



Wrap-It-Heat

Water Reduction Drum Heater with Thermostatic Control

GENERAL CONSIDERATIONS

The Expo Wrap-It-Heat Model WBO-55 water reduction drum heater is designed to heat **Non-Flammable** material in standard, U.S. 55 gallon steel drums only.

Expo Model WBO-55 drum heater is designed to reduce waste removal cost by accelerating the removal of water through evaporation, thus reducing the volume of material requiring eventual disposal.

Model WBO-55 is equipped with a thermostat and resettable high limit cut-off switch. When the water based material is reduced, the high limit switch will activate shutting off the heater. When the container is refilled, restart the water reduction process by firmly pressing the black reset button located on the front panel.

To comply with E.P.A. regulations in your state, the user must ensure that the waste material being reduced will not release toxic material into the atmosphere.

Do not use to heat flammable materials, materials that are adversely effected by heat which would make them hazardous to one's health or use in hazardous areas.

THESE HEATERS ARE NOT WATERPROOF. DO NOT LET THEM GET WET.

WBO-55 SPECIFICATIONS

DIAMETER.....	22-1/2"
SHIP WEIGHT.....	15 LBS
OPERATING VOLTS.....	240V AC AT 60 HZ.
POWER OUTPUT.....	3000W @ 240V (10,236 BTU/HR)
THERMOSTAT RANGE.....	70°F-250°F
RESET ACTIVATES AT.....	250°F
AMPERAGE DRAW.....	12.5 AMPERES @ 240V

Expo Engineered Wrap-It-Heat WBO-55 Drum Heater is U.L. Listed and C.S.A. Certified.

EXPO ENGINEERED INCORPORATED
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Wrap-It-Heat Model WBO-55

OPERATING INSTRUCTIONS

CAPACITY (GAL.)		55	
VOLTS		240V	
WATTS		3000W	
TEMPERATURE CHANGE IN DEGREES FAHRENHEIT			
		TIME IN HOURS FOR TEMPERATURE CHANGE	
10		0.56	
20		1.13	
30		1.69	
40		2.26	
50		2.82	
60		3.38	
70		3.95	
80		4.51	
90		5.08	
100		5.64	
110		6.21	
120		6.77	
130		7.33	
140		7.90	

When using one WBO-55 drum heater, slide the heater over the drum rim then mount the heater near the drum base. Tighten the clamp springs after closing the clamp to ensure maximum heat transfer to the drum contents. To tighten, simply tighten the 2 nuts on the "U" bolt using a nut driver. Failure to secure an absolute tight fit to the drum will result in damage to the drum heater. If two WBO-55 drum heaters are used to reduce the "time to boil", mount the second heater in the middle section of the drum. Make sure that the power cord of the top heater falls on an unheated section of the bottom heater (clamping area).

Model WBO-55 drum heater is equipped with two pilot lights; one green and the other red. The **Green** pilot light will glow continuously as long as the heater is plugged into an active electrical outlet. The **Red** pilot light will glow until the heater reaches the thermostat set temperature and then will go off.

Expo's 240 volt/3000 watt drum heater is equipped with a special, electrically grounded, three pin plug. **Under no circumstances should the plug be altered or removed; your warranty will automatically be voided.** For 240 volt/3000 watt units use Hubbell Single Outlet #HBL5661.

Energize the heater by turning the thermostat knob clockwise to the first mark, #1. Press in the black reset button. If the heater does not stay on, increase the thermostat setting in small steps and press the reset button again. Repeat this procedure until the heater stays on. Once the heater stays on, monitor the water solution and temperature. If the heater shuts off with the liquid above the top edge of the heater, advance the thermostat and reset. The heater will turn on and continue to evaporate the water. Once the thermostat is set for a given solution and the heater shuts off when the solution falls to a level approximately equal to the top of the heater, leave the thermostat set at this position. Because of the increased density of the material that was being heated, the drum should now be drained and the material disposed of.

NOTES:

THESE TIMES ARE FOR WATER. FOR OTHER MATERIALS, MULTIPLY THE ABOVE TIMES BY THE SPECIFIC HEAT.

THESE **MINIMUM** TIMES ASSUME THAT ALL THE BAND HEAT ENTERS THE DRUM AND THAT NO HEAT IS LOSS.

THE IDEAL CONDITIONS CAN BE APPROACHED BY:

- 1) COVERING THE TOP
- 2) INSULATING THE SIDES, TOP AND BOTTOM
- 3) INSULATING THE HEATER BAND. DO NOT COVER THE CONTROL BOX.
- 4) KEEPING THE DRUM OUT OF THE WIND
- 5) STIRRING THE DRUM CONTENTS OCCASSIONALLY
- 6) THE SURROUNDING ENVIRONMENT IS AT LEAST AT THE SAME TEMPERATURE AS THE DRUMS CONTENTS.

Failure to empty sludge before refilling the drum and repeating the cycle will result in more concentrated solution on subsequent cycles. This can cause the heater to shut off prematurely or not shut off at all due to variation in heat transfer to the thermostat caused by increased density of the solution. By controlling the density, the water in a solution can be evaporated consistently and help reduce the amount of material that requires disposal.

