

**INSTRUCTIONS FOR ASSEMBLY and ADJUSTMENT
of CHRISTIAN BECKER CHAINOMATIC BALANCES**

MODELS: AA-1, AB-2, AB-3, AB-4, AB-5 and AB-9

IMPORTANT

Read Directions Very Carefully Before Assembling the Balance.

CAUTION: Every balance is subjected to a most rigid inspection before leaving the factory, and if these instructions are carefully followed no difficulty should be experienced in assembling the balance. No parts should be forced and all parts, particularly the beam, handled with extreme care.

UNPACKING

Beam, bows and all small, loose parts are packed in separate box. DO NOT THROW ANY PACKING MATERIAL AWAY UNTIL THE BALANCE IS PROPERLY ASSEMBLED.

ASSEMBLING

- 1- After carefully removing balance from shipping container, place the balance on a firm table or stand, free from excessive vibration and protected from unequal heat and direct rays of sun.
- 2- Level balance by means of levelling screws.
- 3- If the balance has a magnetic damper, remove all packing material and the steel keeper plate from the magnet assembly and withdraw magnet to extreme left (inoperative position).
- 4- Lower the arms for supporting the beam by turning the center knob on the front of the case counter clockwise.
- 5- Withdraw rider carrier to extreme right.

CAUTION: During the following operations, extreme care should be taken not to damage the knife edges.

- 6- Place the beam in position over the beam support points, being certain the chain carrier is to the right. This is most readily accomplished by carefully holding the needle in the left hand a few inches below where it joins the beam and by inserting the right end of the beam behind the chain dial. Hold beam over the location points and slowly arrest the arms by turning the center knob clockwise. Release beam to its support points.

7- The indicator should now point at the center line on the index plate. On balances with the movable index (Auto-Dex), bring the center line of the index into coincidence with indicator by applying a slight outward pressure on the right knob on the front of the case. Then holding this pressure on the knob, slowly turn until the clutch engages and the index moves. When the knob is released, the clutch will automatically disengage. If, in assembling the balance, the indicator becomes bent, remove the beam before attempting to straighten it. When the balance leaves the factory, gravity weight on the indicator is set for rated sensitivity and should NOT be disturbed.

8- Place the stirrups in position with hook openings to the front. The stirrup marked with one mark should be on the left side and the one marked with two marks on the right side. The marks should always face the operator. Be certain the hook is properly positioned and centered on the stirrup frame. There is a special notch at the center of the frame to accommodate the hook eyelet.

9- Insert pan arrest plungers in grommets or plunger receptacle. One mark on the stem of the plunger indicates the left plunger, while two marks on the stem indicate the right plunger. Be certain the plunger stems are clean and that no dust or dirt has accumulated in the plunger receptacles. Dust or dirt is readily removed by inserting a pipe cleaner, or similar device, into the plunger receptacle.

10- Turn the left knob (pan arrest knob) counter clockwise. Hang the bows on the stirrup hooks. The bow with one mark near the suspension point should be on the left and the one with two marks on the right. The marks should always face the operator. Turn pan arrest knob clockwise.

11- The pans should now rest equally on the pan arrest pads. If not in the correct position, the pointer will have a lateral "kick" when the beam is dearrested. To remove this kick, equalize the height by turning the adjustable screws in the pan arrest plungers. This equalization of height may be accomplished by lowering the higher pad slightly and by raising the lower pad slightly.

12- Insert the crank (which will be found in the beam box that accompanies the balance) in the lower right side of the case.

INSTRUCTIONS FOR ASSEMBLING DIAL CHAIN

NOTE: The dial chain assembly is composed of three parts.

- 1- The weighing chain (with stirrup attached)
- 2- The tension weight
- 3- The tracking chain (with cylindrical plug attached)

- 1- Assemble weighing chain to beam.

Hang chain stirrup from chain carrier knife on right side of beam - white dot facing towards operator.

- 2- Assemble tracking chain to chain dial
 - a- Turn dial counter clockwise as far as possible. (See attached drawing).
 - b- Insert tracking chain plug into hole on periphery of wheel.
 - c- Thread chain over chain guide located at left end of top cover; add weight to chain to maintain chain tension, hanging either hook of weight on diamond-shaped link.
- 3- Run tension weight up and down several times to relieve any twist which may exist in chain.
- 4- Run small straight object behind weighing chain to remove twist.
- 5- Connect bottom end of weighing chain to tension weight - hang diamond shaped link on tension weight hook.

NOTE: Any adjustment of chain carrier should not be necessary and should never be attempted without detailed directions from the Christian Becker Division.

Place beam weight in 0 notch of beam. With the balance open allow about one hour for all parts of the instrument to acquire the room temperature. Dearrest the balance to determine if it is in equilibrium. If the balance is not in equilibrium, adjust with the star nut on the end of the beam until the indicator is within two or three divisions of 0 on the index plate. Rotate the chain dial until the balance is in equilibrium. Bring the 0 of the vernier into coincidence with the 0 of the dial by turning the chain dial vernier adjuster knob at the top right side of the case. This adjustment for equilibrium can be done quickly while the beam is swinging and the case is closed, resulting in a great saving of time.

USE OF THE MAGNETIC DAMPER

- 1- Examine the magnet by looking down thru the top of the case and remove any dust or foreign matter from its gap.

- 2- Engage the magnetic damper by moving it towards the right with knob on the left side of the case.
- 3- The degree of damping can be regulated by having a greater or lesser portion of the vane in the gap of the magnet.

DOOR TENSION

To adjust the tension on the door, use the knob on the lower right hand side of the case. By turning this knob either to the left or right, tension may be increased or decreased to suit the individual operator. Please note that the tension knob must be pulled out until the locking pin is free of the case before the knob can be rotated.

SPECIAL INSTRUCTIONS

- 1- The balance is now completely assembled. The attached instructions may be of use at a later date. It is recommended that the complete instructions be filed for reference.
- 2- IMPORTANT: Please mention style and serial number when corresponding with us. This information is located on the nameplate on the rear of the balance.

CHRISTIAN BECKER DIVISION
THE TORSION BALANCE COMPANY