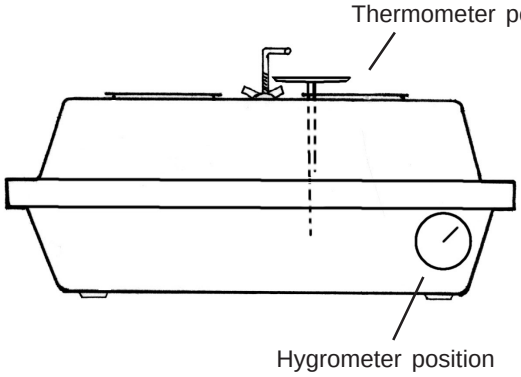
INSTRUCTIONS FOR 3018 THERMOMETER/HYGROMETER

The 3018 thermometer is standard equipment on all cabinet incubators manufactured by G.Q.F. Mfg. Co. and is an optional thermometer for the smaller HOVA-BATOR incubators. This dial type thermometer is a rugged and resonably accurate instrument and will give good readings in the 85°F to 105°F range. It may be installed in any incubator by drilling a 5/32" hole and then inserting the probe end of the 3018 through the wall so that the temperature can be taken on the inside while the dial portion is read from the outside of the incubator.

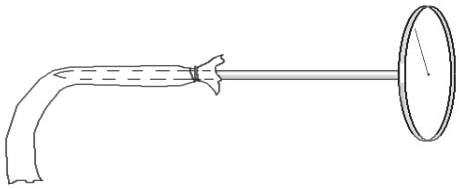
On newer GQF cabinet models *- to use the hygrometer at the same time a thermometer occupies the thermometer position, drill a 5/32" hole on the opposite side of the incubator, in the same position.*

HOVA-BATOR INSTRUCTIONS

To Use the No. 3018 as a thermometer in a Hova-Bator Incubator, place the probe through one of the vent holes next to the wafer thermostat. Still Air Hova-Bators may require a higher setting indicated on the No. 3018 to correlatewith a 100º F. reading at the top of the eggs.



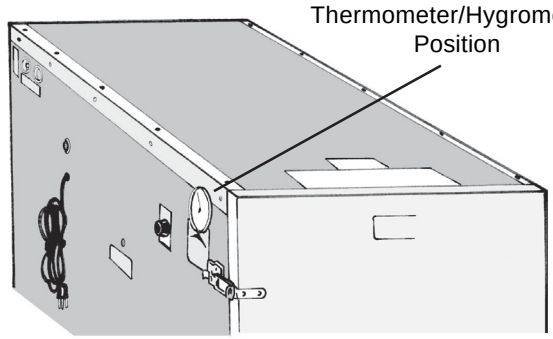
TO USE AS A HYGROMETER IN A HOVA-BATOR



To install the 3018 in the HOVA-BATOR incubators, place the incubator on a flat surface. Locate the positioning notch below the rim on the side marked “FRONT” on the bottom half. Using a nail or similar tool, slightly smaler than the probe of the thermometer, make a small hole at the top of the notch, level with the wire floor. Insert the probe of the thermometer so that it is parallel with the wire floor. The 3018 must be removed before installing or removing the automatic egg turner if one is used.

The 3018 can be used as a hygrometer by adding a wick (supplied). The hollow tube end of the wick is slipped over the probe end of the thermometer a couple of inches and the end of the wick can be wrapped with a rubber band or tied with string. The wick must be completely wet with water and the free end must be placed into a water source such as a humidity pan or bottle of water.

When using the 3018 as a hygrometer in the circulated air Hova-Bator incubators, keep the 3018 in the thermometer position described and add the wick as directed. Place the free end of the wick through the wire (cut one square from wire floor over trough, or wrap wick around edge of wire floor) and into the water trough for moisture.



INCUBATOR SUPPLIED WITH ONE THERMOMETER/ HYGROMETER. NORMALLY DRY BULB READ AFTER ESTABLISHING CONDITIONS FOR WET BULB TEMPERATURE.

Do not bend the probe of the 3018 as this will damage the thermometer. Do not let the wick dry out or crust over with mineral deposits.

