

# SARAPE CYLINDER HEATING BLANKET SYSTEMS

## INSTALLATION & OPERATIONS MANUAL



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# **SARAPE INSTALLATION & OPERATIONS MANUAL**

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# SARAPE

## 150 lb. & 1 TON CYLINDER HEATING BLANKET SYSTEMS

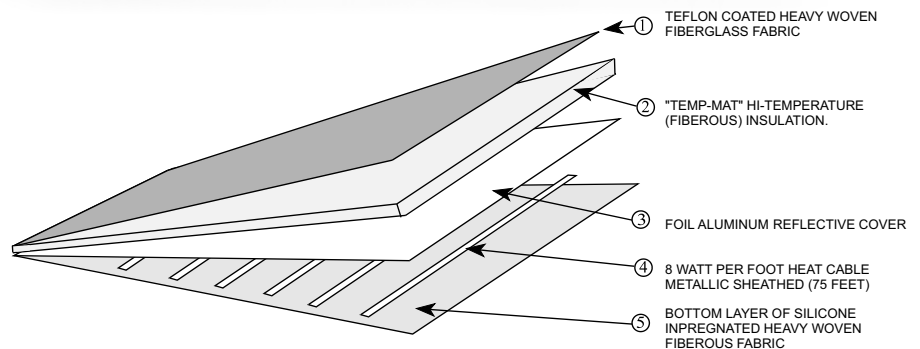


### CYLINDER HEATING BLANKET SYSTEMS

The **SARAPE** heating blankets are designed and used to allow normal permissible withdraw rates from 150 lb. and ton cylinders as ambient temperature drops. **SARAPE** blankets are not designed to overfeed gas or eliminate evaporator systems. They are industrial grade removable heat blankets fabricated with an extreme wear resistant heavy duty fiberglass woven mesh non-metallic outer shell coated with Teflon and silicon for outdoor waterproof service in corrosive areas. They operate on 120 VAC power and have an FM approved bi-metallic element sensing direct cylinder temperature. This direct sensing safety element prevents the cylinder temperature from rising above 105 degrees (F).

No exposed metal parts such as clips, pins, buckles or chain loop lace are used in order to avoid leaking, fraying or snagging.

The **SARAPE** blankets are not rated for hazardous or explosive areas.



The layered heat blanket is fabricated with a bottom shield of silicon impregnated heavy woven fiberglass fabric that is extremely wear resistant. Then a single run of FM and CSA approved sheathed constant wattage heating cable is laced and stitched in place.

The next layer is a reflective cover to radiate heat throughout the blanket. Over the reflective cover is "TEMP-MAT" hi-temperature (fibrous) insulation. The final top cover is Teflon coated heavy woven fiberglass fabric. The assembly is stitched and cross-stitched complete with Velcro tie-down straps to avoid over tightening the blanket. Handy grab straps are strategically stitched in place for operator ease in lifting blanket and avoiding "folding" of inner heating cable. The temperature rise within the lower blanket layer containing the heating cable is protected with a FM approved bi-metallic element sensing direct cylinder temperature. The cylinder sensing element is set at 105 degree (F) shutoff, below maximum permissible gas cylinder temperature. The external cord is connected to a 120 VAC grounded receptacle feeding from a circuit breaker having a 30 mA AC EPD trip ground fault using a 15 AMP safety circuit breaker for additional operator safety.

The **SARAPE** blankets are optionally supplied with a **SAVVY** control panel for automatic blanket control as ambient temperature drops and rises. The **SAVVY** controller automatically turns the **SARAPE** blankets on as the ambient temperature drops below 60 degree (F) and turns the blankets off as ambient temperature rises above 70 degree (F). The panel gives lighted indication of supply voltage power and blanket on status. The HOA selector switch allows automatic (ambient temperature) or hand control. The panel is NEMA 4X rated non-metallic FRP for outdoor service in corrosive areas. Panels are available for two or four cylinder applications. Other options include adjustable thermostat controls. Consult factory for option details.

The **SARAPE** blankets are proudly made in the U.S.A.

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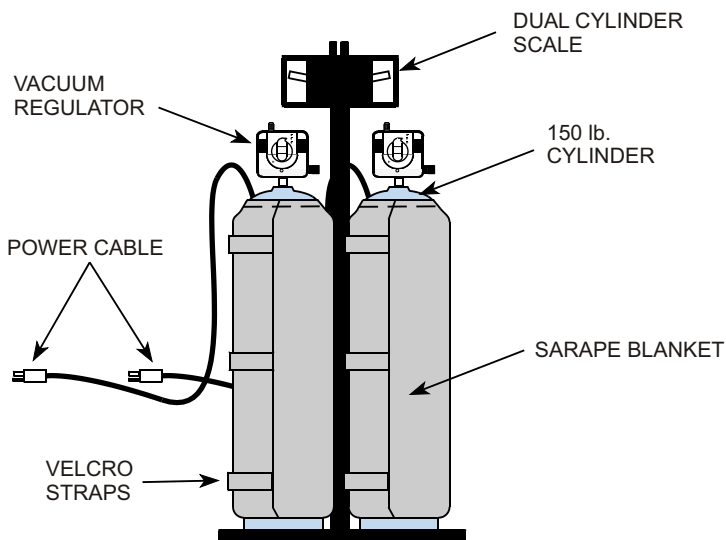
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# SARAPE 150 lb. CYLINDER HEATING BLANKET SYSTEMS