Know the material that is to be heated. Heating materials or mixtures of materials that are adversely affected by heat can pose a health or fire hazard. Before heating any materials or combinations of materials, check with your supplier and manufacturers as to its' stability, toxicity, and flammability. Heating of one or more materials which are heat sensitive can result in a chemical reaction which can result in fire or toxic materials released into the atmosphere. If the stability, toxicity, or flammability are even slightly questionable, **Do Not Attempt To Evaporate The Water.** The liquid level and temperature of the liquid must be monitored at all times.

OPERATION OF UNIT AFTER SET-UP

After the drum heater has been mounted and secured properly to the drum, it is ready for operation. As previously stated above, advance the thermostat switch to #1 and press the reset button to start the heater. If the unit does not turn on, slowly increase the setting and press the reset button. Continue this procedure until the thermostat stays on.

The thermostat **does not** sense the heater temperature, but **does** sense the drum temperature. So it is important that the thermostat bulb lay flat against the drum. Be aware that this drum heater can achieve temperatures in the 700°F range. The temperature the heater reaches is dependent on the viscosity of the material being heated and the ability of the material to absorb the heat being applied. That is why rather than temperatures being indicated on the faceplate of the heater, there are numbers. The thinner materials allow the heater to run cooler by absorbing the heat faster, while thicker materials prevent or absorb the heat much slower allowing the heater to reach higher surface temperatures. Drum contents should be monitored for temperature and if possible airrate or stirred to equalize the drum heater contents. The material closer to the heater will be hotter than the material on the opposite side of the drum heater. It is important to stir or airrate.

Allow the material to decrease in volume until the material is the same level as the drum heater. Then turn the thermostat very slowly down until the thermostat shuts off. Refill drum with a new batch of material and push in the reset button. Monitor boil off process for repeatability.

NOTE: Do no leave heater on unless the unit is attended to by you or your personnel. Do not leave heater on overnight or over the weekend unattended.

NOTE: The chart above shows temperature change vs time in hours on water.

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WARNING

READ THIS WARNING BEFORE OPERATING THE DRUM HEATER FOR METAL DRUMS!

THE FOLLOWING PRECAUTIONS MUST BE OBSERVED TO AVOID POSSIBLE INJURY OR PROPERTY DAMAGE!!

THE DRUM HEATER **MUST NOT** BE USED IN AREA WHERE **FLAMMABLE VAPORS** MAY, **AT ANY TIME**, BE PRESENT. FAILURE TO OBSERVE THIS CAUTION CAN RESULT IN FIRE OR EXPLOSION.

MONITOR THE TEMPERATURE WHILE HEATING YOUR MATERIAL!

DO NOT USE DRUM OR HEATER TO HEAT **FLAMMABLE MATERIALS**. EXPLOSION OR FIRE COULD RESULT. THE DRUM HEATER SURFACE IS **HOT** DURING OPERATION. DO NOT USE DRUM HEATER ON OR NEAR WHERE COMBUSTIBLE SUBSTANCES CAN BE IGNITED, RESULTING IN A FIRE.

NEVER USE THE DRUM HEATER TO HEAT FLAMMABLE MATERIALS OR USE IN A HAZARDOUS AREA!

TO AVOID HEATER FAILURE, DO NOT ALLOW THE HEATER AND/OR CONTROLS TO BECOME WET OR SPILL UPON THEM.

THE DRUM HEATER MUST BE **ELECTRICALLY GROUNDED** TO AVOID THE POSSIBILITY OF ELECTRICAL SHOCK TO THE OPERATOR. NEVER ALTER OR REMOVE THE SPECIAL HIGH AMPERE, THREE PIN, ELECTRICALLY GROUNDED PLUG SUPPLIED AS AN INTEGRAL PART OF THE HEATER.

THE **USER** MUST DETERMINE THE SUITABILITY OF THE DRUM HEATER FOR THE INTENDED HEATING APPLICATION. **DO NOT LEAVE** THE DRUM HEATER **UNATTENDED** DURING THE HEATING CYCLE. DISCONNECT THE HEATER FROM THE WALL RECEPTACLE WHEN IT IS **NOT** IN USE.

THE DRUM HEATER IS FOR **INDOOR USE ONLY**.

THE LEVEL OF THE MATERIAL BEING HEATED MUST BE ABOVE THE TOP EDGE OF THE DRUM HEATER TO ENSURE THE BEST TEMPERATURE SENSING AND INSURE LONG HEATER LIFE.

VENT CONTAINER WHILE HEATING OR IT MAY EXPLODE (OPEN VENT PLUG).

DO NOT USE DRAIN SPOUTS OR VALVES ON DRUMS THAT CAN FAIL AT ELEVATED TEMPERATURES, CAUSING LEAKS, LOSS OF MATERIAL AND/OR POSSIBLE PERSONAL INJURY TO THE OPERATOR.

MAKE ABSOLUTELY SURE THAT THE DRUM HEATER IS TIGHTLY CLAMPED UPON THE CONTAINER!

