

# Kasco Model C-20 Time & Temperature Unit Control

## Owners Instructions



(Please read completely before installing and operating your Kasco Equipment)

### CAUTION:

To ensure the safe operation and long life of your Kasco Equipment, always take the following precautions:

- Always keep people and objects clear of the De-Icer propeller when operating.
- Always disconnect the power before servicing or removing your De-Icer.
- Always operate your Kasco De-Icer in the water! Operating your De-Icer dry (on shore or dock) can cause damage to the seals or injure operator.
- Always mount your C-20 on a vertical surface and operate only with the cover closed.
- Never lift your Kasco De-Icer or C-20 control by the power cable. This could damage the power cable and make your De-Icer or control unsafe to operate.
- Kasco Marine highly recommends that all possible precautions be taken around open water De-Icing areas to ensure the safety of the public, i.e., “Thin Ice” and/or “Open Water” signs, appropriate lighting, fencing or other safety measures as required in your area.
- There are certain conditions under which no circulator can prevent ice damage such as ice that moves due to wind or current, extremely cold weather where ice forms all the way to the bottom and in some cases where the bottom water temperature is the same as ice (very shallow water). Effective operation can be somewhat restricted by too little bottom clearance.

### INSPECTING YOUR C-20 UNIT CONTROL:

Upon receiving your Kasco C-20 Unit Control, please unpack and inspect your C-20 for any possible damage that may have happened during shipment. Any damage or shortage should be reported to your dealer/delivery service immediately to ensure prompt resolution.

### INSTALLATION:

This unit must be mounted on a vertical surface close enough to your power supply to allow at least a slight slack in the power cord from the C-20. Select the screw(s) with which to mount your C-20. You will need one for the slot near the top of the box and you may wish to utilize the two additional mounting holes located near the inside bottom of the C-20 box. At this time, prior to final installation, you may wish to do some pre-programming of the timer and thermostat (see Programming below).

Install the De-Icer power cord through the hole in the lower left portion of the C-20 housing and plug it into the receptacle inside the C-20.

*Important:* Your C-20 is designed to operate only one Kasco De-Icer. For the most accurate operation, avoid placing your C-20 in direct sunlight. Complete programming the timer and thermostat now.

### PROGRAMMING:

The advance design of Kasco’s C-20 gives you both time and temperature control of your De-icer. The C-20 is wired in a series configuration giving you control based on both time and temperature. Your Kasco De-Icer will only operate when both the timer and the thermostat are activated. The red indicator light will only be lit when both time and temperature are activated.

You will need to program both the timer and thermostat to complete your programming and we will address the how’s, why, and recommendations for each separately below.

**TIMER:** The timer is programmable in 30 minute increments, but do not program the timer in segments of less than a one hour period at any time.

Timer	Thermostat	De-icer
Off	Off	Off
On	Off	Off
Off	On	Off
On	On	On

#### Setting Timer:

1. Pull out each tripper for every half hour of ON time between desired hour mark on dial.
2. Turn dial clockwise one or more revolutions until correct time-of-day is adjacent to the timer arrow in the center of dial.

**THERMOSTAT:** The thermostat has a 6°F differential. This means  that the De-Icer will come ON at the temperature setting and will not go OFF until the temperature reaches 6°F above the ON setting.

#### Setting Thermostat:

Set dial to temperature at which you wish to have your Kasco De-Icer begin activation.

### RECOMMENDATIONS:

Use the following guide lines and hints to assist in customizing your setting for local conditions.

- De-Icers set up small localized currents the longer they run. Fewer and longer operation cycles will prove to be more effective than more frequent and shorter operation cycles.
- Fresh water freezes at 32°F, salt water at 28°F, and brackish water will freeze somewhere in between depending on the salinity level. Most people find that by setting the thermostat a couple degrees below the freezing point, they can minimize unneeded operation time for two reasons:
  - A. Once activated, the thermostat stays activated until the temperature rises the 6°F differential, putting the temperature above the freezing point.

