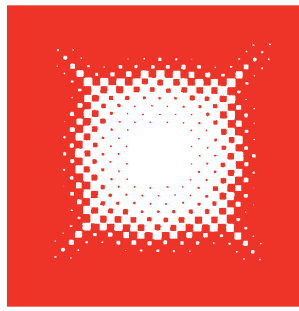


## SPECIFICATIONS



# SPACE-RAY®

Infrared Gas Heaters For Industry Since 1949

LOW INTENSITY

## PTS/PTU Series Tube Heaters

*Positive Pressure*



### SPACE-RAY®...A TRUSTED NAME IN INFRARED HEATING

At Space-Ray, industrial comfort heating is a challenge we take seriously. We have been manufacturing gas-fired infrared heating systems since 1949. The quality and performance of our heaters are based on over 50 years of field experience and exposure to a wide variety of industrial heating problems. Our reputation is built upon a solid track record for providing radiant efficient, easy-to-install and high quality infrared heating equipment.

Space-Ray infrared tube heaters are ideal for complete building heat or even spot heating needs. The best applications include: manufacturing plants, warehouses, auto dealerships, aircraft hangars, loading docks, weld shops, truck or auto service areas, car washes, fire stations, greenhouses, gymnasiums, garages, machine shops, tennis courts, swimming pools, maintenance shops, farm buildings and many many more.

### HEATING TECHNOLOGY FOR THE NEXT MILLENNIUM

Space-Ray infrared heaters radiate heat energy directly to the areas to be heated. Radiant energy is absorbed by concrete floors, objects and people, and re-radiated to warm the surrounding area. This principle is similar to the sun's radiant heat energy heating the Earth but not the upper atmosphere. This heating technology creates a comfort zone at floor level, not at the ceiling, and is much more efficient than conventional forced air heating systems.

### 30%-50% FUEL SAVINGS

A highly radiant efficient Space-Ray infrared heating system can normally save a building owner 30% to 50% in annual fuel costs when compared to forced air heating systems. In fact, some Space-Ray customers report fuel savings as high as 70% with a payback of less than one year. With a Space-Ray system, your investment payback accrues not only from reduced energy costs, but from reduced maintenance costs, too. So when you think industrial heating, think Space-Ray. Call us at 1-800-438-4936 for the name of our representative nearest you.

## PTS/PTU SERIES FEATURES

### GENERAL FEATURES

- 8 different Btu/hr sizes and more than 100 different configurations to custom design your infrared heating system
- Single Stage or Two Stage Input Controls
- CSA design certified
- Vented or indirect vented operation
- Sidewall or through-the-roof venting
- Natural and propane gas models

### PUSH THROUGH SYSTEM (Positive Pressure)

- Products of combustion are pushed through the combustion chamber
- Tube Integrity Safety System (TISS)
- No draft hoods, totally enclosed combustion chamber
- Blower motor totally enclosed in the burner box. Ideal for applications where minimal noise (less than 60dB) is desired
- Heavy duty permanently lubricated, ball bearing blower motor for maintenance-free operation

### BURNER SYSTEM

- Heavy-duty cast iron burner
- 10-year limited warranty on burner
- Inside or outside air for combustion
- Up to 40 ft. outside combustion air duct capability
- Standard 4" combustion air collar
- Reliable direct spark ignition system and 100% gas shut-off safety control
- Pre-purge and post-purge function
- State-of-the-art step opening redundant combination gas valve for quiet ignition and added safety
- Diaphragm air switch for proof of venting before gas flow and ignition
- Diagnostic monitoring light system
- Burner inspection sight glass
- Line voltage or 24V thermostat connection

### RADIANT EMITTER TUBE SYSTEM

- 4" O.D. heavy-duty calorized aluminized steel or alumi-therm steel combustion chamber (10 feet) and heavy duty hot-rolled steel radiant emitter tubes
- Optional calorized aluminized steel (ALC) radiant emitter tubes
- 3-year limited warranty on the emitter tubes
- Suitable for horizontal or angle mounting up to 45°
- Optional 90° elbows
- Up to 40 feet sidewall vent capacity

### REFLECTOR SYSTEM

- Highly efficient aluminum reflectors with reflectivity rating of 97.5%
- Optional end, corner, side and U-bend reflectors
- Optional decorative grille
- Individual reflectors can be rotated up to 45° to direct heat where needed
- Easy-to-use mounting brackets and wire hangers



Energy efficient PTS150-40 installed in a manufacturing application.

