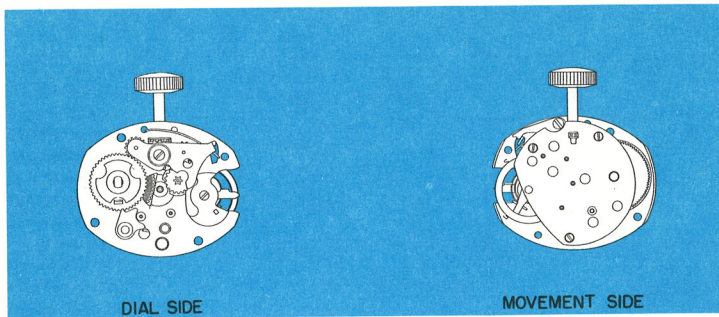


# TIMEX model 78

8 by 9½ lig.  
18.03 by 21.44 mm  
.710 by 844 in.

## the TIMEX model 78 movement



The TIMEX Model 78 is an 8" x 9½" movement featuring "V-conic" bearings system and rugged two plate design.

Whereas most watches utilize bridges, TIMEX has constructed the Model 78 movement with full plates to take advantage of the accuracy inherent in this type of design. This accuracy insures complete interchangeability for the escapement and gear train without the need for selective fitting and adjustments which complicate the repair of most watches.

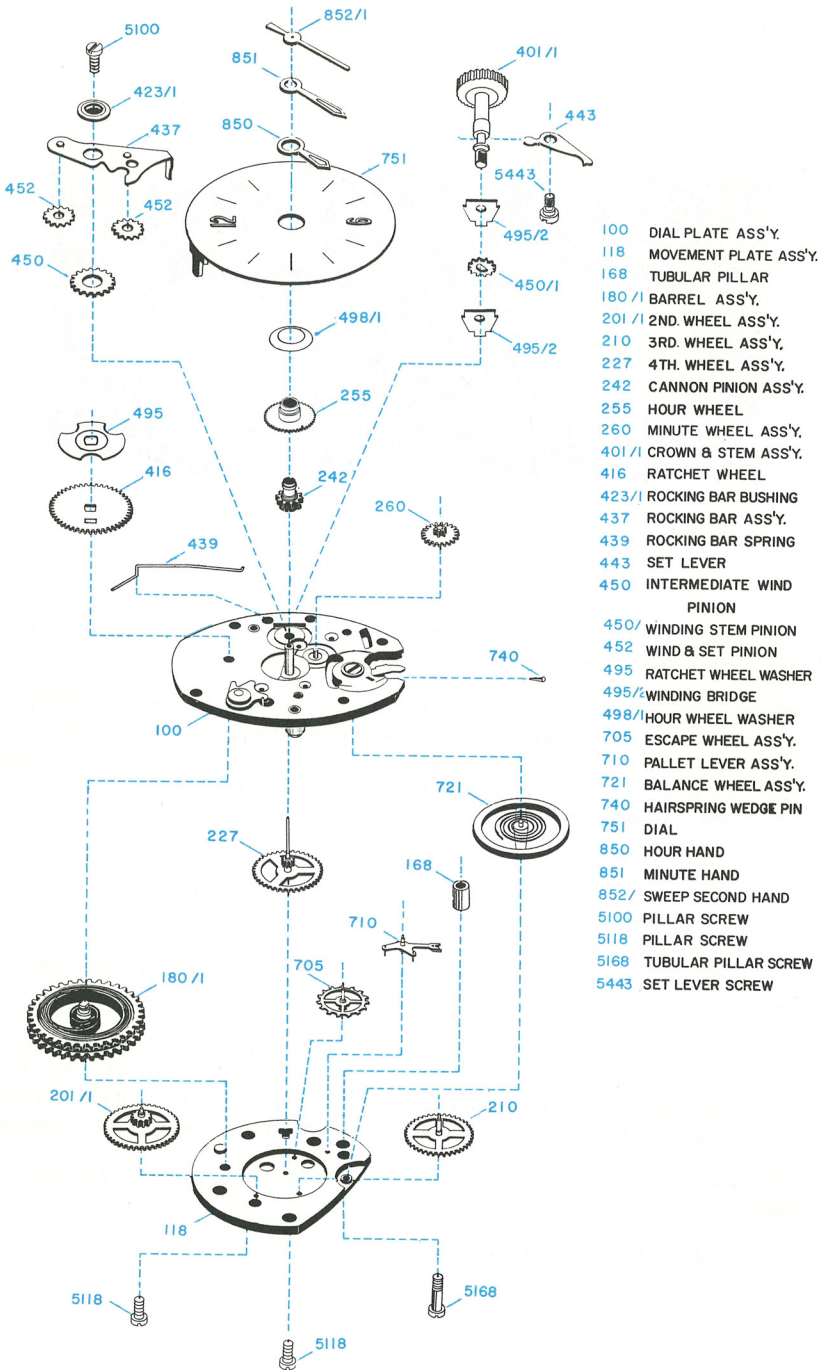
To clean the TIMEX Model 78 it is necessary to remove only the sweep second hand, dial, ratchet wheel stem and balance. The illustrations on Pages 78.3 through 78.5 show proper procedures. TIMEX has found through long and careful research that the best method of cleaning is with only the above mentioned parts removed. The cleaning fluid, while removing any contamination from the movement will also remove oil from the gear train, pivots and holes.