## SPECIFICATIONS:

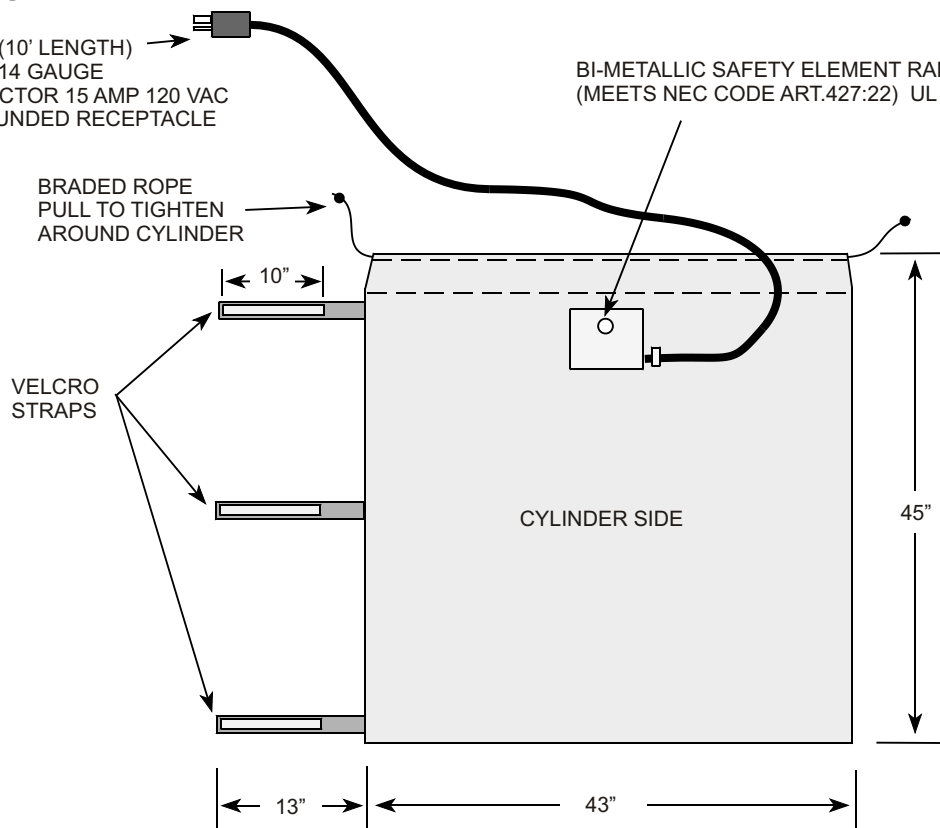
**Service Voltage:** 120 VAC  
**Current Draw:** 2 amps  
**Power Cord:** 10' long, 16 Gauge  
 3 conductor SJTW  
**Circuit Breaker  
 Size:** 1-2 Blankets use 15A  
 1-5 Blankets use 20A  
**Safety Element  
 Range:** On - 90 degree (F)  
 Off - 105 degree (F)  
**Blanket Size:** 43" X 45" X 2"  
**Weight:** 20 lb.  
**Area  
 Classification:** Ordinary  
 Non-hazardous  
 Indoor/Outdoor  
 Direct Exposure



