



# VEEDER-ROOT INSTALLATION AND OPERATING INSTRUCTIONS

Technical Manual  
Issued: 1/89  
Supersedes: 3/78

## SERIES 1239, 1378 and 1876 PREDETERMINING COUNTERS

Manual No. 215541

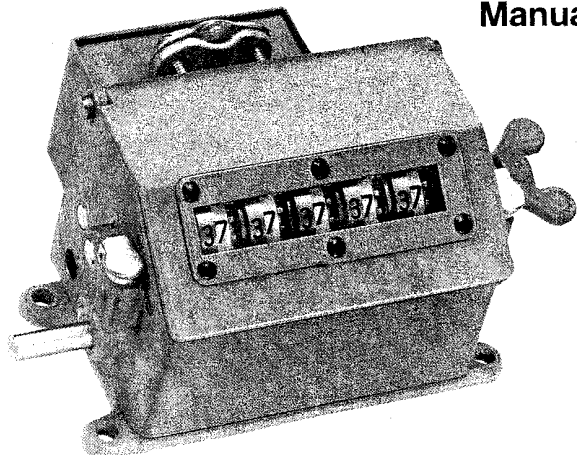


Figure 1. Series 1239 Predetermining Counter.

**Note:** When a vertical bar | appears adjacent to text or illustrations, information has been added or changed at the last issue date.

**I. GENERAL.** The counter adds to a predetermined number that is set onto the gray predetermining rings. When the count on the back wheels reaches the preset number, the output switch activates.

The Series 1239, Figure 1, and 1876 have a geared drive and add one count for a specified number of drive shaft revolutions in specified rotation. They will not subtract past zero. Series 1239 has an electrical switch. Series 1876 has an electrical switch, positive reset with interlock and lintproof construction.

The Series 1378 counter has ratchet drive and adds one count for each drive shaft actuation through an arc of 21° max. in specified rotation.

**Note:** Consult Veeder-Root on any unusual application, installation or possible modification of this basic design.

### II. SPECIFICATIONS.

**Speed:** Geared: 2500 rpm or 5000 cpm whichever is limiting.  
Ratchet: 500 cpm.

**Torque:** Max static 4 oz-in. for 1:1 gearing.

**Contact Capacity:** Manufacturer's switch rating: 1/2 hp at 230 VAC, 20 amp at 115 VAC, 15 amp at 230 VAC, 3 amp at 460 VAC, 0.4 amp at 115 VDC, 0.2 amp at 230 VDC. SPDT switch.

**Reset:** Manual. Resets to preset number. Standard models have wing nut reset. Crank, clock key, or 1-1/4 in. dia knob are optional for certain models.

**Lubrication:** Periodic, depending on use and as established by user.

**Operating Temperature Range:** 32° to 140°F (0° to 60°C).

**Net Weight:** 2 lb, 9 oz (1.16 kg).

### III. INSTALLATION.

**WARNING:** IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE.

1. **MOUNTING.** This counter must be mounted in a normal upright position to provide proper lubrication flow from the oil cups. It may be installed in almost any nonexplosive environment, free from severe vibration, extreme temperature and excessive relative humidity.

**CAUTION:** IF INSTALLATION IS TO BE IN A VOLATILE, COMBUSTIBLE OR EXPLOSIVE ATMOSPHERE, THIS PRODUCT MUST BE HOUSED IN AN APPROPRIATE ENCLOSURE AS REQUIRED FOR USE IN SUCH ATMOSPHERE BY NATIONAL ELECTRICAL CODE AND/OR ANY LOCAL APPLICABLE STANDARDS.

2. **WIRING.** Connect leads as shown in Figure 2. The terminals of this switch are marked OPEN and CLOSED, plus a third unmarked COMMON terminal.

**Note:** Certain applications could require shielding. Consult Veeder-Root for assistance on unusual applications.

A. To make a contact at a predetermined number, wire leads to the open and common terminals.

B. To break a contact at a predetermined number, wire to the closed and common terminals.

**Note:** When the predetermining counter is supplied with the switch on the bottom, the wiring of the switch is the opposite of that marked on the switch.

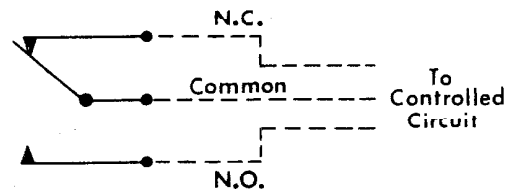


Figure 2. Output Switch Schematic.

### IV. OPERATION.

**WARNING:** WHEN THE COUNTER IS USED TO CONTROL A MACHINE OR PROCESS WHERE PERSONAL INJURY OR EQUIPMENT DAMAGE MIGHT OCCUR AS A RESULT OF FAILURE OF ANY ELECTRIC OR OTHER COUNTER FUNCTION, YOU ARE URGENTLY RECOMMENDED TO INSTALL SAFEGUARDS WHICH WOULD PROTECT THE OPERATOR AND/OR MACHINE IN THE EVENT OF ANY UNEXPECTED OPERATION OF THE MACHINE OR PROCESS.