## MODEL SELECTIONS

MODEL	SINGLE STAGE BTU/HR INPUT	TWO STAGE		TOTAL EMITTER TUBE LENGTH*				MODEL	SINGLE STAGE BTU/HR INPUT	TWO STAGE		TOTAL EMITTER TUBE LENGTH*				
		Btu/hr High Input	Btu/hr Low Input	10 FT**	20 FT	30 FT	40 FT			30 FT	40 FT	50 FT	60 FT	70 FT		
PTS/U 40	40,000	40,000	25,000	X	X			PTS/U 125	125,000	125,000	80,000	X	X	X		
PTS/U 50	50,000	50,000	30,000		X	X		PTS/U 150	150,000	150,000	100,000		X	X	X	
PTS/U 75	75,000	75,000	50,000		X	X		PTS/U 175	175,000	175,000	110,000			X	X	X
PTS/U 100	100,000	100,000	65,000			X	X	PTS/U 200	200,000	200,000	125,000			X	X	X

\*Indicate model number based on Btu/hr input (e.g., 100,000 Btu/hr), total emitter length, (e.g., 40 feet) and gas type (e.g., natural gas single stage input). The unit selection for a straight tube would be PTS100-40-N5 and for a U-tube would be PTU100-40-N5. \*\*Available only on PTS models.

CONTROL SUFFIX	TYPE OF GAS	CONTROL OPTION DESCRIPTION
N5 / L5	Natural / Propane	Single Stage Gas Valve - Single Stage Input
N7 / L7	Natural / Propane	Two Stage Gas Valve - Two Stage Input - High/Low Fire

### ALC Option: All calorized aluminized steel (ALC) radiant emitter tubes

for ALC option the model number would be PTS100-40-ALC-N5. Note: for Carwashes, Dairy Barns, Greenhouses, Swimming Pools, Waste Water Treatment Plants, and other high humidity / corrosive environments, the ALC option with all calorized aluminized tubes is recommended.

GAS TYPE	BURNER PRESSURE	SUPPLY PRESSURE		VOLTAGE	AMPS	IGNITION TYPE	FLUE CONNECTION	OUTSIDE COMBUSTION AIR CONNECTION
		MIN	MAX					
NATURAL	3.5" W.C.	5" W.C.*	14" W.C.	120 VAC	1.8	DIRECT SPARK	4" Round	4" Round
PROPANE	10" W.C.	11" W.C.*	14" W.C.	60 HZ				



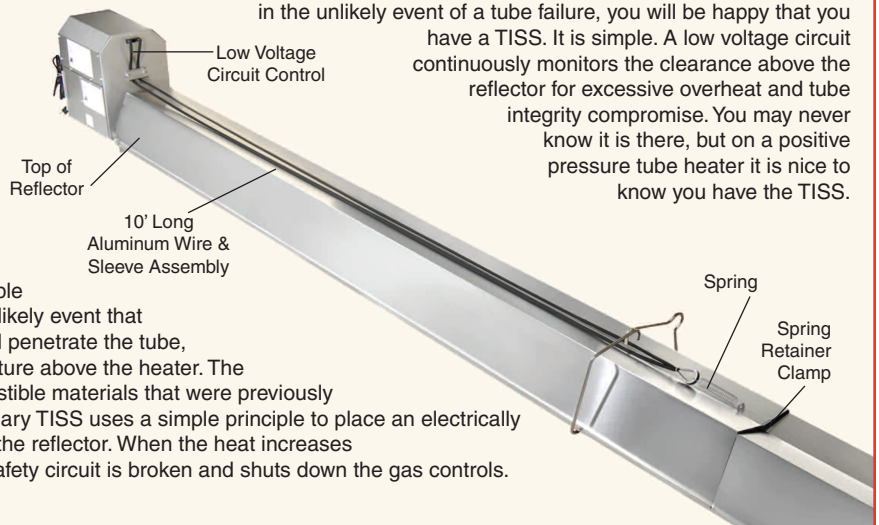
# INNOVATIVE TUBE INTEGRITY SAFETY SYSTEM\* (TISS™)

