

Herschede/Revere  
Electric Mantel Clock Manual

# Revere Clocks



## SERVICE MANUAL

THE REVERE CLOCK COMPANY  
CINCINNATI 6, OHIO

ROGER  GORDON  
— Fine Clockmakers Since 1976 —



# Revere Clocks

## SERVICE MANUAL

### INTRODUCTION

These movements are carefully made and assembled by expert clock-makers. After thorough inspection a complete running test is made to observe any defects. They are then mounted into cases and chime hammers are adjusted. The next step is a general inspection of the casing, dial and parts entering into the mounting of the movement into the case. The clock is then given another running test and a careful final inspection before it is packed. Every effort is made to ship each clock in the best possible condition.

Occasionally, due to rough handling, it is possible that some part may become disarranged and need a little adjustment. Each clock should be tested by the retailer before he delivers it to the consumer; at least, it should be plugged in and the hands moved around for a few hours allowing it to chime at each quarter. When the retailer has alternating current in his store he should endeavor to run each clock at least a few hours and if possible 24 hours. Careful attention should be given to the instruction on inside of back door before attempting to set up the clock.

When unpacking mantel clock remove with care the wood block that holds the chime bars secure while clock is being shipped. If the clock operates satisfactorily by moving the hands forward the sound of the chime should be particularly noted. If they do not sound clear, see that all hammers are  $\frac{1}{8}$ " away from the chime bars and are directly over the center of the bar. All bars should be straight in line. If a bar should touch the case when vibrating bend it down slightly by pressing gently at the point where bar joins chime holder. Bend sideways if bars should touch each other.

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# M A N T E L C H I M E M O V E M E N T

No. 100

This "Westminster Chime" clock is operated by a Telechron synchronous motor. The rotor unit is hermetically sealed, contains oil and never needs oiling. The motor is very easily removed, if it should ever be necessary, by removing movement from the case, loosening the two fastening screws found in back of the coil and then loosening the set screw on the motor gear which is on the motor shaft.

## REMOVING MANTEL CLOCK MOVEMENT FROM CASE

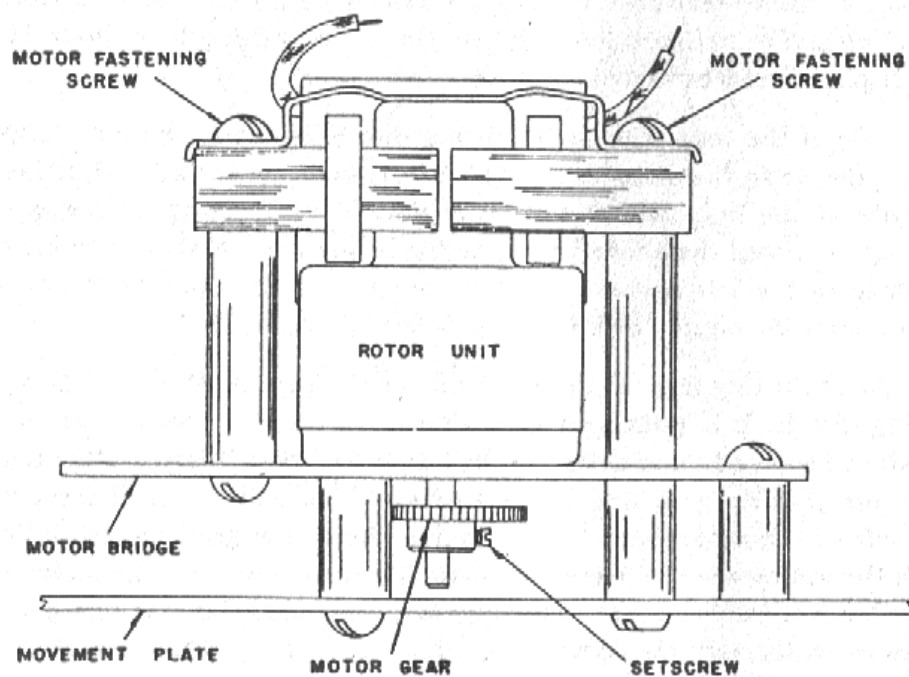
Remove the bezel and glass assembly by pressing fastening stud on inside front of case and pulling assembly from front of case which is held on to case with friction bushing.