## 150 lb. BLANKET DIMENSIONS

POWER CABLE (10' LENGTH)  
 3 CONDUCTOR 14 GAUGE  
 POWER CONNECTOR 15 AMP 120 VAC  
 USE WITH GROUNDED RECEPTACLE

BI-METALLIC SAFETY ELEMENT RANGE 90-105 DEGREES (F)  
 (MEETS NEC CODE ART.427:22) UL LISTED, 30 AMP

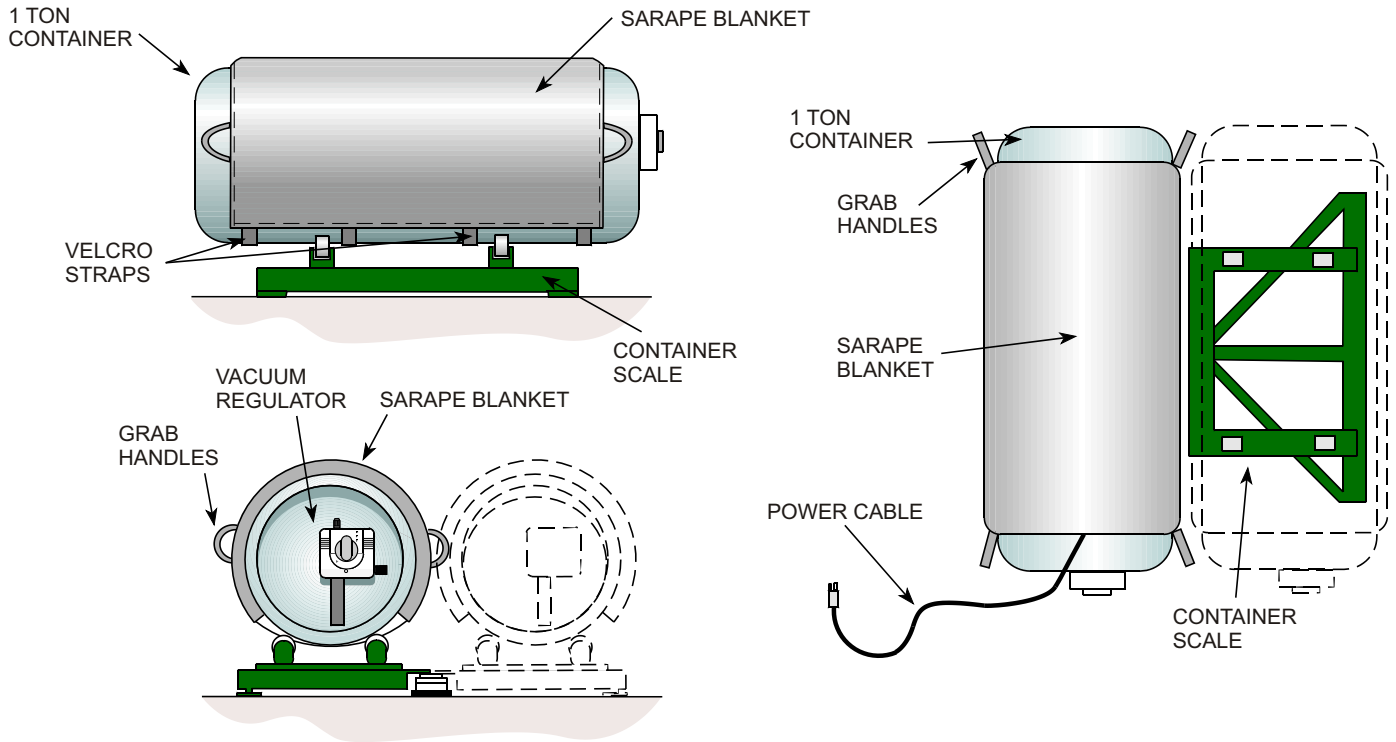


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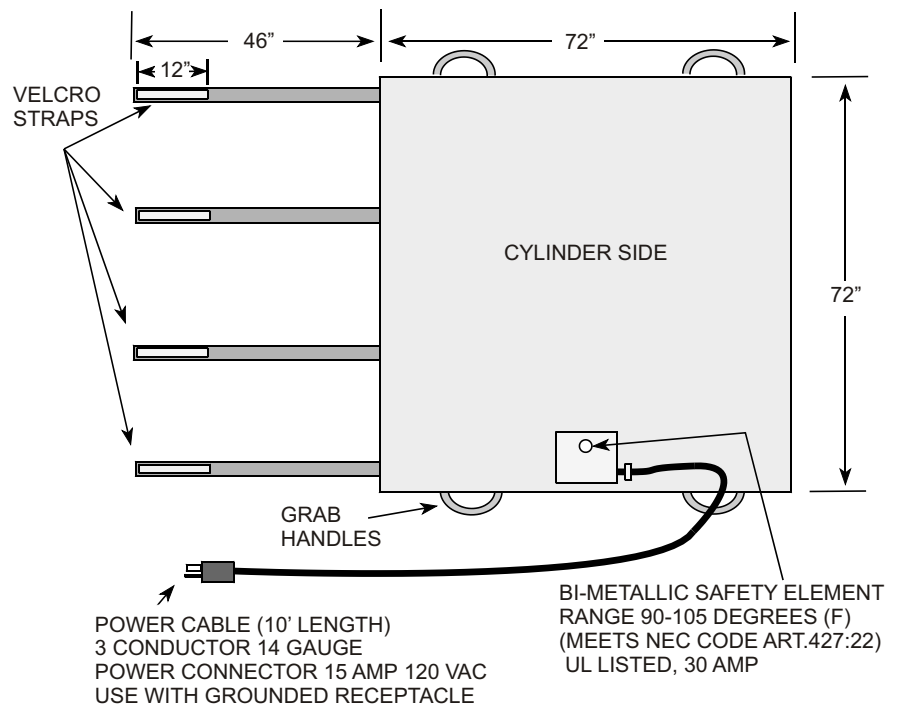
# SARAPE 1 TON CYLINDER HEATING BLANKET SYSTEMS



## SPECIFICATIONS:

<b>Service Voltage:</b>	120 VAC
<b>Current Draw:</b>	5 amps
<b>Power Cord:</b>	10' long, 16 Gauge 3 conductor SJTW
<b>Circuit Breaker Size:</b>	1-2 Blankets use 15A 1-5 Blankets use 30A
<b>Safety Element Range:</b>	On - 90 degree (F) Off - 105 degree (F)
<b>Blanket Size:</b>	72" X 72" X 2"
<b>Weight:</b>	52 lb.
<b>Area Classification:</b>	Ordinary Non-hazardous Indoor/Outdoor Direct Exposure

## 1 TON BLANKET DIMENSIONS



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# SARAPE INSTALLATION & OPERATIONS DATA SHEET

## 1 TON CYLINDER HEATING BLANKET SYSTEMS

The SARAPE blankets are industrial grade, strap on removable heat blankets, fabricated of extreme wear resistant heavy duty fiberglass woven mesh non-metallic outer shell coated with teflon and silicon for outdoor waterproof service in corrosive areas.

The blankets are designed and used to allow normal permissible withdraw rates from 150 lb. & ton cylinders as ambient temperature drops. SARAPE blankets are not designed to overfeed or eliminate evaporator systems.

If the SARAPE blanket is to be installed on a cylinder that is in a manifold, all cylinders in the manifold must have the same type SARAPE heater installed. Failure to install the proper heater on all cylinders in the manifold may result in damage to equipment and/or over pressurization of any unheated cylinders.

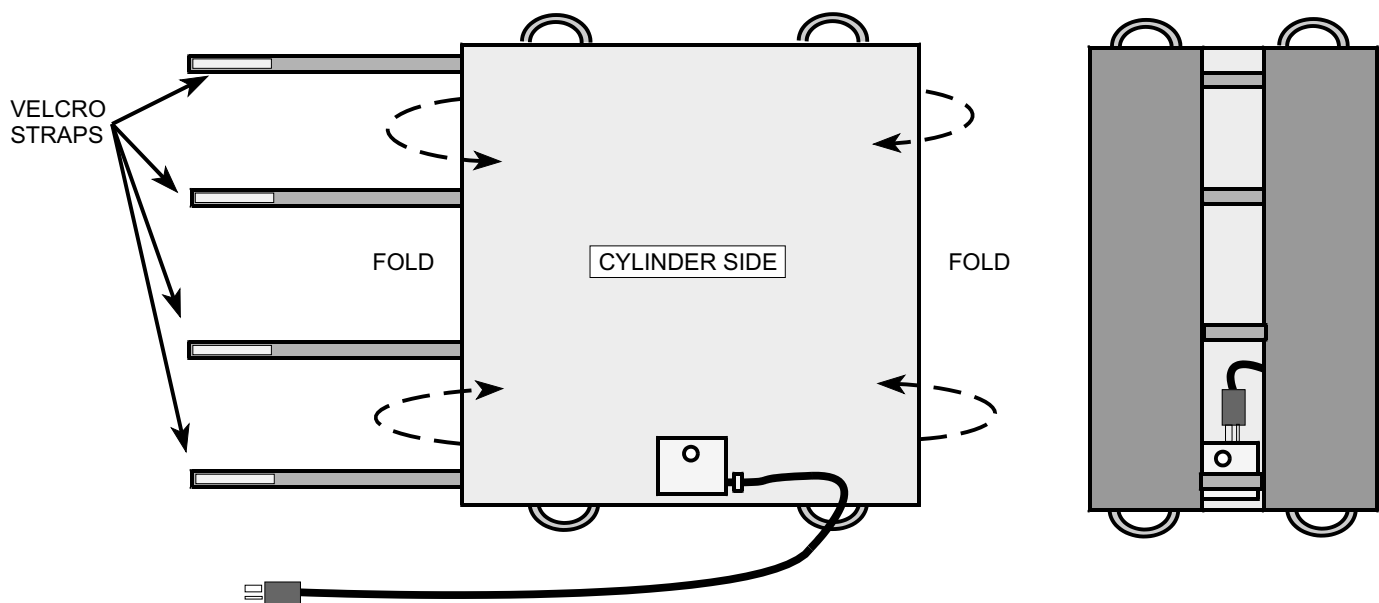
Supply power should be 120 Volt 1 phase only. Always use a grounded outlet feeding from a 15 amp safety circuit breaker with a 30 mA AC EPD trip ground fault for additional operator safety.