If further dismantling is required, removal of the movement plate will expose the gear train and associated parts. Reassembly should start with the dial plate, exercising normal care to insure proper positioning of pivots in their respective holes. The exploded view of the movement on Page 78.2 will guide reassembly.

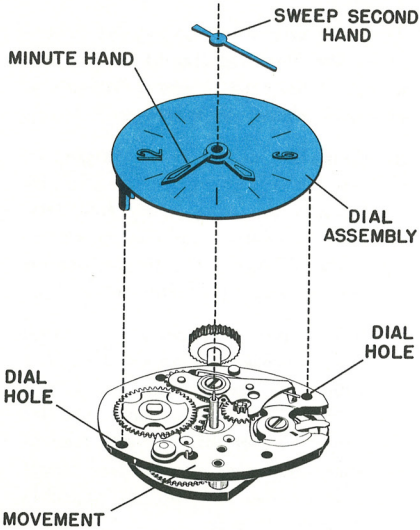
Cleaning and reiling instructions for the Model 78 movement are given on Page 78.6.

Reassembly techniques are shown on Page 78.7.

# the TIMEX model 78 movement (exploded view)

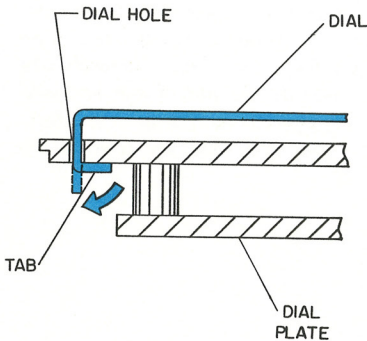


# Disassembly of movement for Cleaning ( model 78 )

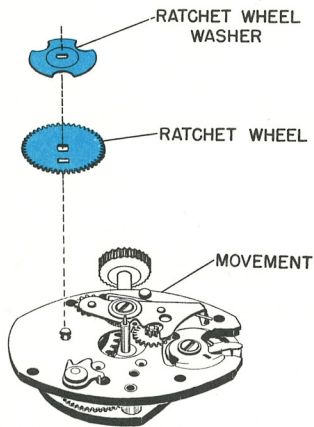


## Removing the Dial and Hands

- a) Remove the sweep second hand. do **not** remove the minute or hour hand.
- b) The dial is clamped to the movement by means of two tabs which are bent through dial holes located on the dial plate.
- c) Once the dial is off the movement, there is no need for further disassembly of the dial assembly for cleaning unless severe contamination is present on the friction and cannon pinions. Should further disassembly be necessary, removal of the minute hand will free the friction and cannon pinion assembly. The friction pinion is held in the cannon pinion by a snap fit.