CABINET MODEL INCUBATOR INSTRUCTIONS

The normal position of the 3018 when used as a thermometer on GOF cabinet incubators is on the left side of the incubator as viewed when opening the door. It should be approximately 4 inches from the front edge and about 3.5 inches down from the top edge. This should put the probe about 1/4" directly in front of the shelf on which the water pan sits.

To mount the 3018 in a GQF cabinet incubator as a hygrometer, leave the thermometer in the position described above and slip the wick onto the probe. The free end of the wick should then be placed into the water in the humidity pan.

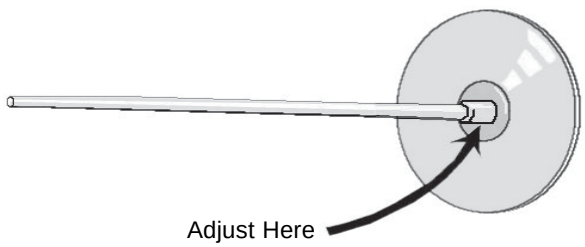
HOW THE HYGROMETER WORKS

When a moist wick is placed over the end of the thermometer., the water begins to evaporate which cools the thermometer. How dry or moist the air is determines how fast the water evaporates and thus how cool the wick will become. Air with a lot of moisture or humidity will have a higher temperature than dryer air.

Because the wick can become coated with impurities in the air and water, it is best to use the wick for about 24 hours only as the reading may seem higher than it is once the wick becomes soiled from deposits. If the hygrometer is reading 95°F or higher, it is most likely that the wick is not working and should be wetted or even changed. Wicks can sometimes be washed or the ends reversed on the probe to extend the life of the wick.

WET BULB READINGS

Most eggs set at 99.5°F will have a wet bulb reading between 84°F and 86°F. A day or more before hatch the wet bulb reading is increased to between 88°F and 90°F. To convert the wet bulb reading into percent humidity, use the chart provided with this instruction.



ADJUSTMENT IN READING ERROR

The 3018 is set at the factory for 99.5°F. Should the 3018 become several degrees off, it can be reset. Place the probe into a known temperature medium such as water or air that will be at a known temperature as measured by an accurate thermometer (do not use a fever thermometer). The temperature setting should be as close to the operating temperature as possible (ie 100°F). While it is reading the known temperature, grab the base of the probe with a pair of pliers or 1/4" wrench on the flat areas on the back of the dial The dial can then be rotated so that the pointer is over the correct temperature.

CONVERSTION OF WET/DRY BULB READINGS TO PERCENT OF RELITIVE HUMIDITY

DRY BULB TEMPERATURES

WET BULB TEMPERATURES	85	90	95	96	97	98	99	100	101	102
68	41	31	23	22	21	19	18	17	16	15
69	44	34	25	24	23	21	20	19	18	17
70	47	36	28	26	25	23	22	21	20	18
71	50	39	30	28	27	25	24	23	21	20
72	53	41	32	30	29	27	26	25	23	22
73	56	44	34	33	31	30	28	27	25	24
74	60	47	37	35	33	32	30	29	27	26
75	63	50	39	37	36	34	32	31	29	28
76	66	53	42	40	38	36	34	33	31	30
77	70	55	44	42	40	38	37	35	33	32
78	73	58	47	45	43	41	39	37	36	34
79	77	62	49	47	45	43	41	39	38	36
80	80	65	52	50	48	46	44	42	40	38
81	84	68	55	52	50	48	46	44	42	40
82	88	71	57	55	53	51	48	46	45	43
83	92	74	60	58	55	53	51	49	47	45
84	96	78	63	61	58	56	54	51	49	47
85	100	81	66	64	61	59	56	54	52	50
86		85	69	67	64	61	59	57	54	52
87		89	72	70	67	64	62	59	57	55
88		92	76	73	70	67	65	62	60	57
89		96	79	76	73	70	67	65	62	60
90		100	82	79	76	73	70	68	65	63
91			86	82	79	76	73	71	68	65
92			89	86	83	79	76	74	71	68
93			93	89	86	83	80	77	74	71
94			96	93	89	86	83	80	77	74
95			100	96	93	89	86	83	80	77

NOTE: The above chart is for sea level readings. A general rule of adjustment would be to add I to the percent value shown in the body of the chart for each 2500 feet of elevation above sea level.

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