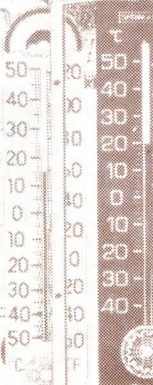


SPRINGFIELD®

WEATHER INSTRUMENTS

Springfield
Weather
Instruments



LIMITED WARRANTY

We warrant this Springfield Instrument to be free from defects in workmanship or material for a period of one year from date of purchase.

During the warranty period, such defects will be repaired or the defective instrument will be replaced, at our option, without charge. This warranty does not cover damage through accident or misuse.

ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF FITNESS AND MERCHANTABILITY, ARE HEREBY LIMITED IN DURATION TO A PERIOD ENDING ONE YEAR FROM DATE OF PURCHASE.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Repair or replacement will be made at our option if this instrument is returned postpaid to:

SPRINGFIELD INSTRUMENT COMPANY

DIVISION OF SUNBEAM CORPORATION

76 PASSAIC ST. • WOOD-RIDGE, N.J. 07075

VERY IMPORTANT

Do not attempt to set the Barometer until
reading the instructions on **PAGE 12**

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LOCATING THE INSTRUMENT

Springfield Weather Instruments are for indoor use. It is important to select the best location. Desks, tables, or interior walls are best. Do not position your instrument on an outside wall; near a heater, radiator, or window; or near an air conditioner or humidifier because these locations will produce incorrect readings.

HANGING

All Instruments intended for hanging have a hook or hanger hole at the back of the unit. Use a strong picture hook, nail, or screw to hang your instrument. Make certain that it is firmly anchored, and that it has a head large enough to prevent the Instrument from slipping off if accidentally jarred. Do not hang instruments with glue or adhesive type picture hooks as the adhesive may fail with age. Some Springfield Instruments may be hung either vertically or horizontally. Those that can be used in both positions are equipped with rotatable instrument housings. Two hanger hooks, two hanger holes, or a decorative hanger piece that can be moved from the top to one side are provided. Select the position you prefer and then rotate the instruments so that the dial faces are upright.

CLEANING AND CARE

Lenses

The lenses in most Springfield Instruments are made from clear plastic. This material is safer than glass because it is less likely to shatter if the instrument is accidentally

dropped or struck. However, certain solvents in household glass cleaners may damage or cloud its surface. Do not use cleaners or detergents to clean the Instrument lenses. Do not use paper towels or wiping cloths that may scratch the lens surface. Wipe with a thoroughly damp (not wet) soft cloth, and dry with a clean soft cotton cloth.

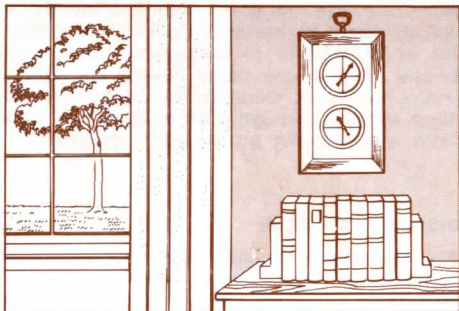
Instrument Cases

The attractive polished brass appearance of bezels and decorations has been achieved by special coatings. These coatings are very durable and will retain their lustrous appearance for many years *without care or polishing*. Just remove light dust with a soft cloth. Heavier dirt or fingerprints may be removed with a soft damp cloth containing a small amount of dishwashing liquid in cool water. Dry with a soft clean cloth.

Wood Grained Frame

All wood grained frames of Springfield Instruments are coated with a lacquer to preserve and protect their appearance. Polishing with wood or furniture polish is unnecessary and may damage the finish.

Just remove light dust with a soft cloth. If heavier cleaning is necessary, dampen a soft cloth in water containing a small amount of a mild detergent. Dry with a soft damp cloth. Minor nicks or scratches in the wood grained finish can be repaired by rubbing with a dark colored (walnut) furniture finish repair stick.



INDOOR THERMOMETERS

Thermometers in Springfield Weather Instruments measure air temperature in the immediate vicinity of the Instrument.

Tube Thermometers

Tube thermometers contain a colored fluid. As the temperature rises or falls, the colored fluid level in the tube rises or falls. The top of the fluid column indicates the correct temperature. The glass tube is fastened permanently in place and no adjustment should be attempted.

Occasionally shocks of shipping or handling may cause a small amount of the fluid at the top of the column to separate and one or more small gaps may appear. This condition will affect the accuracy of the thermometer. It can be corrected by grasping the Instrument near the bottom with one hand, holding it upright and then striking the side of the case smartly against the open palm of the other hand. Repeat until the separated fluid is rejoined.

Dial Thermometers

Thermometers with pointers are operated by sensitive mechanisms that respond to air temperature changes. Each mechanism has been adjusted after manufacture and will accurately read room temperature if properly located.