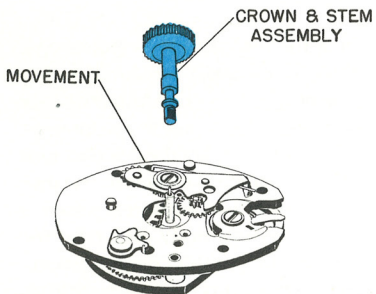
## Disassembly of movement for Cleaning Cont'd.



### Removing the Ratchet Wheel

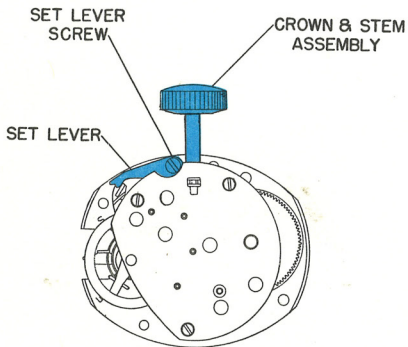
The next step in preparing the movement for cleaning should be the removal of the ratchet wheel and ratchet wheel washer. Proceed as follows:

- a) Grasp the crown in the fingers of one hand and release the click by holding the click away from the ratchet wheel. Let the crown revolve slowly in the fingers, being careful not to let the crown slip.
- b) When the mainspring has been fully let down, remove the ratchet wheel washer and ratchet wheel. Note: To remove the ratchet wheel washer, lift one side free of the lancing in the ratchet wheel and revolve the washer approximately  $\frac{1}{4}$  turn.

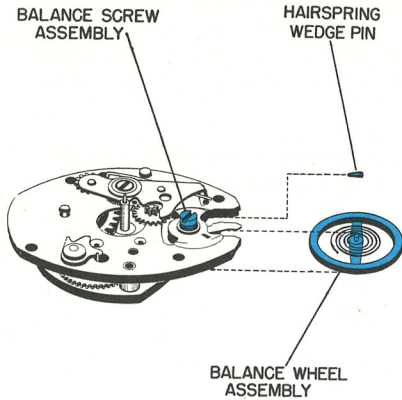


### Removing the Crown and Stem

To remove the crown and stem assembly, invert the movement so that the movement plate is facing you. Turn the set lever screw approximately one turn and lift the tail of the set lever out of engagement with the stem. The crown and stem can now be removed.



## Disassembly of movement for Cleaning Cont'd.

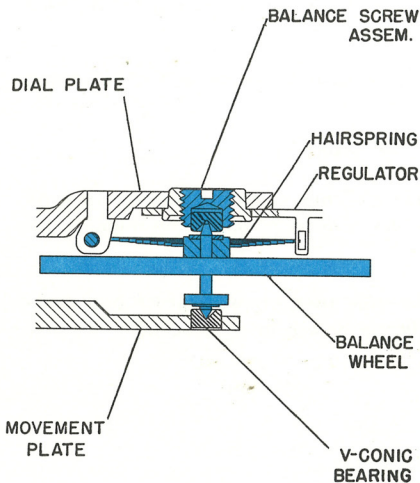


### Removing the Balance Wheel

Two "V-conic" jewels are used as bearings for the balance staff on the TIMEX Model 78 movement. The bearing on the dial plate is mounted in a screw so that fine endshake adjustment is possible.

Removal of the balance wheel assembly should be carried out in the following manner:

- a) Remove the hairspring wedge pin, being careful not to distort either the pin or the hairspring.
- b) Rotate the balance wheel slowly until the hairspring tail is free of the hairspring wedge pin bracket and the regulator.
- c) Loosen the balance screw assembly (counter-clockwise direction) using a suitable screw driver, until the end of the balance staff is free of the "V-conic" bearing. During the loosening of the screw, only minimum downward pressure should be applied with the screw driver, as excessive downward pressure could seriously damage the balance staff points.
- d) Carefully remove the balance assembly.



## Cleaning the Model 78 Movement

After removal of the balance wheel, and the other parts mentioned in Pages 78.3 through 78.5, the movement is ready to be cleaned.