### 1. TYPICAL SETTING OF THE PREDETERMINING NUMBER.

A. Reset the black wheels to all zeros by turning the reset knob or handle. Some models have a red lever inside the case that must be pressed down to release the reset.

**Note:** Black counting wheels must all read zero before setting a new predetermining number.

B. Determine the predetermining number to be set on the counter. For this example, 12345 will be used.

C. Lift the cover and hold open. Press the first gray predetermining ring toward the right, Figure 3. Rotate the ring until the number 5 is aligned with the zero of the black right-hand counting wheel. Release the gray ring and rotate it slightly to be sure it is properly seated.

D. Using the same method, continue to each ring and set the complete number 12345.

E. Check the reading to be certain the predetermining number is set correctly. When the cover is closed, the figure on the gray rings should read 12345. The black wheels should show all zeros.

F. The counter adds to the predetermining number, then actuates the output switch.

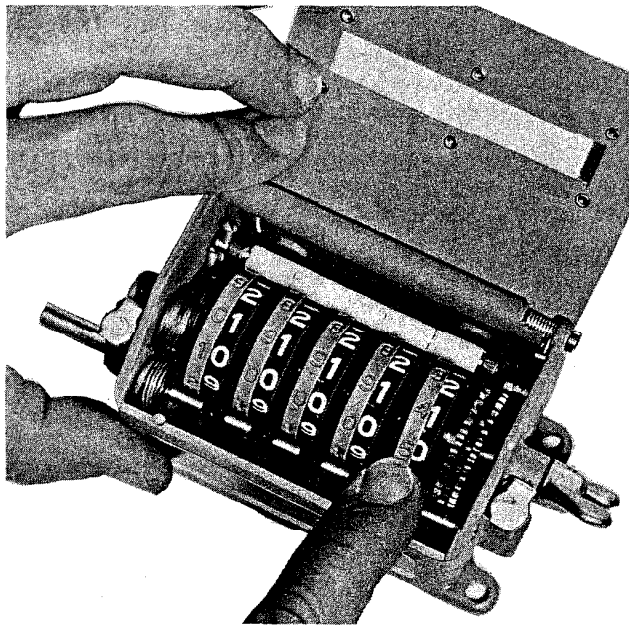


Figure 3. Rotating Right-Hand Predetermining Ring.

2. **OPERATION CHECK.** After installation and prior to normal operation, check the counter for proper operation:

A. Inspect all leads and connections.

**CAUTION:** BE SURE THE COUNTER AND ALL ASSOCIATED CIRCUITS ARE PROPERLY GROUNDED.

B. Set a two-digit number on the gray predetermining rings. 00012 is convenient.

C. Manually turn or ratchet the input shaft. See that the counter's tally agrees with shaft input count.

D. As the count reaches the preset number, listen for the switch action. Check to be sure the switch contact opened or closed as intended.

**Note:** The counter may be operated normally only after all the preceding checks have been performed and all necessary corrections made.

### V. PERIOD INSPECTION AND MAINTENANCE.

Establish regular intervals for inspection and lubrication. Periods should be based on operating time, environmental conditions, and required accuracy of the preset control.

**WARNING: DISCONNECT ALL POWER BEFORE MAKING ANY REPAIRS OR REPLACING ANY PARTS. TAKE PRECAUTIONS TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE.**

1. Check security of counter on mounting surface.
2. Examine all leads and connections. No looseness, chafing or wear is acceptable.
3. Perform operation checks in Section IV, paragraph 2.
4. Lubricate the two bearing cups with light machine oil, Mobil Belcoite No. 10 or equivalent.

### VI. SERVICE.

1. **WARRANTY.** These Veeder-Root counters are warranted for one year from date of shipment. See your purchase agreement or a current Price List for complete details.

2. **SWITCH REPLACEMENT (PN 510907-739).**

**WARNING: DISCONNECT ALL POWER BEFORE MAKING SWITCH REPLACEMENT.**

- A. Remove the two screws securing the rear switch cover. Lift off the cover to expose the switch.
- B. To remove the switch, take out the two screws holding it on the frame.
- C. Align the actuator plunger of the new switch (PN 510907-739) with the hole in the counter. Secure the switch in place with its screws.
- D. Place the switch cover on the frame. Install and tighten the cover retaining screws.

**CAUTION:** PERFORM THE OPERATION CHECK, SECTION IV, BEFORE RETURNING THE COUNTER TO NORMAL USE.

3. **FACTORY REPAIR.** Veeder-Root maintains complete service facilities at Elizabethtown, North Carolina.

**Note:** For fast service contact your Veeder-Root Distributor or send counter direct to:

Service Department  
Veeder-Root Company  
2100 W. Broad, Route 87  
Elizabethtown, NC 28337

All shipments must be prepaid.

**VEEDER-ROOT**   
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