Remove second hand, which is also held on by friction. Remove hour and minute hands.

Remove dial which is held in place by four small screws on its outer rim.

Untie knot in electric cord where it enters rear of case. Newer type cases have a slot in lower left corner of back door frame. This allows the electric cord and movement to be removed from the case together.

Loosen movement from case by removing the three movement support screws. These screws are found in the front of the case after the dial is removed. While removing screws hold the movement through the rear door to prevent it from falling to the bottom of the case, thus injuring the chime hammer attachment and chime rods. Hold hammer levers up so as not to catch on chime rods. Remove movement from case.



*Figure 1*

# EXPLANATION OF C h i m e MOVEMENT AND CONTROL

*See Figure 2, Page 5*

The chime is controlled by four pins, A, B, C and D on lifting disc E. These pins operate the first, second, third and fourth quarter chimes. Pins A, B, C and D move the lifting lever F to the right, permitting the shifting lever hook H to drop over the shift pin J which is on the chime gear arm V. The lift should be far enough to permit a  $\frac{1}{8}$ " clearance between the shift pin J and the shifting lever hook H. Each pin should be tested.

One of the four pins on the lifting disc E is nearer the outer rim of the disc than the other three. This pin D operates the self-adjusting feature at the hour which will be explained later. If the lift is not enough to afford the above clearance the lifting lever F should be bent slightly to the left and if too much, bend it to the right at the end that comes in contact with lifting pins A, B, C, and D.

As the lifting lever F drops off one of the pins A, B, C and D on lifting disc E, it is pulled back to almost its original position by the small coil spring L, and since the shifting lever hook H has hooked the shift pin J on the gear arm V, the gear arm V is pulled with it toward the left of the movement, thus engaging the chime gear arm gear W with the center wheel Y which is constantly under power. The shifting lever hook H holds onto the shifting pin J and holds the gear arm gear W in mesh through the complete chiming at each quarter. The shifting lever hook H is released by the chime release lever K, which in turn is operated by the locking disc N. The locking disc N has four pins, 1, 2, 3 and 4 around its rim. These pins 1, 2, 3 and 4 raise the release lever K which releases the shifting lever hook H, allowing the clock to stop chiming. Bend top arm of K upwards for  $\frac{1}{8}$ " clearance over pin J. The locking disc N determines the proper quarters on the chimes by the distance between pins 1, 2, 3 and 4. The locking disc N also has around its outer rim four steps O, P, Q and R. These steps are to hold the chime gear arm gear W in mesh with center wheel Y after the shifting lever hook H has released and until the chime has been completed. The chime gear arm V has another pin M that protrudes through the movement plate at the rim of the locking disc N. When the gear arm V is released from the shifting lever hook H, pin M will hit one of the steps O, P, Q or R on locking disc N and then drop off the step thus releasing the chime gear arm V.