If a cleaning machine is used, place the movement in the basket with the dial plate down to insure proper drainage of the fluid from the mainspring barrel. It should be well swirled in the cleaning fluid after which two sets of rinsing fluid should be used. The final cleaning fluid must be absolutely clean. After cleaning, the movement should be thoroughly dried.

If a cleaning machine is not available, the same procedure should be followed manually, by grasping the movement firmly around the stem and shaking it in the cleaning and rinsing fluids to insure that the fluid will pass through the entire mechanism.

The balance assembly should be cleaned separately in a small jar to prevent damage to the hairspring.

Only standard watch cleaning solutions should be used throughout.

## Lubricating the Model 78 Movement

The movement should be re-oiled in the normal manner using only high grade watch oil (oil used in factory assembly is Elgin M56b). The mainspring is permanently lubricated with a solid coating which is not affected by normal cleaning solutions and should, therefore, **not** be oiled.

The upper pivot of the escape wheel can be oiled through the holes in the minute wheel.

The "V-conic" bearings should be oiled  $\frac{1}{2}$  to  $\frac{3}{4}$  full before replacing the balance wheel.

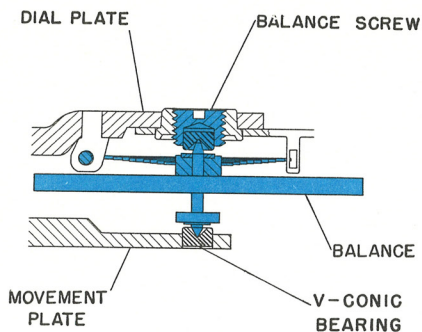
Oil both the top and bottom sides of the intermediate wind pinion and wind and set pinions.

Oil the intersections of the rocking bar and set lever.

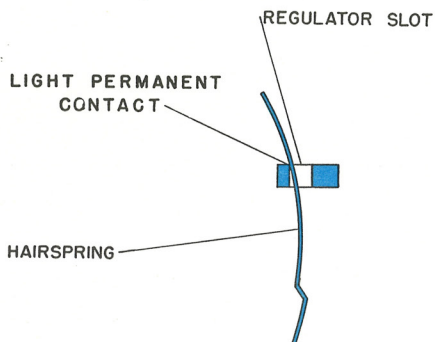
If the friction pinion has been removed from the cannon pinion and cleaned, oil the friction pinion before re-assembly into the cannon pinion. The impulse pin should be oiled at its working surface.

Rubber gaskets used on crowns, such as the type used on waterproof and dust-proof models, should be lubricated with silicone grease or silicone oil.

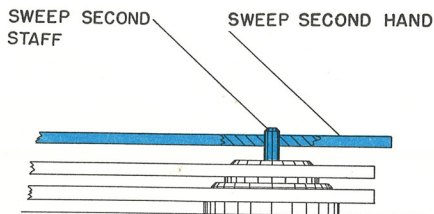
## Reassembly of the model 78 movement



Replace the balance wheel carefully into the movement by tilting the dial side pivot (hairspring side) then, the movement bearing side pivot into the "V-conic bearing." Adjust the balance screw enough to hold the balance in place. By rotating the balance wheel, insert the hairspring into the regulator slot and hairspring wedge pin bracket. Before repinning the hairspring, make certain the impulse pin is within the slot in the fork of the pallet lever. Repin the hairspring making sure that the wedge pin is straight and true, as any distortion to the pin could interfere with the normal "breathing" of the hairspring. The endshake is now finally adjusted using caution to apply only minimum downward pressure to the balance screw as excessive pressure could damage the points of the balance staff.



Inspect the hairspring to be certain that it is properly adjusted. As shown by the diagram, the hairspring contact should be in light permanent contact with the inside edge of the regulator slot. The hairspring should not leave the inside edge of the regulator slot at any time during the complete maximum oscillation of the balance.



When replacing the dial assembly, set the hour and minute hands to 12:00 before bending the tabs to secure the dial. If the minute hand has been removed, replace it on the dial assembly together with the friction and cannon pinions **before** the dial assembly is put on the movement.

Replace the sweep second hand by driving it just below the end of the sweep second staff as shown in the diagram. Be certain the sweep hand is set below the chamfer on the top of the staff.