

MODEL 076B
RADIATION SHIELD
OPERATION MANUAL



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076B RADIATION SHIELD OPERATION MANUAL

1.0 GENERAL INFORMATION

- 1.1 The Met One Instruments Power-Aspirated Radiation shield consists of a large primary tube for mounting up to four Model 061 or T-200 sensors; two lightweight aluminum cylinder shields, painted with a gloss enamel on the outer surfaces for maximum reflection, and an aspirator motor with fan that requires little or no maintenance. The Model 061 Ambient Temperature, T-200 Ambient / Delta Temperature, 083E or 085 Relative Humidity sensors are generally used with shield.
- 1.2 The 076B has an internal junction box that allows easy field connection of sensors without requiring soldering or potting. The internal junction box minimizes the problems that are associated with the dirt/moisture/resistance paths between the connections on exposed connectors. The 076B will allow the customer to replace sensors easily in the field without re-soldering and re-potting.
- 1.3 A single sensor cable (2144) is used for all connections whether relative humidity, dew point, Delta temperature, ambient temperature or combinations of above. Refer to drawing 076B-1.

Table 1-1
076B Radiation Shield Specifications

Radiation Error	Less than 0.05 under maximum solar radiation of 1.6 gm-cal/cm ² /min	
Power Requirement	115 V 60 Hz @ 1 amp or less 220 V Optional	
Temperature	-50°C to +85°C	
Weight	5.5 pounds	
<u>Sensor Capacity</u>	<u>Sensors Mounted</u>	
Shield Model	061/T-200	083D
076B-1	1 to 4	1
076B-2	1 to 4	1

2.0 INSTALLATION

CAUTION:

To prevent damage to the sensor do not apply pressure or load to the aspirator tube during removal from the shipping tube or carton.

- 2.1 The Radiation Shield is designed to slide onto a horizontally mounted instrument mounting arm. The mounting arm may be the 5307 mounting arm kit or other ¾ inch I.P.S. pipe suitably mounted.
- 2.2 Slide the top hat onto the tower mounting arm tighten the four Allen Screws to lock into place.
- 2.3 Attach the Radiation Shield to the top hat in quick disconnect box with the radiation shield inlet facing down and tighten side clamp to fasten.
- 2.4 Connect AC and sensor cables and route to AC power source and translator respectively. Refer to 076B-1 wiring connections.
- 2.5 Apply power and verify that aspirator motor is operating.
- 2.6 Check to see that sensor output is being recorded.

3.0 MAINTANCE AND TROUBLE SHOOTING

Table 3-1
076B Troubleshooting Table

<u>Symptom</u>	<u>Probable Cause</u>	<u>Solution</u>
Fan does not operate	Loss of AC power	Check AC source Check all cables
	Motor failure	Replace fan