SARAPE blankets are flexible to conform to the shape of the cylinder they are to heat. Care in removal and installation must be used to avoid "kinking" or "folding" the heating element inside the blanket. Do not drop or throw the blanket onto the cylinder. This may damage the sensing element.

Do not place heavy or sharp objects on the blanket that may puncture the cover material.

SAVE THE SHIPPING BOX FOR STORAGE DURING SUMMERTIME OR WARM WEATHER PERIODS.

Blankets may be folded for storage as shown below:



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# SARAPE "SENSOR REPLACEMENT" I&O DATA SHEET 1 TON & 150 lb. CYLINDER HEATING BLANKET SYSTEMS

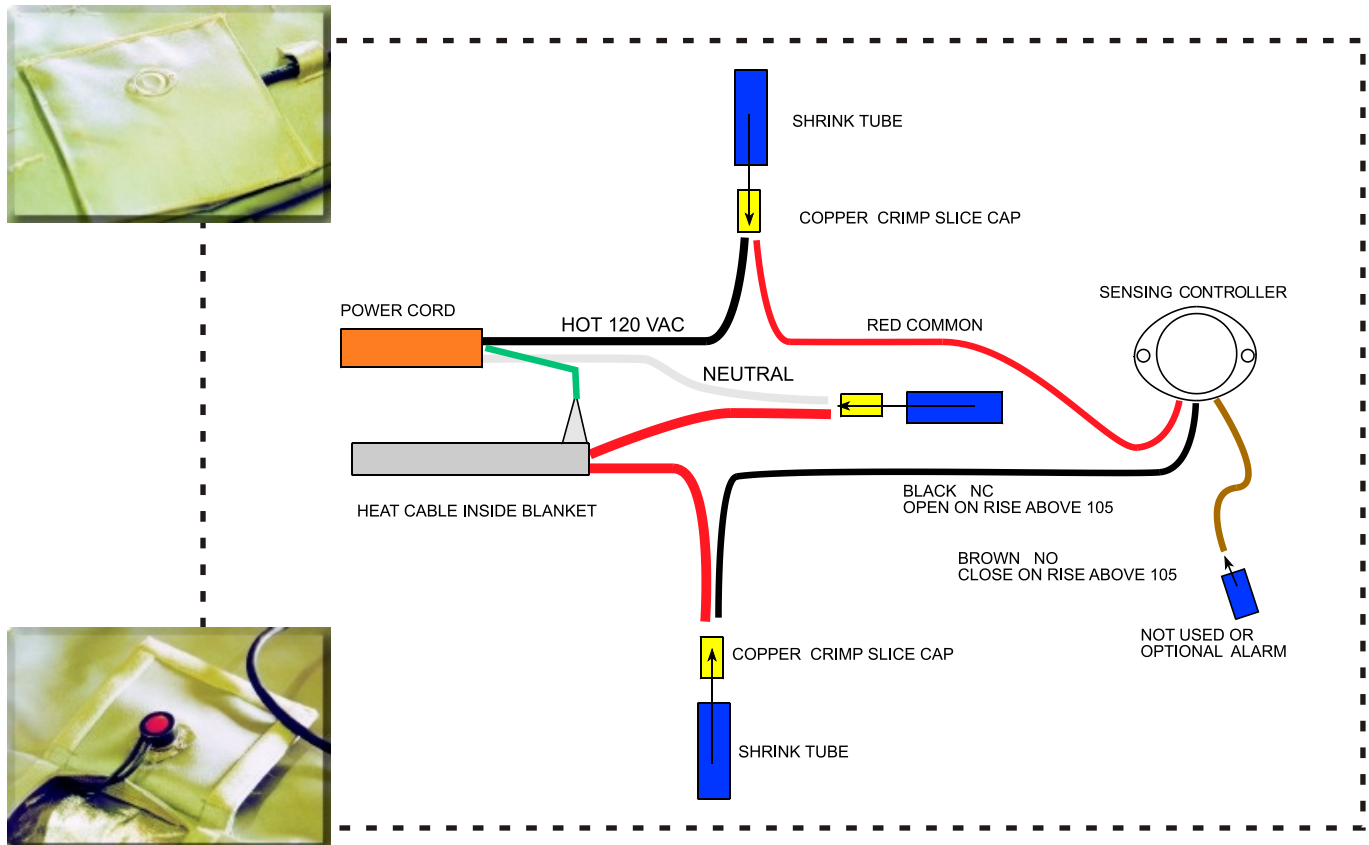
The SARAPE blankets are extremely durable, but damage can occur to the sensing element if dropped. Sensing elements will fail in the open mode and power will not be supplied to the heating cable. Sensing elements may be replaced by using the following replacement kit.

## SARAPE Kit # SRK90-105

### The SARAPE Kit # SRK90-105 includes:

- 1). Sensing element (qty. 1)
- 2). Copper crimp splice caps (qty. 5 including spares)
- 3). Heat shrink tube small (qty. 8 including spares)  
Heat shrink tube large (qty. 2)
- 4). Aluminum pop rivets 1/8" (qty. 3 including spare)
- 5). Wire tie wraps (qty. 5)

**Tools required:** Wire cutters, wire crimp tool, pop rivet gun, and heat gun or lighter.



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# SARAPE 150 lb. & 1 TON CYLINDER HEATING BLANKET CONTROL PANEL



## CYLINDER HEATING BLANKET CONTROL PANEL

The SARAPE control panel is designed for automatic blanket control as ambient temperature drops and rises. The control panel automatically turns the SARAPE blankets on as the ambient temperature drops below 60 degree (F) and turns the blankets off as ambient temperature rises above 70 degree (F).

The panel gives lighted indication of supply voltage power and blanket on status. The HOA selector switch allows hand (direct control), off (all blankets off), and automatic (ambient temperature control). The panel is NEMA 4X rated non-metallic FRP for outdoor service in corrosive areas. Panels are available for two or four cylinder applications. Other options include adjustable thermostat controls. Consult factory for option details.