Space-Ray's newly developed Tube Integrity Safety System\* (TISS) provides peace of mind. It may never be needed, but in the unlikely event of a tube failure, you will be happy that you have a TISS. It is simple. A low voltage circuit continuously monitors the clearance above the reflector for excessive overheat and tube integrity compromise. You may never know it is there, but on a positive pressure tube heater it is nice to know you have the TISS.

## How the TISS™ Works

Space-Ray's innovative safety feature TISS provides the ultimate in fire safety protection available for positive pressure radiant tube heaters. In the unlikely event that the heat exchanger tube burns through, a flame will penetrate the tube, melt the reflector, and rapidly increase the temperature above the heater. The exposed flame will potentially set fire to any combustible materials that were previously safe distances away from the heater. The revolutionary TISS uses a simple principle to place an electrically charged insulated aluminum wire in tension above the reflector. When the heat increases due to heat exchanger failure, the wire melts, the safety circuit is broken and shuts down the gas controls.

\* US & Worldwide Patents Pending



## DIMENSIONS

PTS - BOTTOM VIEW		PTS - END VIEW	
MODEL	TOTAL TUBE LENGTH (FT)	OVERALL DIMENSION "L"(FT)	
PTS (40)	10'	11' 2"	
PTS (40, 50, 75)	20'	21' 2"	
PTS (50, 75, 100, 125)	30'	31' 2"	
PTS (100, 125, 150)	40'	41' 2"	
PTS (125, 150, 175, 200)	50'	51' 2"	
PTS (150, 175, 200)	60'	61' 2"	
PTS (200)	70'	71' 2"	

PTU - BOTTOM VIEW		PTU - END VIEW	
MODEL	TOTAL TUBE LENGTH (FT)	OVERALL DIMENSION "L" (FT)	
PTU (40, 50, 75)	20'	12' 5"	
PTU (50, 75, 100, 125)	30'	17' 5"	
PTU (100, 125, 150)	40'	22' 5"	
PTU (125, 150, 175, 200)	50'	27' 5"	
PTU (150, 175, 200)	60'	32' 5"	
PTU (175, 200)	70'	37' 5"	

PTS AND PTU BURNER BOX		PTS OPTIONS
<p>24V Thermostat Connection Standard Outside Combustion Air Collar Diaphragm Air Safety Switch 1/2" MPT Gas Connection Step Opening Gas Valve Monitoring Lights Three Prong Power Cord Connection Burner Box Dimensions (10" W x 14" L x 14" H)</p> <p>TISS Connection Totally Enclosed Blower Assembly Heavy Duty Cast Iron Burner Hinged Access Doors Flanged Connection To Ensure Proper Alignment</p>		<p><b>CORNER REFLECTOR</b></p> <p><b>90° ELBOW</b></p> <p>Heavy Duty Reflector Support Eliminates Reflector Separation</p>

## MINIMUM RECOMMENDED MOUNTING HEIGHTS

MODEL	HEIGHT AT HORIZONTAL	HEIGHT AT 45° ANGLE	MODEL	HEIGHT AT HORIZONTAL	HEIGHT AT 45° ANGLE
PTS/U 40	10 feet	9 feet	PTS/U 125	14 feet	13 feet
PTS/U 50	11 feet	10 feet	PTS/U 150	15 feet	14 feet
PTS/U 75	13 feet	12 feet	PTS/U 175	16 feet	15 feet
PTS/U 100	14 feet	13 feet	PTS/U 200	18 feet	17 feet

This chart is intended as a guide only, as heaters may be mounted at various heights and angles. Since straight tube heaters are always hotter at the burner end than at the exhaust end, always observe the minimum recommended mounting heights shown above and mount heaters as high as possible. Use PTU series for spot heating. Please consult your local Space-Ray Representative for a detailed analysis of your particular infrared heating requirements.