3.1 Repair Information

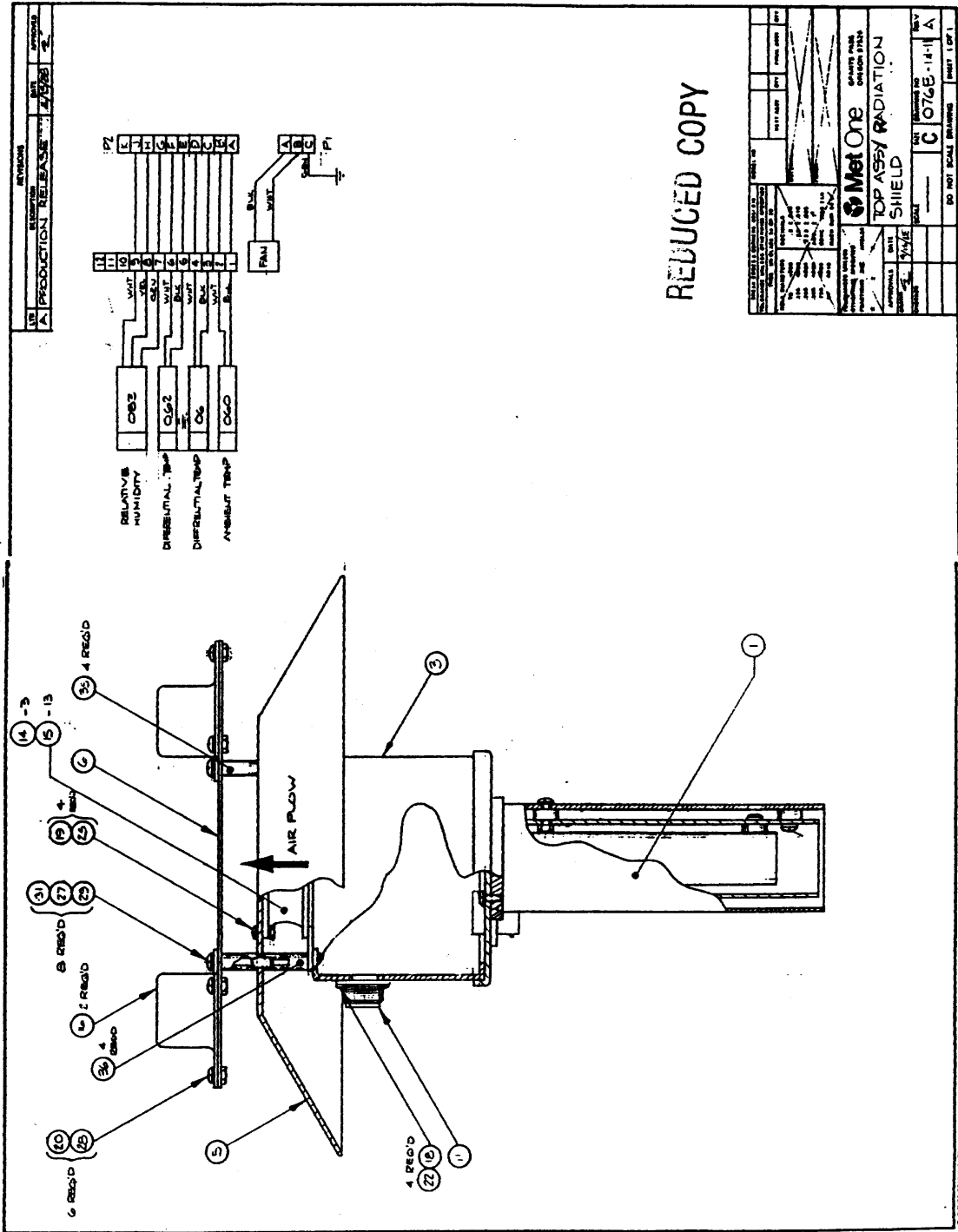
A. Repair of the Power Aspirated Radiation Shield is limited to replacement of the aspirator motor.

B. Aspirator Motor Replacement

1. Remove all cables to shield and remove entire shield assembly from tower.
2. Separate shield from quick disconnect box.
3. Unsolder motor wires from receptacle. Note color and pin coding.
4. Remove top hat from shield.
5. Remove fan assembly.
6. Install new fan assembly and secure.
7. Solder motor wires to the proper pins as noted under "C".
8. Temporarily connect power and verify fan operation.
9. Re-install fan housing assembly to the Radiation Shield.
10. Install assembly on tower and verify correct operation.