NEVER USE A DRUM HEATER INSIDE OR ADJACENT TO **HEAVY AIRBORNE DUST LOCATIONS** SUCH AS GRAIN ELEVATORS, GRAIN SILOS, HAY STORAGE AREAS, ETC....

KNOW HOW APPLIED HEAT WILL AFFECT YOUR MATERIAL BEFORE USING THE DRUM HEATER. IF YOU ARE NOT SURE HOW TO HEAT YOUR MATERIAL, DO NOT USE THE DRUM HEATER UNTIL YOU ARE INFORMED AS TO HOW THE APPLICATION OF HEAT WILL AFFECT YOUR MATERIAL – CONTACT YOUR MATERIAL SUPPLIER.

EXPO ENGINEERED PRODUCT WARRANTY

YOUR EXPO ENGINEERED PRODUCT IS GUARANTEED AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP FOR **ONE YEAR** FROM THE DATE OF ORIGINAL PURCHASE. THIS GUARANTEE **DOES NOT** COVER FAILURE DUE TO WATER SOAKING, SPILLAGE, ABUSE, ALTERATION TO PRODUCT OR MISAPPLICATION.

IN CASE OF FAILURE, CONTACT EXPO ENGINEERED INCORPORATED. DETERMINATION OF THE SUITABILITY OF THE GOODS DESCRIBED ON THE FACE, HEREOF, FOR THE USE CONTEMPLATED BY BUYER OR BUYER'S CUSTOMERS FOR SUCH GOODS IS THE SOLE RESPONSIBILITY OF BUYER OR BUYER'S CUSTOMERS, WHICHEVER THE CASE MAY BE. EXPO ENGINEERED SHALL HAVE NO RESPONSIBILITY IN CONNECTION, THEREWITH.

BUYER ASSUMES ALL RISK AND LIABILITY FOR LOSS, DAMAGE OR INJURY TO PROPERTY OF BUYER OR OTHER, ARISING OUT OF THE USE OR POSSESSION OF THE GOODS FURNISHED, HEREUNDER.

EXPO ENGINEERED INCORPORATED WARRANTS ONLY THAT THE GOODS SUPPLIED, HEREUNDER, SHALL MEET THE DESCRIPTION OR SPECIFICATIONS STATED, HEREIN. BUYER'S EXCLUSIVE REMEDY AND EXPO ENGINEERED'S SOLE LIABILITY, HEREUNDER, SHALL BE LIMITED TO REFUND OF THE PURCHASE PRICE OF, OR REPLACEMENT OF, ALL GOODS SHOWN TO BE OTHERWISE THAN AS WARRANTED.

EXPO ENGINEERED INCORPORATED SHALL IN NO CASE BE LIABLE OTHERWISE, OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, PROVIDED THAT NOTHING CONTAINED, HEREIN, SHALL LIMIT BUYER'S RIGHT TO RECOVER CONSEQUENTIAL DAMAGES FOR INJURY TO HIS PERSON WHEN THE GOODS PURCHASED ARE CONSUMER GOODS.

REFUND OR REPLACEMENT IS CONDITIONAL UPON GIVING EXPO ENGINEERED INCORPORATED NOTICE WITHIN **ONE YEAR** FROM DATE OF SHIPMENT BY EXPO ENGINEERED INCORPORATED THAT SAID GOODS ARE OTHERWISE THAN AS WARRANTED. FAILURE BY BUYER TO GIVE SAID NOTICE WITHIN SAID **ONE YEAR** PERIOD SHALL CONSTITUTE WAIVER BY BUYER OF ALL CLAIMS, HEREUNDER, WITH RESPECT TO SAID GOODS.

IF REQUESTED BY EXPO ENGINEERED INCORPORATED, BUYER SHALL PROMPTLY RETURN TO EXPO ENGINEERED'S PLANT ALL UNCONSUMED GOODS ALLEGED BY BUYER TO BE OTHERWISE THAN AS WARRANTED AND EXPO ENGINEERED INCORPORATED WILL PAY FREIGHT THEREON.

THE WARRANTY IS IN LIEU OF ALL OTHER WRITTEN OR UNWRITTEN EXPRESS OR IMPLIED WARRANTIES AND EXPO ENGINEERED HEREBY EXPRESSLY DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY AGAINST INFRINGEMENT OF MERCHANTABILITY OR FITNESS FOR PURPOSE OF THE GOODS SUPPLIED, HEREUNDER, ALL SAID GOODS BEING SUPPLIED "AS IS".

IN THE UNLIKELY EVENT THAT A PROBLEM SHOULD ARISE THROUGH THE USE OF YOUR EXPO ENGINEERED HEAT PRODUCT, PLEASE CONTACT THE CUSTOMER SERVICE DEPARTMENT AT EXPO ENGINEERED INCORPORATED BY DIALING 708-780-7155 OR FAX 708-780-7125.

PLEASE REFER TO THE **WARNINGS** AND THE **OPERATING INSTRUCTIONS** ACCOMPANYING THIS WARRANTY BEFORE OPERATING YOUR NEW EXPO ENGINEERED PRODUCT.

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