



**Normeca**<sup>AS</sup>  
SUPPLIER OF MOBILE HOSPITALS

## **OPERATIONS IN COLD AND WET CLIMATES, NORWEGIAN ARMY CONCEPT, USE OF THE HEATPAC SYSTEM**

### **GENERAL**

The HEATPAC System was developed by the Norwegian Defence Research Establishment, based on upon the Norwegian Army requirements. These were primarily medically oriented , the main purpose was to develop a system which could increase the survival rate of casualties in cold and wet climates. Later on the Norwegian Army has also seen the operational advantages which this system can offer.

The Heatpac System consists of :

1. The Personal Heater assembly, which includes
  - . a charcoal burning heater,
  - .. a heater cover,
  - ... charcoal fuel elements and
  - .... a heat distribution attachment with four tubes.
  
2. The following Heat Preserving products :
  - . a pile coated, heat-reflecting and waterproof survival bag in which the patient is transported,
  - .. overboots,
  - ... infusion sleeve for use with heater in extreme cold,
  - .... medical storage container, for use with heater.

### **MEDICAL UTILIZATION** :

The primary function for the HEATPAC System is to prevent the injured from becoming a hypothermia case. Hypothermia is a risk factor even in temperatures up to plus 10 centigrades. This is particularly so when the clothing is inadequate or saturated. Wet clothes will cause loss of body heat through the evaporation process. By utilizing the survival bag the evaporation is brought down to a minimum and most of body heat will be reflected by the bag material. With a heater in operation, the patient in the survival bag will remain comfortably warm - even in extreme cold.

The Norwegian Army concept is that the System should be at hand and available up-front, organic to all in-place medical personnel and at medical aid posts, ambulance points and in ambulances, etc. The HEATPAC equipment will be a logistic article for immediate replacement at battalion and brigade levels.

Recent studies within the Norwegian Army indicate that parts of the HEATPAC System are also being considered for operational use, solving extreme cold problems for guards and Military Police, for key weapon's crews, artillery observation posts, etc.

### **OPERATION AND MAINTENANCE**

Once in operation, the charcoal fuelled Heater will burn for seven to 24 hours, according to the heat output required ( i.e. 45 to 65 centigrades ). The 1.5 Volt standard battery, operating the fan, will also last for 24 hours. It is however practical to change the battery simultaneously with the fuel element. When the old fuel element is removed, it may be too hot to be touched by hand. One should also remove any loose bits or ash left in the combustion chamber before the new element is inserted.

The Heater maintenance is normally limited to regular cleaning. Serious faults including motor failure, breakage of the plastic casing, etc., will normally lead to condemnation of the whole unit as repair is uneconomical. If the motor shows a tendency to uneven running, battery contacts should be checked and cleaned if necessary.

After a long period of use the heater catalyst may develop a coating which diminishes the effectiveness. This is remedied by removing the catalyst, as shown in the instruction manual, rinsing it under water and placing it back in position.

For lengthy storage the Heater should be kept in a dry place. If this is not practicable, the Heater should be sealed in a bag of plastic coated aluminium foil - nylalten - i.e. ( nylon-aluminium-polyethylene ). Fuel elements are packed this way when issued, and can be stored without further precautions.

### **AVAILABILITY**

**NORMECA A/S**, based in Oslo, Norway, was chosen by the Norwegian Army to produce the HEATPAC system. HEATPAC products are available in various countries all over the world.

The HEATPAC System has been assigned the following classification numbers :

<b>ITEM</b>	<b>NATO CLASSIFICATION</b>	<b>U.S. NSN</b>
Personal Heater System Assembly	8465-25-128-3804	6530-01-255-0835
Personal Heater	8465-25-150-0968	6530-01-254-6492
Personal Heater Cover	N/A	6530-01-254-5722
Distribution Tubes	8465-25-150-0970	6530-01-254-4134
Charcoal Elements	8465-25-150-0969	6530-01-254-4130
Rescue Bag	7210-25-134-2514	N/A
Medical Storage Container	6545-25-122-7165	N/A
Infusion Sleeve	6515-25-150-0233	N/A
Thermal Overboots	8430-25-133-8852	N/A

The HEATPAC-SYSTEM encompasses the following items :

Item No.	ITEM	NATO Stock No.	US NSN
	<b><u>RESCUE BAG</u></b>		
8404.00	Rescue Bag, green	7210-25-134-2514	N/A
840484	Rescue Bag, orange	N/A	N/A
	<b><u>PERSONAL HEATER</u></b>		
8401.00	Personal Heater	8465-25-150-0968	6530-01-254-6492
8421.00	Personal Heater Cover	N/A	6530-01-254-5722
8416.00	Distributions Tubes ( divided in 4 parts )	8465-25-150-0970	6530-01-254-4134
N/A	Assembly Complete ( including ONE box charcoal elements - item 8403.00 )	8465-25-128-3804	6530-01-255-0835

### **REPLACEMENTS / LOGISTICS**

The system requires resupply of dry-cell batteries ( produced locally ) and charcoal every 8 - 24 hours, pending the degree of output.

8403.00	Charcoal Elements ( 7 per box )	8465-25-150-0969	6530-01-254-4130
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The Heater has a life span of 10 years, but if a failure should occur, the maintenance concept is based upon throw away and replacement by new units.

The rescue bag requires washing and / or cleaning. It may be sterilized by steaming.

	<b><u>SUPPLEMENTARIES</u></b>		
8406.00	Medical Store Container, excl. Personal Heater	6545-25-122-7165	N/A
8405.00	Infusion Sleeve	6515-25-150-0233	N/A
8407.XX	Thermal Overboots	8430-25-133-8852	N/A