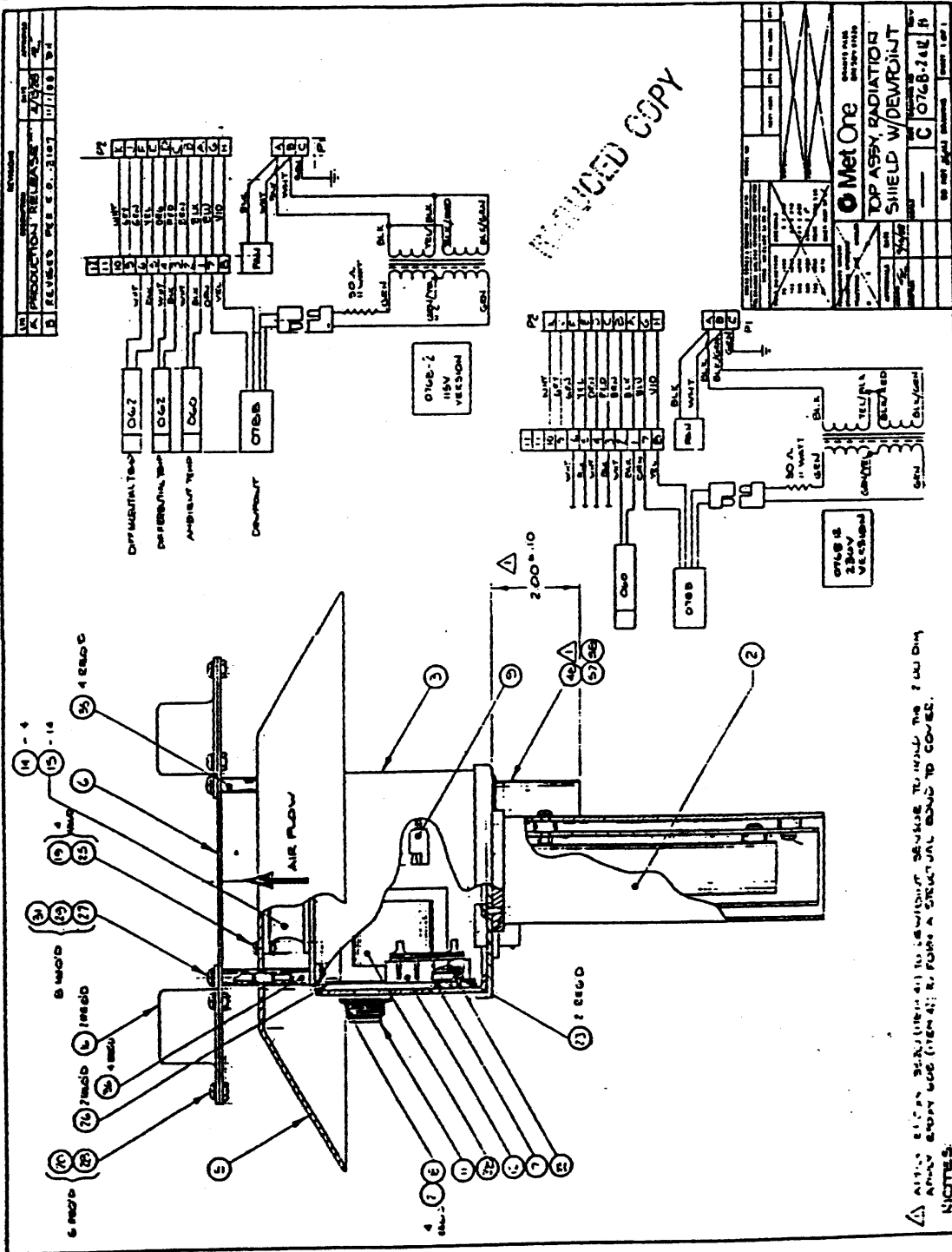
Table 2-2
Replaceable Parts List

Motor (120 VAC)	590050
Motor (220 VAC)	590051



REV	DESCRIPTION	DATE	APPROVED
1	PRODUCTION RELEASE	7/2/88	

		QUANTITY PER TOP ASSY RADIATION SHIELD	REV C 076B-14-1 A
PART NO. 076B-14-1	DATE 3/1/88	BY ...	SHEET 1 OF 1



10	PRODUCTION RELEASE	27/88
11	REVISED PER C.O. 3107	11/88 WJ

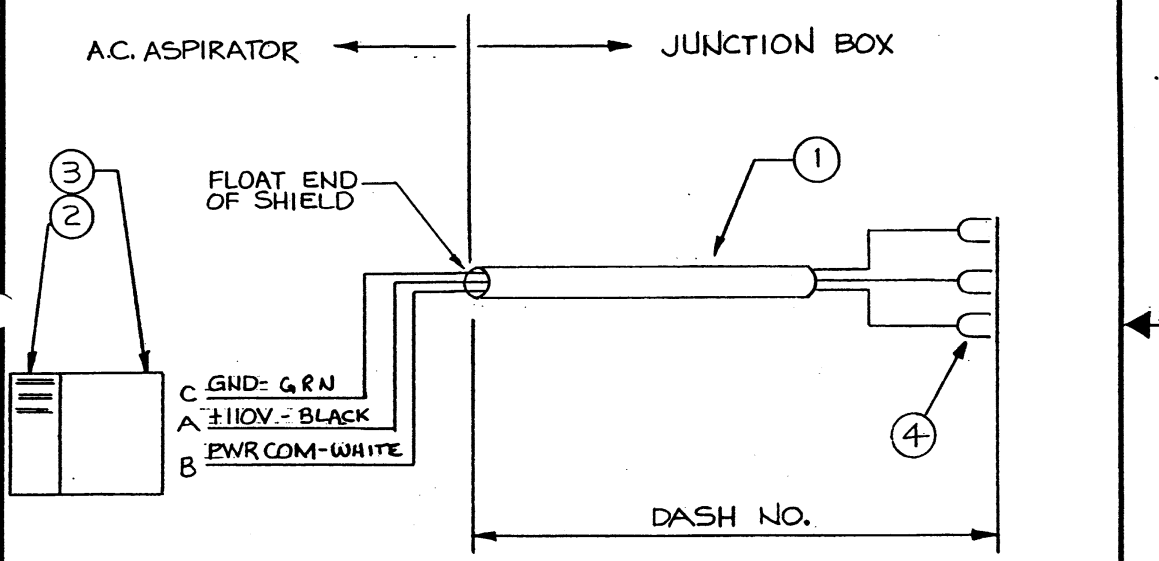
Met One		30000 1000
TOP ASSY, RADIATION SHIELD W/DEWPOINT		30000 1000
Part No.	076B-980	Rev. 1
Rev.	C	076B-980