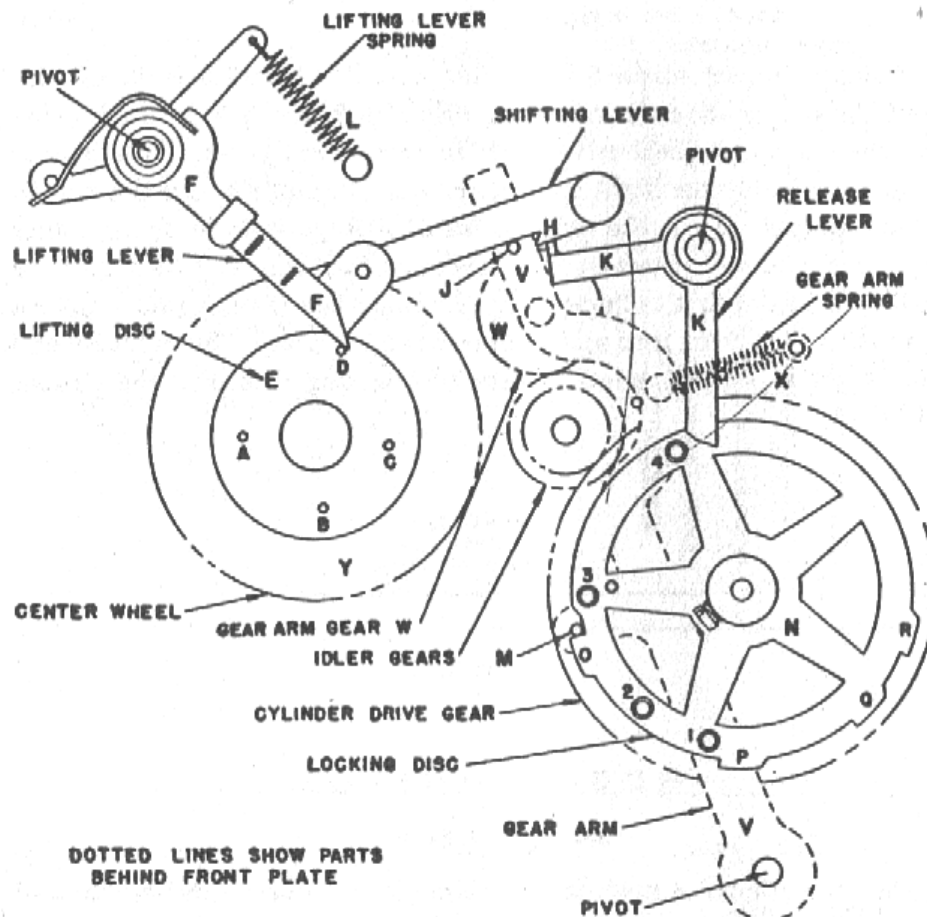


Figure 2

## SELF ADJUSTING FEATURE

Step O on the locking disc N has a depression in front of it. This step O represents the hour or fourth quarter chime. When pin M on gear arm V is in the depression at the fourth quarter step O, it takes a longer movement of the lifting lever F to disengage pin M from the depression than it does to disengage it from steps P, Q and R. Pins A, B and C will not disengage pin M when it is in the depression at step O. Pin D on lifting disc E will give the lifting lever F a longer throw and is the only pin that will permit the shifting lever hook H to drop behind the shift pin J when pin M on gear arm V is at the hour step O on locking disc N. This is the self-adjusting feature as the fourth quarter bars will only chime at the hour.

## SETTING CYLINDER

*See Figure 3, Page 7*

Loosen the set screw 5 in locking disc N. Insert a piece of wire about the size of the hole in locking disc N into the hole in the locking disc, then through the bushed hole in movement plate. This hole is found to the extreme right side of movement plate under the rim of locking disc N. Turn the cylinder until a large hole in the cylinder drive gear is found. Push the wire through this hole and then into the small hole in the first cylinder disc. Keeping the wire in place tighten set screw 5 in locking disc and then remove the wire. The cylinder will then be set in correct relation with the locking disc and the chimes will be set.