INDOOR/OUTDOOR THERMOMETERS

Indoor/Outdoor Thermometers provide a convenient means of comparing indoor temperature with outdoor temperature from within the comfort of your home. For ease of reading, the fluids in the indoor and outdoor thermometers are of different colors.

The indoor thermometer functions as described in the section on *Indoor Thermometers*.

The outdoor thermometer functions in much the same manner as the indoor thermometer, except that the fluid is also contained in the cable and finally in the cylindrical metal bulb which must be located outside the home so that the fluid will react to outdoor temperature changes. Because the fluid in the cable flows back and forth during the operation of the outdoor thermometer, the cable must not be cut, bent sharply, or squeezed so as to impede the flow and make the readings inaccurate or useless.

The outdoor thermometer is calibrated to compensate for the small portion of the cable that will be outdoors after installation. Thus the temperature indicated by both thermometers before installation may not be exactly the same.

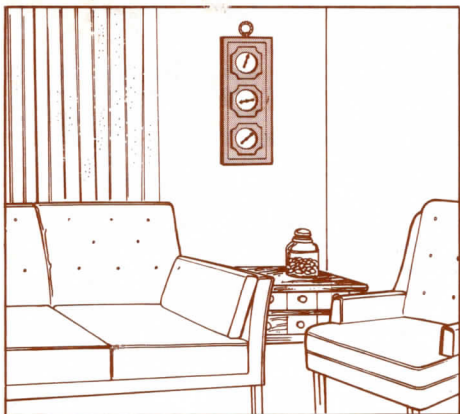
Shocks of shipping or handling may cause a small amount of the fluid at the top of one or the other column to separate and small gaps will appear. Correct as described in the procedure for correcting indoor thermometer separations on page 6.

Installation

The indoor/outdoor unit should be located near a window. The outdoor bulb and cable may be passed through a notch cut in the window frame that will permit closing the window without crushing or sharply bending the cable. For the most accurate outdoor readings, about 6 inches of the cable should be hanging outside. It is also important that the bulb and cable be shielded from direct sunlight as this will result in higher readings

than the true outdoor temperature. Use the bulb bracket and screw provided to secure the metal bulb in place.

The back of each indoor/outdoor thermometer is provided with two hanger holes, one near the top and the other toward the bottom. Drive two screws in the wall the same distance apart as the hanger holes and hang the instrument on both to keep it in a vertical position.



HUMIDITY METERS (HYGROMETERS)

Springfield Humidity Meters measure relative air moisture indoors only. These instruments register the percentage of water vapor which is *actually present* in the room compared with the maximum amount of water

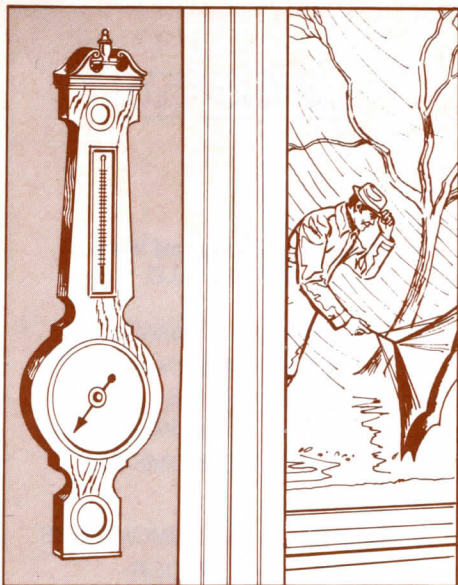
vapor that could be present.

All air contains water that has been separated into microscopic particles invisible to the human eye. If more water is vaporized (heated or sprayed) into the air in a closed room, the air will eventually become "full of water vapor" or "saturated" and is considered as 100% humidity.

Cold outdoor air may be moist at 45°F, perhaps measuring 65% relative humidity. Yet when this cold air enters a house and is warmed up to 70°F, the capacity of the air to hold invisible water vapor has been greatly increased. Thus the warmed air becomes dry and may have a relative humidity of only 25%. In winter, it is common to have low indoor humidity (10%-30%) for weeks at a time. Literally gallons of water must be added to the indoor air to raise the relative humidity from 20% water vapor to just 50% water vapor. A medium-sized home with normal air leakage can require as much as 15 gallons per day to hold the optimum levels of 45%-50%. A small furnace humidifier may have little effect on the humidity in an average home.

Operation of humidity instruments can be checked by placing them in a closed bathroom while a hot shower is running. The instrument should show an increase in relative humidity followed by a decrease when returned to its normal place.

Humidity meters respond slowly and when conditions are abruptly changed, it can take an hour or more for the humidity meter to reach an accurate reading. Remember, the humidity meter measures indoor humidity, not the outdoor humidity reported by the weather bureau.



BAROMETERS

The barometer measures atmospheric pressure at the location of the instrument. Because all houses or buildings have some leakage, the pressure of the air inside is the same as that outdoors. Therefore, regardless of location of the barometer, it measures atmospheric pressure both indoors and outdoors. It must, however, be adjusted for the altitude at which it is being used.