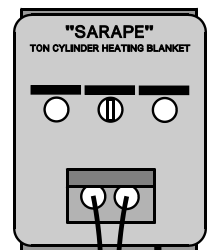
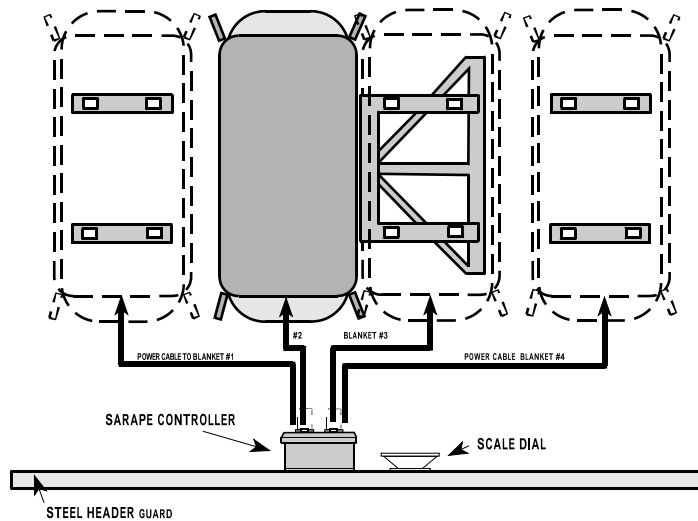
HOA CONTROL SWITCH  
 HAND (DIRECT CALL FOR SERVICE)  
 OFF (ALL BLANKETS OFF)  
 AUTO (CONTROLLED BY AMBIENT TEMPERATURE SENSOR)

INDICATION GREEN LAMP: AC POWER SUPPLY ON  
 INDICATION RED LAMP: HEATING BLANKETS ON

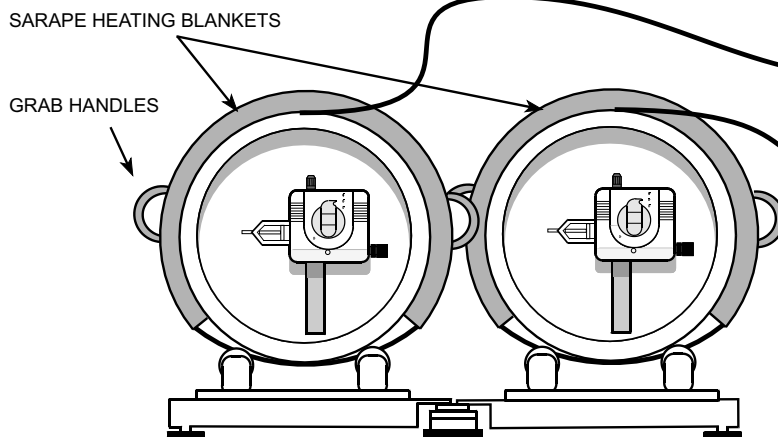
NON ADJUSTABLE AMBIENT TEMPERATURE RANGE ON/OFF OF SENSOR  
 BLANKETS ON: AMBIENT TEMPERATURE DROPS BELOW 60 ° F.  
 BLANKETS OFF: AMBIENT TEMPERATURE RISES ABOVE 70 ° F.  
 SENSOR LOCATED ON SIDE OF CONTROL PANEL.

DIRECT CYLINDER SENSING ELEMENTS:  
 BLANKETS ON: CYLINDER TEMPERATURE DROPS BELOW 90 ° F.  
 BLANKETS OFF: CYLINDER TEMPERATURE RISES ABOVE 105 ° F.

OPTIONAL BLANKET OVER HEAT OR FAULT INDICATION.



120 VAC POWER  
 CONNECT TO 30 AMP  
 SAFETY CIRCUIT BREAKER  
 WITH 30 mA AC EPD TRIP  
 GROUND FAULT



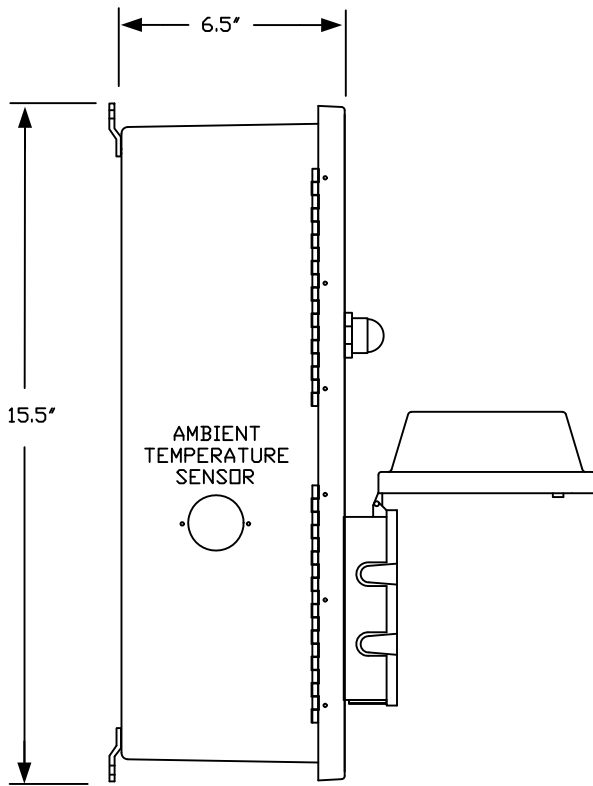
FRONT VIEW 1 TON CONTAINERS

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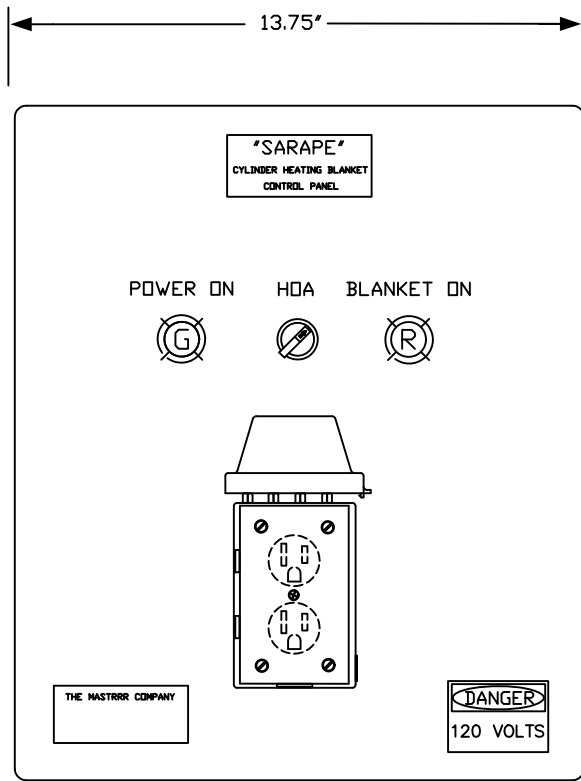
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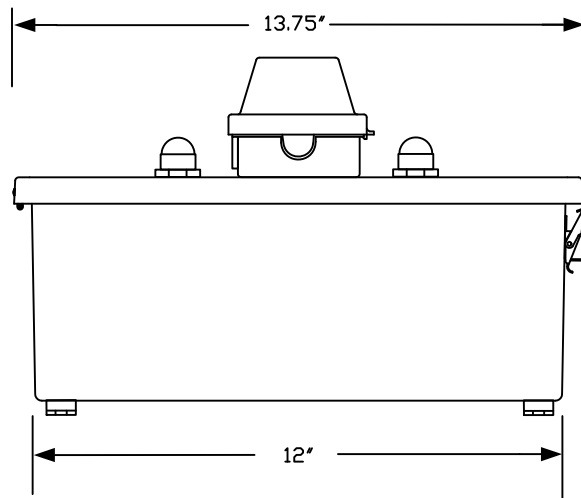
## SARAPE 2 – CONTROL PANEL DIMENSIONS