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## HOUR CONTROL

*See Figure 4, Page 7*

As the cylinder is turning and chiming the fourth quarter, the tail of the hour rack 1 hits the square rack operating stud 2 and the hour rack 4 is drawn out from behind the hour disc thus exposing the teeth on the hour rack 4. The hour rack 4 is locked into operating position by the rack support lever 3. When the last note of the hour chime has been struck, the first tooth on the hour rack 4 will lift the hour lever 5 on the chime hammer attachment. The two hammers that strike the hour will continue to strike until the correct hour has been struck. The instant the last strike of the hour has been struck, the rack support lever 3 will engage pin 6, 7 or 8 (as noted below) in the hour control wheel and release the hour rack 4 and allow it to fall back into its original position and allow the teeth on the hour rack 4 to clear the hour lever 5 on the chime hammer attachment. The hour control wheel has three pins, 6, 7 and 8 equally spaced and equal distant from the rim. The hour control wheel makes one revolution every 36 hours. Each pin (6, 7 and 8) operates the rack support lever 3 for a period of twelve hours. The pin 6, 7 or 8 that operates the rack support lever in any particular hour is advanced the same distance each hour thus allowing the rack support lever 3 to hold the hour rack in operating position for one more tooth each hour.





## SETTING THE HOUR

See Figure 5, Page 8

Turn the hand set knob until the lifting lever F just drops off hour pin D on lifting disc E. Loosen the two screws 13 in hour setting wheel 12. This will allow the hour control wheel to spin free. On the back of the cylinder bridge is a bushed hole (hour setting bushing). Insert a wire about the size of hole through the hole and then turn the hour control wheel until the wire enters a hole in the hour control wheel. Without removing the wire, tighten the two screws 13 in hour setting wheel 12 and then remove the wire. The hour will always be set correctly.

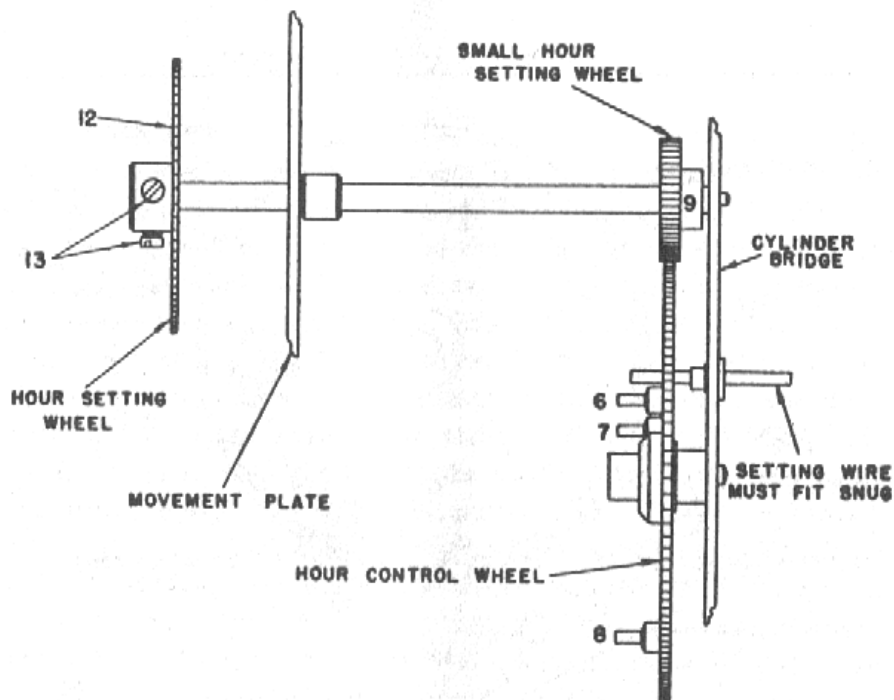


Figure 5

## **IF CLOCK FAILS TO CHIME**

*See Figure 2, Page 5*

Lifting lever F may not throw over far enough to let the shifting lever hook H drop behind shifting pin J. Bend lifting lever slightly to the left where it comes in contact with pins A, B, C and D on lifting disc E. Each pin should be tested. Lifting lever spring L may be broken or too weak and will not pull chime gear arm gear W into mesh with center wheel Y. Lifting lever spring L should be strong enough to overcome the gear arm spring X.