How Atmospheric Pressure Varies

The pressure developed on any place of earth's surface is the result of the weight of the column of air over that place at any one time and circulation patterns.

The actual weight of the air column (pressure) will vary around the earth because the weight of the air in each area depends on the temperature and the amount of water vapor present. If air grows colder or its moisture content decreases, the weight of the air column increases, and the pressure on the earth's surface increases. As air columns move about the earth, the pressure exerted changes on the earth's surface.

Because the surface of the earth is uneven, the heights of the air columns are not the same everywhere, and the pressures measured by barometers located at these different points are not the same. Scientists decided that it would be more convenient to measure the pressures at different altitudes as if they were at the bottom of a column extending all the way down to Sea Level. Thus observers would be able to compare readings at different locations without figuring the difference in altitude each time. Your barometer must be adjusted whenever it is moved to a new altitude so that it agrees with this universal reference to Sea Level readings.

The weather bureau, radio and television stations all report barometric pressure "corrected to Sea Level".

Initial Adjustment of the Barometer

SPRINGFIELD barometers are equipped with precision mechanisms suitable for operation

at any altitude up to 10,000 feet. The mechanism has been shipped in a non-operating condition and should be set for the location at which it is to be used. To properly set the barometer, follow these simple steps:

1. Obtain the current barometric pressure for the area from a local television station, radio station, or weather bureau.
2. Insert the key provided (or a small screwdriver) into the screw slot located in the hole behind the barometer dial.
3. Holding the instrument upright and observing the black (on some models red) barometer pointer, turn the key slowly 1 to 3 turns clockwise (viewed from the rear). When the screw nears the proper operating position, the black (on some models red) pointer will begin to move in the same direction as the screw (counter-clockwise viewed from the front). Continue turning slowly until the pointer reaches the value of barometric pressure obtained in Step 1. If the pointer is accidentally turned past the desired value, turn the key in the opposite direction.

Caution—It should not be necessary to force the adjustment screw. If it becomes tight in either direction, the end of the adjustment range has been reached.

Moving the Barometer

If the barometer is moved to a new location at a different altitude, it should be readjusted. Before transporting, use the key to turn the screw all the way out (counterclockwise). When the new location has been reached, repeat the initial adjustment procedure.

Pre-Adjustment by the Dealer

If the dealer had made an initial adjustment on your instrument, it should be readjusted.

In most cases the altitude of the new location will be different than that of the dealer's place of business. Proceed as indicated in *Moving the Barometer*.

Gold Set Pointer

The gold set pointer on the barometer lens is provided to enable you to determine whether the barometric pressure is rising or falling. Using the knob turn the gold set pointer so that it is overlying the instrument pointer. After a period of time, several hours or overnight, if the pressure has changed the instrument pointer will show a new reading and the "set" pointer will remain at the original reading, thereby telling you whether the barometric pressure is rising or falling. The "set" pointer must be reset by hand whenever this type of observation is to be made.

Weather Words

The "weather words" that appear on most barometer dials are more historic than scientifically accurate. Words like "rain" and "fair" represent conditions that early observers in England and Europe thought would likely occur if the barometer reading was in the range where the word is shown. Today these words are more decorative than usable as reference to forecasting. Geographic location, mountain ranges, temperature, humidity, wind direction, season and rate of change of pressure are some of the total factors that determine specific weather conditions in your area should your barometer indicate that the pressure is rising or falling.

Metric Scales

All Springfield Weather Instruments now show metric scales in addition to traditional scales used in the U.S.A. and some other countries. On thermometers the metric scale is called "Celsius" or "Centigrade", and the traditional scale is "Fahrenheit". On the barometer the traditional scale is "Inches" while the metric scale is "Millibars" or "Kilopascals".

Wind Chill

The impact of wind velocity on temperature produces a measurable result called a Wind Chill Factor or Index. The Wind Chill Factor is a more significant indication of true outdoor weather conditions than temperature alone. It can serve as the most effective guide to appropriate cold weather attire.

The Wind Chill Chart below will enable you to determine the severity of weather conditions in your vicinity.

Wind speed is shown in the left column and temperature across the top of the Chart. The Wind Chill Factor is indicated at the point the wind speed and temperature intersect on the chart.

WIND CHILL CHART

WIND SPEED M.P.H.	ACTUAL THERMOMETER READING (FAHRENHEIT)										
	50	40	30	20	10	0	-10	-20	-30	-40	-50
	WIND CHILL TEMPERATURE (°F)										
CALM	50	40	30	20	10	0	-10	-20	-30	-40	-50
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57
10	40	29	16	4	-9	-21	-33	-46	-58	-70	-83
15	36	22	9	-5	-18	-36	-46	-58	-72	-85	-99
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-113
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-123
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132

VERY COLD

BITTER COLD

EXTREME COLD

SPRINGFIELD®

**Other quality household items
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