SIDE VIEW



FRONT VIEW



BOTTOM VIEW

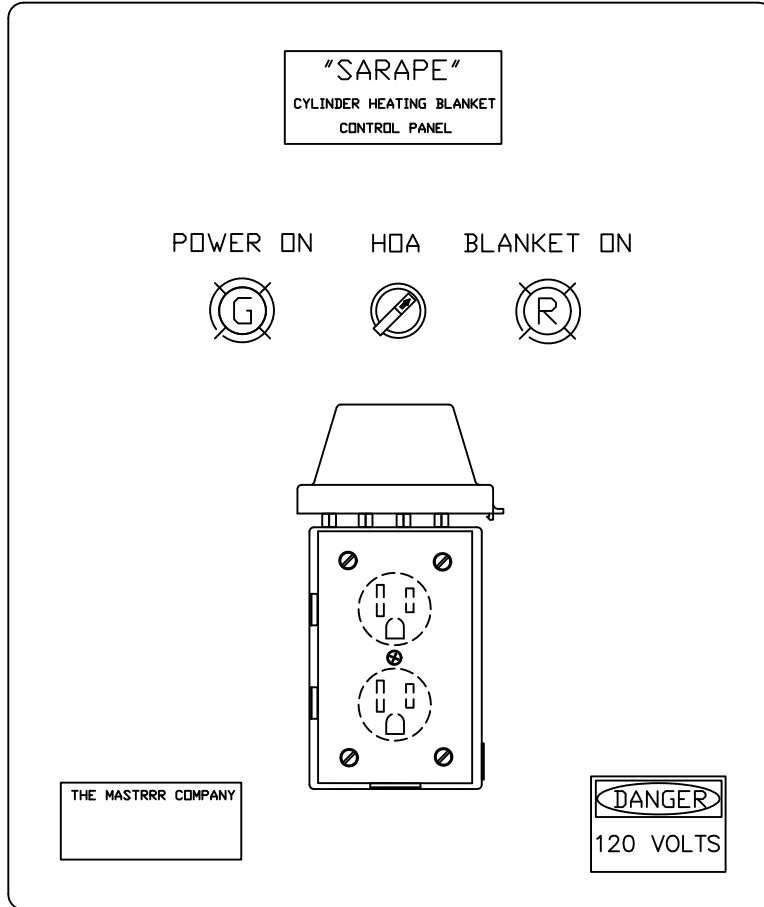
SARAPE PANEL WEIGHT 15 LBS.

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JOB NAME:	
DESCRIPTION: SARAPE 2 –CONTROL PANEL DIMENSIONS	
DATE: 3-14-07	SHEET NO: 1
THE MASTRRR COMPANY FRIENDSWOOD, TEXAS (800)-299-6836	FILE NO: 1056S

SARAPE 2 – NEMA 4X FRP ENCLOSURE  
HEATING BLANKET CONTROL PANEL



OPERATION

WITH MAIN CIRCUIT BREAKER ON, POWER TO SARAPE PANEL, TURNING H-O-A SWITCH TO HAND POSITION PROVIDES 120 VOLT POWER TO OUTLET. WITH SARAPE BLANKETS PLUGGED INTO OUTLET, THE BLANKET HEATS THE CYLINDER. THE BLANKET SENSING ELEMENT TURNS OFF SHOULD THE CYLINDER TEMPERATURE EXCEED 105 DEGREES (F), AND TURNS BACK ON WHEN THE CYLINDER TEMPERATURE DROPS BELOW 90 DEGREES (F).

