



## Scanner Insulating Jacket

P/N 97-1047, 97-1048

P/N 97-1051, 97-1058

P/N 97-1067, 97-1069

P/N 97-1087, 97-1104

P/N 97-1109

## Vortex-tube Cooler Kit

P/N 60-2720

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### APPLICATION

In high ambient temperature applications, cooling air applied to the scanner's 3/8" port may be unable to maintain the scanner's temperature below published limits. An effective solution may be to install the scanner in an insulating jacket, and air purge the space between the jacket and the scanner.

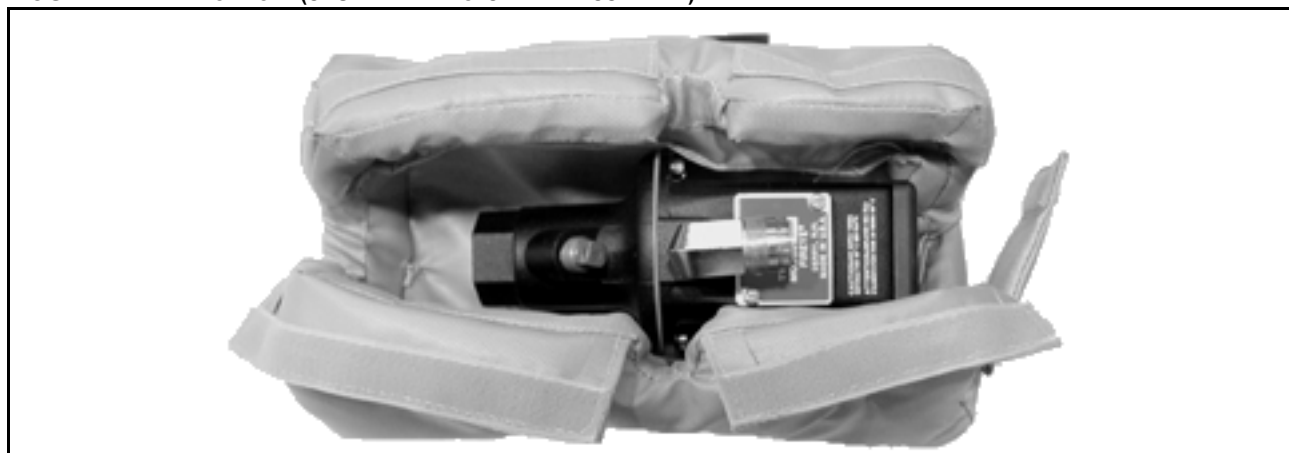
Vortex-Tube Cooler Kit, P/N 60-2720, is used to generate and flow chilled air between the jacket and scanner. The actual cooling effect will be dependent upon the pressure and temperature of the compressed air supplied to the vortex-tube.

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### INSULATING JACKETS

The flexible quilted jacket wraps around the scanner and is secured with hoop & loop seam fasteners. Holes are provided for scanner cable entry, 1" sight-pipe entry, and vortex-tube cooling air entry. A flap on the rear of the jacket allows access to view the back of the scanners where required.

FIGURE 1. 97-1047 (SHOWN WITH 45FS1 FLAME SCANNER)





## INSULATING JACKET MATERIAL SPECIFICATION

- External Covering:** SIL #1700  
 Silicone rubber-impregnated fiberglass fabric  
 Oil and chemical resistant  
 Flame resistant  
 Temperature resistance: -65°F (-54°C), +500°F(+260°C)
- Internal Insulation:** ACTMAT 1200 Insulation, 1" thick  
 Textile glass fiber, asbestos free  
 Non-combustible, non-toxic

## INSULATING JACKET APPLICATIONS

PART NUMBER	SCANNER APPLICATION	JACKET DIMENSIONS (Approximate)	SHIPPING WEIGHT
97-1047	Fits all 45UV5, 45RM, 45FS1, 45UVFS1 (except EX and CEX models)	13 ½" (343mm) long x 6 ½" (165mm) diameter	2.7 lbs. (1.2 kg)
97-1048	Fits all 95IR, 95UV, 95DS InSight I scanners (except CEX models)	12" (305mm) long x 6 ½" (165mm) diameter	2.5 lbs. (1.1 kg)
97-1051	Fits all 55UV5, 65UV5, and C9501 through C9707 (except C9506 and C9508)	9" (229mm) long x 7" (178mm) wide and deep	2.8 lbs. (1.3 kg)
97-1058	Fits CEX models of 45, 85, and 95-Series InSight I scanners	15" (381mm) long x 7 ½" (191mm) diameter	3.2 lbs. (1.5 kg)
97-1067	Fits all 85UV and 85IR Phoenix	13" (330mm) long x 6 ½" (165mm) diameter	2.2 lbs. (1.0 kg)
97-1069	Fits 48PT2-CEX and UV1A-1-CEX	8 ¾" (222mm) long x 5 ½" (140mm) diameter	
97-1087	Fits 95DSS3 InSight II, standard and CEX models (all except 95DSS3-1CEXSS and 95DSS3-1CEX-2)	16 ½" (419 mm) long x 7 ½" (191 mm) diameter	3.1 lbs. (1.4 kg)
97-1104	Fits 105F1-1 Paragon (all except CEX model)	16" (406 mm) long x 8 ½" (216 mm) diameter	3.5 lbs. (1.6 kg)
97-1109	Fits 95DSS3-1CEXSS and 95DSS3-1CEX-2 InSight II, and 105F1-1CEX Paragon	16" (406 mm) long x 8 ½" (216 mm) diameter	3.5 lbs. (1.6 kg)