▲ ALL 1/8" SLITS SHALL BE FILLED WITH SILICONE SEALANT TO PREVENT LEAKAGE. TRIM THE 2 1/4" DIA. HOLES EVERY 6" (MIN 4); 8" FROM A STRUCTURAL EDGE TO COVER.

NOTES:
 1. SEE DRAWING 076B-980 FOR COMPLETE ASSEMBLY.

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	REV.	DESCRIPTION	DATE	APPROVED
		A	REL PER EO 1690	4/9/85	
		B	PER EO 3082	8/12/88	

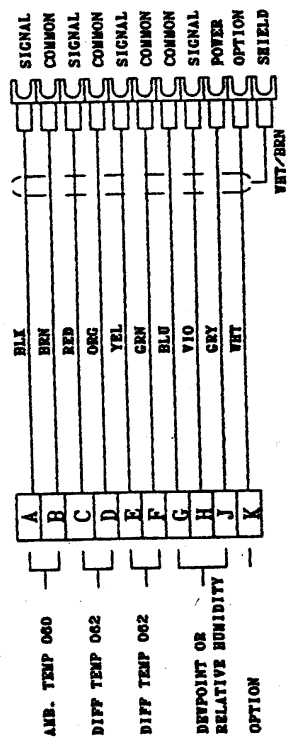
1954-XY
 UTS. NO.



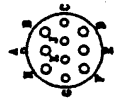
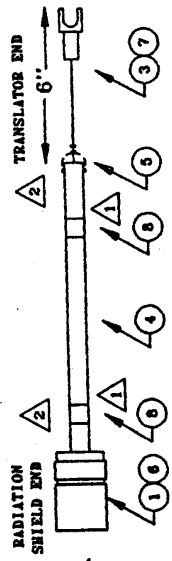
DASH NO. IS CABLE LENGTH IN FEET.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES XX± ± .XXX± ±	CONTRACT NO.		CABLE ASSY. ASPIRATOR TO TOWER LEVEL J-BOX		
	APPROVALS	DATE			
MATERIAL	DRAWN CB	4/9/85	SIZE A	FSCM NO.	DWG. NO. 1954-
FINISH	CHECKED				REV. A
DO NOT SCALE DRAWING	ISSUED		SCALE		SHEET 1 OF 1

REVISING		DATE	APPROVED
REV	DESCRIPTION		
D	REDRAWN AND ADD PARTS LIST	9/13/91	DR



ITEM	PART NO.	DESCRIPTION	QTY
1	500296	CONNECTOR, 10 PIN	1
2			
3	900193	LUG, SPADE, #6	6
4	400017	CABLE, 12 WIRE, SHIELDED	A/R
5	960096	SLEEVING, 3/8, SHRINK	A/R
6	960093	SLEEVING, 3/32, SHRINK	A/R
7	980310	WIRE, 22 AWG, VET/BRN	6"
8	960085	SLEEVING, 1/2", CLEAR	A/R
9			
10			



SOLDER CUP VIEW

IDENTIFY CABLE 18" FROM EACH END.
BASE NUMBER = LENGTH IN FEET.

CUT OFF VET/BRN AND VET/BLK WIRES AT BOTH ENDS.
SOLDER VET/BRN WIRE TO SHIELD ON TRANSLATOR END.
USE ITEM 6 TO COVER SOLDER JOINT ON SHIELD.

MET ONE INSTRUMENTS	
ASSY, CABLE, SIGNAL OUT, 076B / JUNCTION BOX	
SEE PART N.	QTY
	2144
SCALE	SET 1 OF 1