- B. If the temperature is hovering near the freezing point, any ice formation is minimized.
- While picking time periods to operate, use these guidelines.
- A. Daily observation is required for all de-icing installation, so pick a time for operation when your installation would be observed, i.e., if you are De-Icing a dock at your home, you may decide to have it operate during your morning and/or evening meal time. If the unit is installed at a marina, one of the operation times should be during the Dockmaster's daily inspection of the De-Iced boats.
- B. A number of factors can increase freeze rates such as wind, snow, and colder temperatures. A sunny day can actually retard freezing. While picking operation times, remember to operate more when conditions will promote quicker freezing.
- C. Your programming will likely require some fine tuning, so remember to observe and be prepared to adjust your timer cycles.
- D. Remember that conditions do change, and you will need to either choose to program for worst case conditions or be willing to make some adjustments as time goes by.
- E. Objectives for use of the timer will vary by region, but as a general guideline, most people will be able to reduce operation time and energy consumption by 50-66%. Users in more severe conditions, such as the Great Lakes, will see less savings.
- F. ON cycles should be 2 to 6 times per day with neither ON nor OFF cycles being less than one hour.
- G. The following is a simple program giving a 50% operating time and 4 ON cycles. We are allowing more operation time during after dark hours and less during day light hours.

Cycle	Time	Length
ON	7:00am - 9:00am	2:00 hr
OFF	9:00am - 1:00pm	4:00 hr
ON	1:00pm - 3:00pm	2:00 hr
OFF	3:00pm - 7:00pm	4:00 hr
ON	7:00pm - 10:00pm	3:00 hr
OFF	10:00pm - 12:00am	2:00 hr
ON	12:00am - 5:00am	5:00 hr
OFF	5:00am - 7:00am	2:00 hr

This is only a sample to demonstrate some of the choices available to you.

- To bypass the time and operate only on temperature, pull all trippers on the timer to the ON position.
- Bypassing the thermostat to operate only on time can only be done when temperatures are below 40°F. To do so, set the thermostat to the highest temperature setting. The thermostat is still functioning, but would only shut down at that elevated temperature.
- When not in use, store inside away from salt air and sun light.

#### 90 DAY LIMITED WARRANTY:

Kasco Marine, Inc. warrants the C-20 to be free from defects in material or workmanship under normal use and service. The Kasco Marine, Inc. obligation under this warranty is limited to replacing free of charge any defective part within ninety (90) days from date of purchase. Customer shall pay all shipping charges.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTIES EXPRESS OR IMPLIED, AND ANY OTHER OBLIGATION OR LIABILITY WHATEVER ON THE PART OF KASCO MARINE, INC. AND IN NO EVENT SHALL KASCO MARINE, INC. BE LIABLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES.

No warranty registration is required, only original purchase receipt is needed for limited warranty coverage.

Warranty is void: If thermostat is damaged by unauthorized tampering.

#### KASCO SERVICE PARTS:

If the service parts listed below are not available from your local marine dealer, please order direct from Kasco Marine.

F2400 (1/2 HP) "K" Propeller

F3400 (3/4 HP) "J" Propeller

4400 (1 HP) "M" Propeller

Zinc Anode

Electric Power Cable, 25' length (16 gauge)

*Other lengths and gauges are available by special order.*

Specifications are subject to change without prior notice.

All orders shipped via United Parcel Service.



For Optional Kasco Parts or accessories, contact your local dealer or call Kasco Marine, Inc. at (715) 262-4488.

## *The Industry Leader in Ice Control Engineering.*



KASCO MARINE, INC. 800 Deere Road, Prescott, WI 54021-1241  
 Phone (715) 262-4488 \* Fax (715) 262-4487  
[www.de-icer.com](http://www.de-icer.com) \* [sales@kascomarine.com](mailto:sales@kascomarine.com)

© 1996 Kasco Marine, Inc.

Rev. 12/04

824401