## VORTEX-TUBE COOLER KIT, P/N 60-2720

The stainless steel vortex-tube contains no moving parts and operates on ordinary compressed air. It is secured to an opening on the side of the insulating blanket with hardware provided in the kit.

Compressed air is supplied to the 1/4" NPT male fitting on the side of the tube. The tube separates the air into two streams. The "cool" air stream is blown into the space between the insulating jacket and the scanner, thereby lowering the scanner's internal temperature. The "warm" air stream is exhausted at the bottom of the tube.

The vortex-tube lowers the temperature of the compressed air supplied to the tube as shown in the table below. The resulting decrease in scanner internal temperature will be slightly less than the drop in compressed air temperature.



Nominal temperature drop of compressed air supply at various supply pressures:

AIR SUPPLY PRESSURE, PSIG	20	40	60	80	100	120
AIR TEMPERATURE DROP °F (°C)	28 (16)	38 (21)	46 (26)	50 (28)	54 (30)	55 (31)

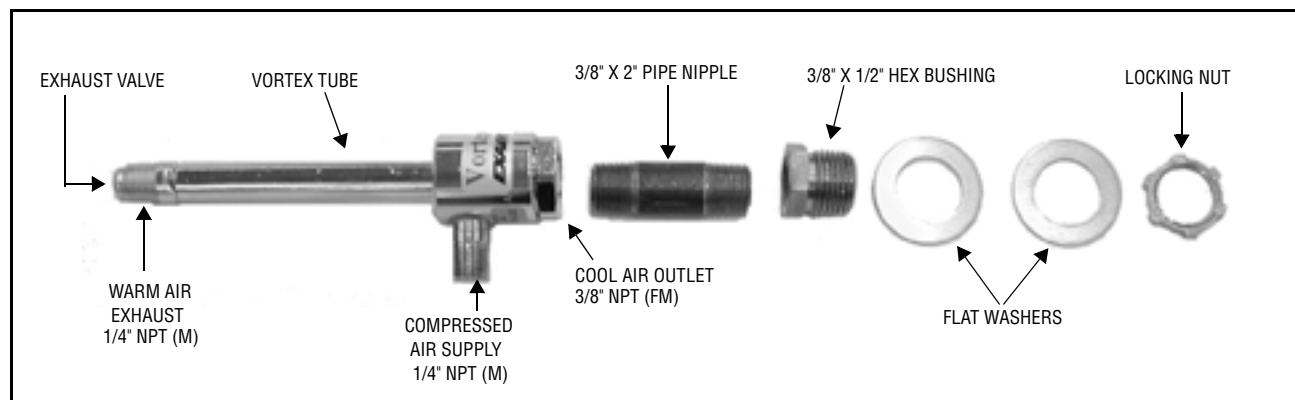
### Compressed Air Supply Requirements:

Pressure: 80-110 PSIG optimum, (20 PSIG min.)  
Volume: 10 SCFM (at 100 PSIG)  
Filtration: Clean, dry, filtered to 25 microns or less

### Dimensions:

Length: 7 1/2" (191mm), installed  
Shipping weight: 0.9 lbs. (0.4 kg)

## VORTEX TUBE, KIT ASSEMBLY



1. Attach the 3/8" NPT pipe nipple to the vortex-tube cool air outlet.
2. Attach the 3/8" x 1/2" hex bushing to the pipe nipple.
3. Install one flat washer on the hex bushing.
4. Insert the hex bushing into the through-hole on the bottom of the insulating jacket.
5. Secure the vortex-tube assembly to the insulating jacket with the second flat washer and locking nut.
6. Wrap the insulating jacket around the installed flame scanner and secure with the with the hook-and-loop seam fastener.

*Note: The insulating jacket does not allow easy access to the scanner housing cooling air tap. It is recommended that this cooling air tap be plugged, and cooling/purge air be connected to the scanner sight pipe at a 1" tee or wye located between the scanner and the burner.*

7. Connect the compressed air supply to the 1/4" NPT male fitting on the side of the vortex-tube.

*Note: Support the compressed air supply line to avoid stress on the insulating jacket.*

8. The temperature of the cool air produced by the vortex tube may be adjusted by the slotted Exhaust Valve on the vortex tube tip. **The exhaust valve is factory set at 1-turn open.** Further opening the valve (counter-clockwise) will lower the cool air temperature, but will reduce the cool air flow. Further closing the valve (clockwise) will raise the cool air temperature, but will increase the cool air flow.



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