## MINIMUM CLEARANCES TO COMBUSTIBLES

MINIMUM CLEARANCES TO COMBUSTIBLES	MODEL NO.	SIDE	CEILING	BELOW	END	(45°) FRONT	(45°) REAR
	PTS/U (40, 50)	27"	6"	40"	30"	48"	12"
	PTS/U (75)	27"	6"	60"	30"	48"	12"
	PTS/U (100)	66"	6"	88"***	40"	66"	20"
	PTS/U (125)	66"	6"	101"***	40"	66"	20"
	PTS/U (150, 175)	84"	6"	106"***	48"	84"	24"
	PTS/U (200)	86"	18"	132"***	48"	84"	24"

\*When used indirect vented, clearances to ceiling from top of exhaust hood must be 12" on PTS/U (50-75), and 18" on PTS/U (100-200). If optional corner or U-bend reflectors are not used, clearance must be 18". \*\*Clearance below the tube reduces to 72" 20 ft. downstream from the control box. Note: Consult factory if reduced clearances are required.

## PTS/PTU SERIES LAYOUTS

The PTS/PTU series, with more than 100 different configurations, offers optimum flexibility in custom designing an infrared heating system. The PTS series is available in multiple configurations (straight, L, Z, and expanded U-shape) with lengths from 10' to 70' long. For added versatility, 90° elbows, corner reflectors, and side reflectors are available for close area mounting near walls, doors, and corners. The PTU series is available in seven different configurations and provides more uniform radiant heat energy distribution. The PTU series is ideal for high heat loss areas and spot heating.

LEGEND	PTS SERIES	PTU SERIES
Burner Box 10 FT. BODY SECTION 5 FT. BODY SECTION 90° ELBOW 180° U BEND	STRAIGHT   L-SHAPE   EXPANDED U-SHAPE   Z-SHAPE  40 FT SYSTEM	 40 FT SYSTEM

### COMBUSTION AIR AND VENTILATION

Combustion air and venting requirements for all gas-fired heating equipment must be provided per the National Fuel Gas Code NFPA54 or the authority having jurisdiction over the installation. In contaminated atmospheres or high humidity areas, optional outside air for combustion can be supplied. Heaters can be common vented, vented, or indirect vented. Refer to the Installation and Operation Instructions for further information. A vented installation must be vented to the outside of the building with a flue pipe. An indirect vented installation requires a minimum ventilation flow of 4 CFM per 1000 Btu/hr of total installed heater capacity on natural gas by either gravity or power ventilation (4.18 CFM per 1000 Btu/hr for propane). For indirect vented applications, building exhaust openings must be located above the level of the heaters and inlet air openings must be located below the level of the heaters.

### FOR YOUR SAFETY

OPERATE SPACE-RAY GAS INFRARED HEATERS WITH PROPER CARE AND OBSERVE ALL SAFETY PRECAUTIONS. Installation and service must be performed by a licensed contractor. The installation must conform to local codes. In the absence of local codes, the installation must conform to the National Fuel Gas Code ANSI Z223.1 (latest edition, also known as NFPA54) or CAN / CSA-B149 installation codes (latest edition). These codes are available from the National Fire Protection Association, Inc., Batterymarch Park, Quincy, MA 02269 or the Canadian Gas Association, 55 Scarsdale Road, Toronto, Ontario MB3 2R3 Canada.



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