Cut off two or three coils to make spring L stronger or replace with new spring.

Pin A, B, C or D may be broken from lifting disc E. Pin must be replaced or a new minute tube assembly, containing lifting disc, inserted — in which case minute hand must be reset for drop off.

The meshing of the chime gear arm gear W with the center wheel Y should be about  $\frac{2}{3}$  of the tooth so they will not bind. If the gears are meshing too deep, by using pliers bend the top of the chime gear arm V toward the banking pin which is found on the movement plate at the top of the chime gear arm V. If the gears do not mesh deep enough, bend the top of the gear arm away from the banking pin.

## **IF CLOCK CONTINUES TO CHIME**

*See Figure 2, Page 5*

Chime gear arm spring X may be too weak or broken and will not pull the gear arm gear W out of mesh. Strengthen by cutting off two or three coils or replace with new spring.

The chime release lever K may not be lifting high enough to release the shift lever hook H. Bend the top arm of the release lever K upwards for clearance.

A shaft or gears in mesh may be binding. Be sure that all shafts, bearings and gears in mesh are free.

A pin 1, 2, 3, or 4, in the locking disc N may be broken. Replace with new pin or a new locking disc.

## **IF CLOCK STOPS ON CHIME**

Rotor unit may be weak. Must be replaced. See Figure 1, Page 3.

The gear arm gear W may be meshing too deep with the center wheel Y. Bend the top of the gear arm V toward the banking pin. See Figure 2, Page 5.

While the clock is chiming the hour the hour rack 4 is being thrown out into operating position to strike the hour. If the hour rack tail 1 is not polished enough it may bind as it slides along the rack operating stud 2. Polish the tail of the rack 1 and make sure that the rack operating stud 2 has no burr. See Figure 4, Page 7.

## **IF CLOCK FAILS TO STRIKE**

*See Figure 4, Page 7*

The square rack operating stud 2 may be broken off and not allowing the hour rack 4 to be placed in operating position. Stud must be replaced.

## **IF CLOCK CONTINUES TO STRIKE**

*See Figure 4, Page 7*

The clock may continue to strike but it will never strike more than twelve times in any one hour. If the clock should strike twelve when it should strike another hour, check and see if one of the pins, 6, 7 or 8 in the hour control wheel has broken off. If pin is broken the clock will strike twelve every hour for a twelve hour period.

Replace with new hour control wheel.

## **IF CLOCK STOPS ON STRIKE**

Rotor unit may be weak. Unit must be replaced. See Figure 1, Page 3.

Strike hour lever 5 may lift the strike hammers too high and they may hit the hand set shaft. Bend the hour lever 5 down at the point where it lifts the two hammers and then take up the extra slack by bending the banking spring in. See Figure 4, Page 7.

There may be a bind in the cylinder drive gear or a rough tooth on one of the cylinder discs. See Figure 3, Page 7.

## **Setting-Up Directions**

### **MANTEL CLOCK**

Release chime bars by removing cord at bottom or wood block. Release chime hammers by moving hammer guard straight down.

This clock operates only on 110 volt, 60 cycle (or that cycle marked on motor) alternating current.

Plug in socket and second hand will move if current has been supplied. Set hands to CORRECT time by moving minute hand forward. Chimes and hour strike will automatically adjust themselves at next hour. Chimes sometimes do not operate when adjusting themselves. Set hands by using knob in back of case.

Chimes can be silenced by lever at bottom of movement inside of case.

**CAUTION** — Do not place any loose object in the bottom of case as it will set up a vibration when chimes are operating.

To remove our new featured bezel and glass, press fastening stud on inside front of case.



Herschede Clock Repair Center USA  
320 West Oak Street  
Titusville, PA 16354

[www.herschedeclockrepair.com](http://www.herschedeclockrepair.com)

[info@herschedeclockrepair.com](mailto:info@herschedeclockrepair.com)