front and rear safety cage assemblies.
- 4.) Loosen the set screws in all of the inner and outer tie bar nuts.
- 5.) Loosen the outer tie bar nuts on the upper cross arm using a four foot wrench and a six foot pipe (for leverage).
- 6.) Remove the outer tie bar nuts, then pull off the upper cross arm.
- 7.) Remove the outer tie bar nuts on the lower cross arm and remove the tie bars as you take off the inner tie bar nuts.
- 8.) Install the new tie bars. We recommend that when you need to change one tie bar on either a blow or injection clamp, you change the other tie bar at the same time in order to match their life expectancies.
- 9.) Re-install and tighten the inner and outer tie bar nuts on the lower cross arm only.
- 10.) Install the upper cross arm with its inner and outer tie bar nuts. Do not tighten any of these tie bar nuts yet.
- 11.) Stone off the surface of the table and the surface of the upper platen using a flat surface stone and kerosene.
- 12.) Set the stack height from the surface of the table to the bottom surface of the platen at 9.930" (+.000" / -.030").
- 13.) Tighten 1 of the 2 outer tie bar nuts to the upper cross arm using either a torque wrench or a four foot wrench and a six foot pipe (for leverage). At this point 3 of the 4 sets of tie bar nuts have been tightened.
- 14.) Set up a dial indicator base assembly and set the indicator plunger up to the under side of the platen. Move the indicator along the length of the platen from left to right (from tie bar to tie bar). Be sure to keep the plunger on a straight line between the tie bar centers, as we want to eliminate any side to side measurements which could lead to false adjustments. Using the inner and outer tie bar nut set, which are loose on the upper cross arm, adjust the platen to be parallel with the table within .002".

15.) Tighten the last set of inner and outer tie bar nuts on the upper cross arm with either a torque wrench or a four foot wrench and a six foot pipe (for leverage). Indicate the length of the platen again to make sure that movement has not occurred. Make necessary adjustments as required.

16.) For your information, if you have a torque wrench available, the correct specifications are:

* 6,000 ft./lbs for all injection clamps

* 2,000 ft./lbs for all bow clamps

17.) With the dial indicator, check the platen front to back (perpendicular to the tie bar center line) for parallelism relative to the table. The goal is to achieve parallelism within .002". In order to make necessary adjustments, loosen the four bolts which secure the platen to the upper cross arm and insert a strip of steel shim. Be sure that the shim is at least 1" wide and that the entire length of the shim is in contact with the surface of the platen. It may be necessary on some machines to notch the shim so that the bolts securing the platen are avoided. Tighten the bolts and re-indicate.

18.) At this point, the total parallelism along the length and width of the platen relative to the table is within .002".

Note: As time progresses and you are doing preventative maintenance inspections and/or mold changes, it is generally acceptable if the parallelism along the length of the platen stays within .010" and within .005" along the width of the platen relative to the table.

19.) Reinstall the front and rear safety cage assemblies.

20.) For injection clamps only, if a torque wrench is not used, preload the tie bars as described in this step. For blow clamps, skip to step 21.

Note: Extreme caution must be exercised in this operation and should be completed by a trained technician who is familiar with the functions of the machine, assisted by three helpers.

20.1) Install a 10" tall spacer block which covers a minimum area of 8" x 15" under the clamp area (a mold could be used).

20.2) Close the clamp and open the guard.

20.3) Make certain all of the set screws on all of the inner tie bar nuts are still loose.

20.4) Manually energize:

* SV-21 (3,000 psi), SV-5 (clamp close), and SV-21A (outboard cylinder pre-fill valves) for machine models 90J, 128-3, and 150-3.

* SV-27 (3,000 psi), and SV-21 (outboard cylinder pre-fill valves) for machine models 122-3, 135-3, and 189-3.

* SV-21 (3,000 psi) and SV-5 (clamp close) for machine models 55 and 75-3.

* SV-27 (3,000 psi) and SV-5 (clamp close) for machine models 70 and 88-3.

20.5) The tie bars will stretch and the four inner tie bar nuts will pull away from their cross arms. Tighten the inner nuts using a four foot wrench with a six foot pipe and two men.

20.6) Release all valves, open the clamp, remove the 10" spacer, close the clamp and re-indicate the length and the width of the platen to insure that the platen is parallel to the table within .002". If the parallelism is good, proceed to step 22.

20.7) If the correct parallelism has not been achieved, reinstall the 10" spacer block, re-energize the valves and loosen 1 inner nut on the upper cross arm. Remove the spacer, lower the clamp and make necessary adjustments. Re-tighten the outer tie bar nut which had been loosened and repeat steps 20.1 through 20.6 until parallelism is achieved.

21.) Tighten all of the set screws in all of the inner and outer tie bar nuts.

If you have any questions regarding this procedure, please contact the Uniloy Technical Service Department.