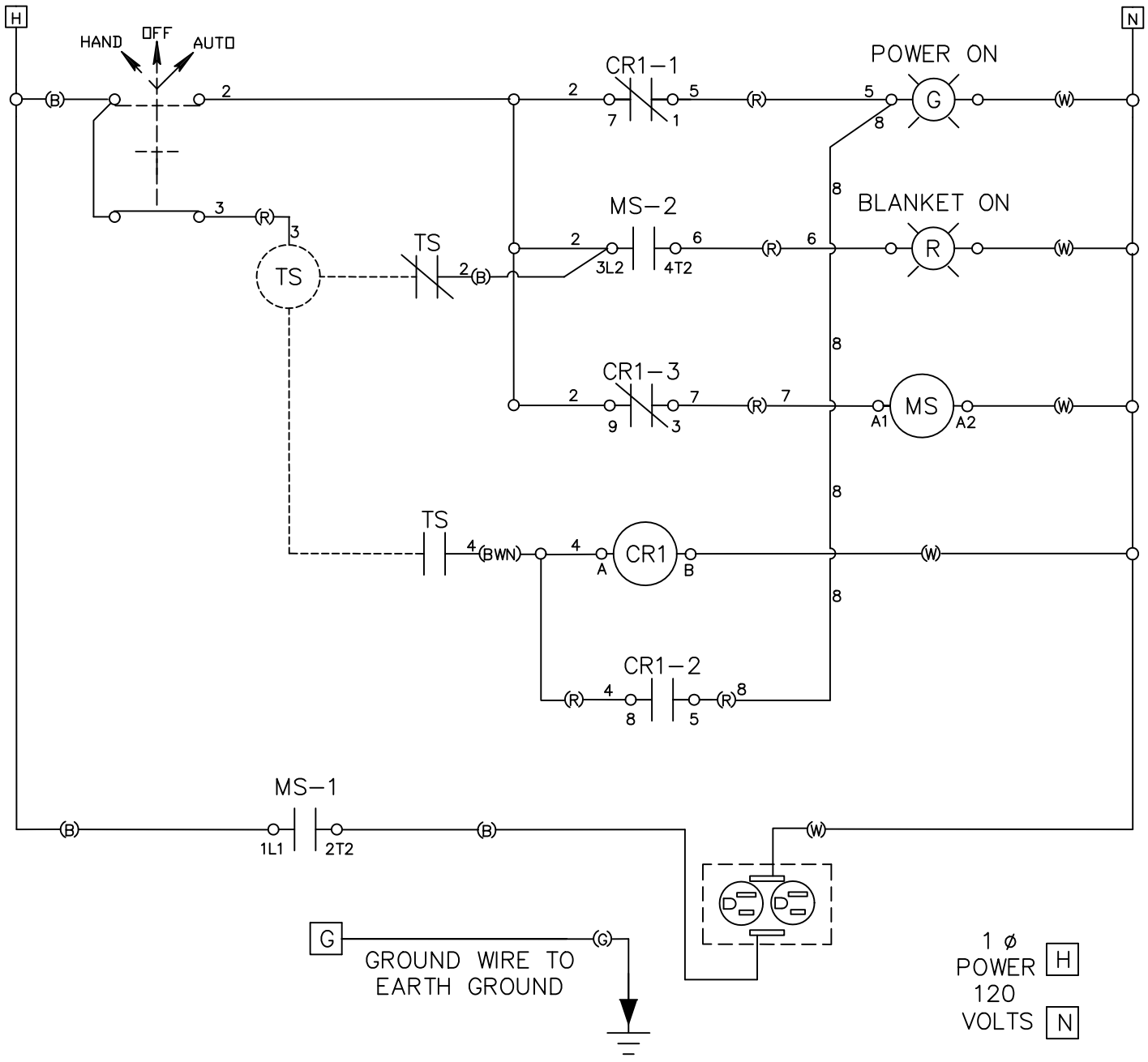
IN "AUTO" POSITION

THE PANEL (AMBIENT TEMPERATURE) SENSING ELEMENT PROVIDES 120 VOLT POWER TO OUTLET WHEN AMBIENT TEMPERATURE DROPS BELOW 60 DEGREES (F) AND TURNS OFF POWER WHEN AMBIENT TEMPERATURE EXCEEDS 70 DEGREES (F).

INDICATORS

120 VOLT POWER ON  
BLANKET 120 VOLT POWER ON

JOB NAME:	
DESCRIPTION: SARAPE 2 – CONTROL PANEL DESCRIPTION OF OPERATION	
DATE: 3-14-07	SHEET NO: 2
THE MASTRRR COMPANY FRIENDSWOOD, TEXAS (800)-299-6836	FILE NO: 1056S



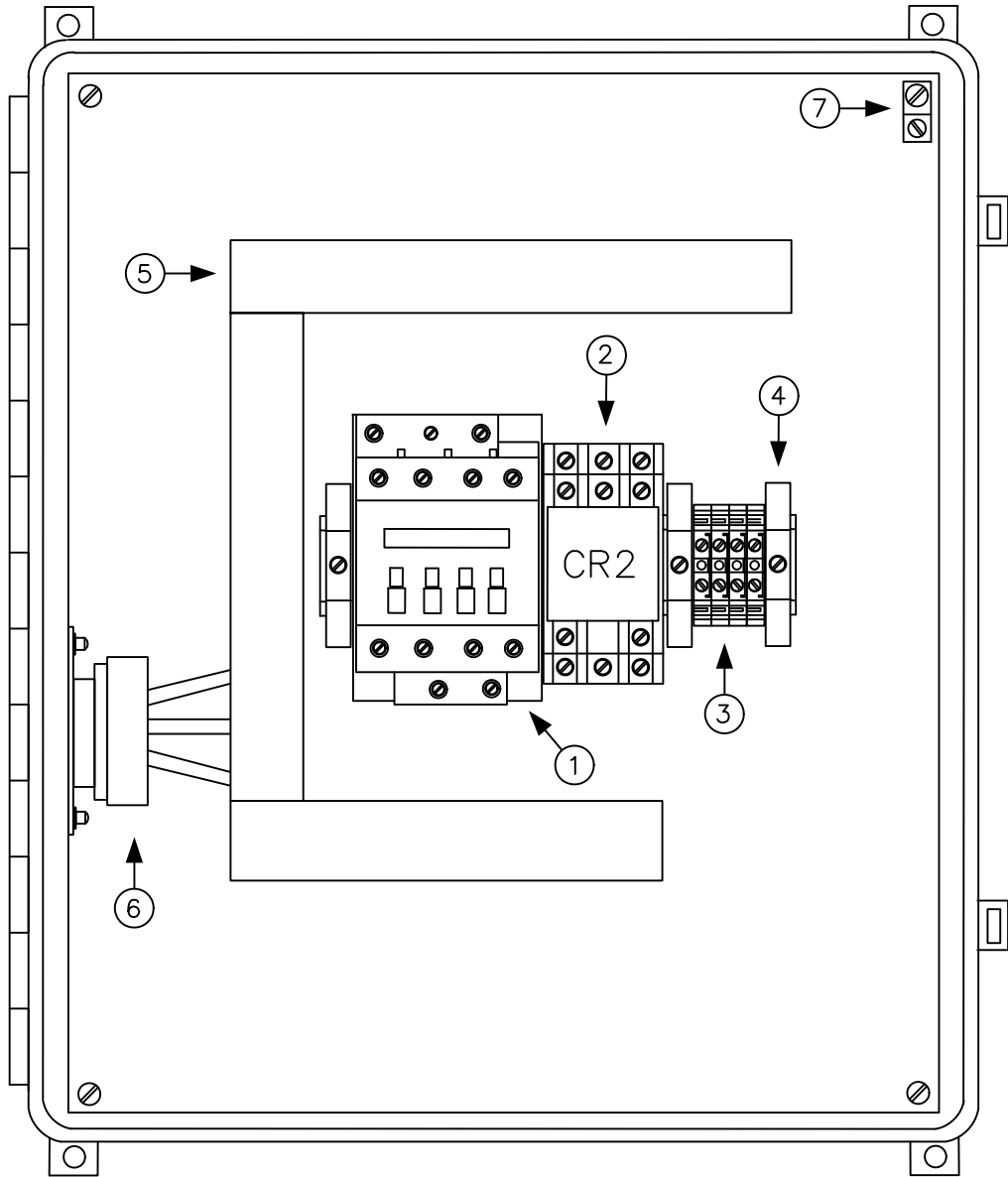
WIRE COLORS

- (R) CONTROL CIRCUITS (RED)
- (B) POWER CONDUCTORS (BLACK)
- (BWN) CONTROLLED POWER CONDUCTOR (BROWN)
- (G) GROUND CONDUCTORS (GREEN)
- (W) NEUTRAL CONDUCTORS (WHITE)

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JOB NAME:	
DESCRIPTION: SARAPE 2 - CONTROL PANEL WIRE DIAGRAM	
DATE: 3-14-07	SHEET NO: 3
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# SARAPE 2 & 4 – CONTROL PANEL COMPONENTS LAYOUT

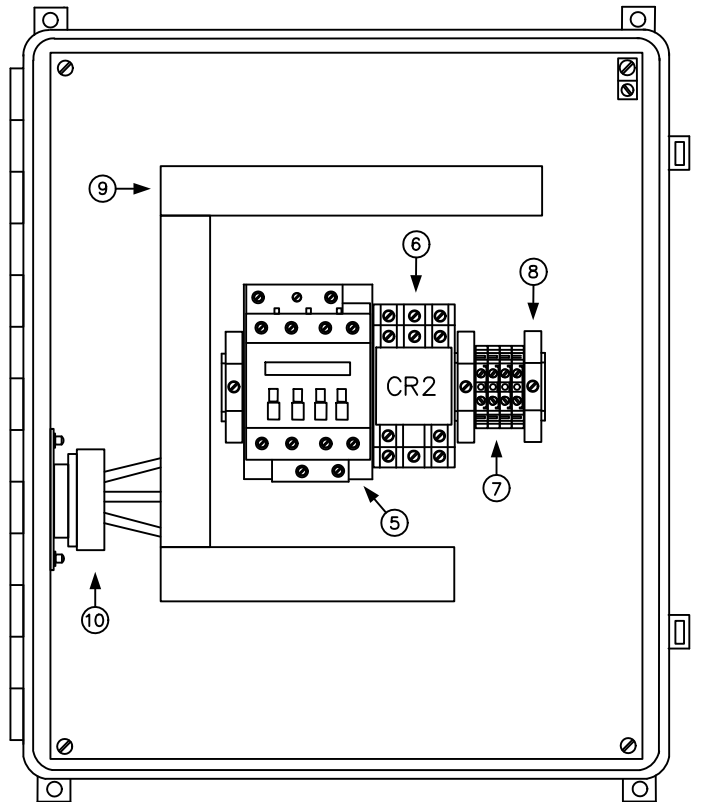
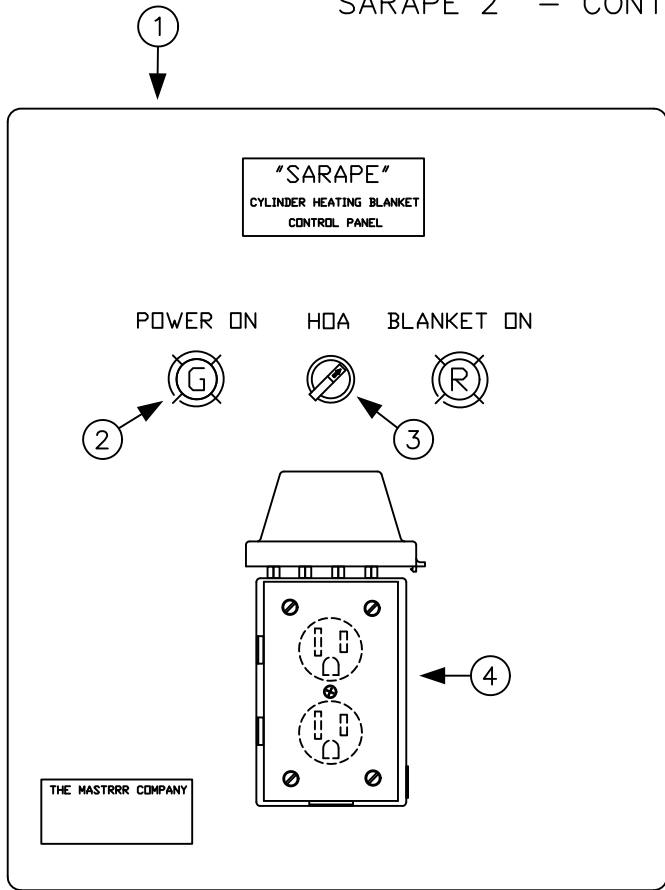


SARAPE PANEL – COMPONENTS SCHEDULE	
ITEM	DESCRIPTION
1	CONTACTOR W/OVERLOADS
2	CONTROL RELAYS
3	TERMINAL BLOCKS
4	TERMINAL BLOCK END STOPS
5	WIRE CHANNEL TRACK
6	AMBIENT TEMP. SENSOR
7	GROUND LUG

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JOB NAME:	
DESCRIPTION: SARAPE 2 & 4 – CONTROL PANEL BACK PANEL COMPONENTS LAYOUT	
DATE: 3-14-07	SHEET NO: 4
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## SARAPE 2 – CONTROL PANEL MATERIALS LIST



SARAPE CONTROL PANEL – MATERIALS LIST	
ITEM	DESCRIPTION
1	FRP ENCLOSURE NEMA 4X 20" X 16" X 10"
2	PILOT LIGHTS
3	3 POSITION SELECTOR SWITCH
4	15A GROUNDED OUTLET
5	CONTACTOR W/OVERLOADS
6	CONTROL RELAYS
7	TERMINAL BLOCKS
8	DIN RAIL & TERMINAL BLOCK END STOPS
9	WIRE CHANNEL TRACK
10	AMBIENT TEMP. SENSOR

\*NOTE: SEE ATTACHED COMPONENTS DATA SHEETS FOR DETAILED SPECIFICATIONS ON EACH ITEM

JOB NAME:	
DESCRIPTION: SARAPE 2 – CONTROL PANEL MATERIAL LIST	
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