Instruction Sheet
P/N 1615074–01

Pro-Swirl Manifold Air Heater

Description

The Pro-Swirl manifold heats air coming from the Pro-Swirl coalescent filter. The heater air then flows through the internal passages of the Pro-Swirl to maintain consistent operating temperatures. Use the following instruction sheet to install and service the manifold air heater.

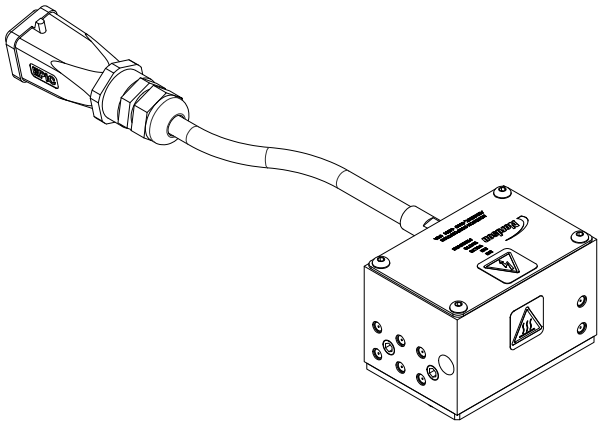

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Figure 1 Manifold Air Heater

Installation

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

WARNING: System or material pressurized. Relieve pressure. Failure to observe this warning may result in serious injury or death.

See Figure 2. Use the following instructions to install the manifold air heater in close proximity to the Pro-Swirl.

Additional parts needed for installation:

- Two straight or 90° high-temperature fittings (application-specific)
- One high-temperature fitting for Pro-Swirl connection
- FEP tubing

NOTE: Instructions and images are for a typical application.

1. Using mounting holes, align the insulator plate (11) between the mounting bracket (12) and the manifold (5).
2. Using the M5 socket screws (9) and flat washers (10), secure the manifold and insulator plate to the mounting bracket.
3. Install the connector fittings (3, 6) into the manifold.
4. Replace the Pro-Swirl (7) fitting with high-temperature elbow fitting (8).
5. Install tubing (2) from high-temperature elbow fitting (8) to manifold outlet fitting (6).
6. Install tubing (2) from manifold inlet fitting (3) to union (1) out to the coalescent filter.
7. Connect the cordset (4) to the Pro-Swirl controller.

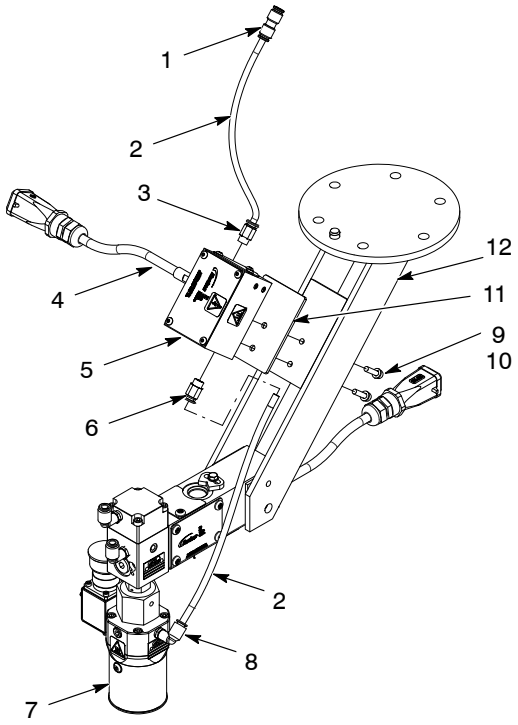

Figure 2 Typical Mounting Shown

1. Union
2. Tubing
3. Inlet fitting, high temperature (application-specific)
4. Cordset
5. Manifold
6. Outlet fitting, high temperature (application-specific)
7. Pro-Swirl
8. High-temperature elbow fitting
9. M5 socket screw
10. Flat washer
11. Insulator plate
12. Mounting bracket

Operation

Operation is dependent upon the system application requirements and the material delivery system. Refer to the applicable system documentation that shipped with the system for detailed operating procedures.

Repair

WARNING: Read and understand this entire section before performing repairs. Contact a Nordson representative regarding these procedures if necessary. Review the following:

- Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.
- High-pressure fluids are extremely dangerous. Do not place any part of your body in front of a dispensing device, drain, or leak in a high pressure system. A jet of high fluid can cause serious injury, toxic poisoning, or death.
- Relieve system and material pressure before disconnecting hoses.
- Disconnect power to the system before servicing.

Heater Cartridge Replacement

Additional parts needed for installation: two wire crimps

See Figure 3.

1. Remove the M4 screws (2) that secure the heated air cover (1) to the manifold (10).
2. Remove the M4 screws (2) that secure the wire cover (6) to the manifold (10).
3. Disconnect the heater cartridge (8) wires from the wire crimps (12).
4. Carefully remove the heater cartridge (8) from the manifold (10).
5. Apply heat sink compound to the replacement heater cartridge.
6. Install the replacement heater cartridge (8) into the manifold (10). Route the heater wires through the manifold holes and connect wires as shown in Figure 3 using new wire crimps (12).
7. Install the wire cover (6) onto the manifold (10) using the M4 screws (2). Tighten the screws to 30 in-lb (3.39 N•m).
8. Install the heated air cover (1) the manifold (10) using the M4 screws (2). Tighten the screws to 30 in-lb (3.39 N•m).
9. Refer to Table 1. After the assembly is complete, check the circuit resistance of the heater cartridge through the heater cartridge cordset connector pins (PINS 1 and 2)

Cordset and RTD Sensor Replacement

Additional parts needed for installation: one wire crimp and one ferrule

See Figure 3.

NOTE: The RTD sensor is contained within the cordset of the manifold air heater. The RTD sensor is replaced by replacing the cordset.

1. Remove the M4 screws (2) that secure the heated air cover (1) to the manifold (10).
2. Remove the M4 screws (2) that secure the wire cover (6) to the manifold (10).
3. Remove the M3 screw (3) and lock washer (4) that secure the cordset (9) ground wires to the manifold (10) and set aside.
4. Disconnect the cordset (9) from the terminal connector (5) and wire crimp (12).
5. Remove the nut (11) that secures the cordset (9) to the manifold (10) and set aside.
6. Remove and discard the cordset.
7. Feed the new cordset wires and RTD through the manifold cordset mounting hole.
8. Secure the cordset (9) tightly to the manifold (10) with nut (11).

9. Secure the cordset (9) ground wires to the manifold (10) using the M3 screw (3) and lock washer (4).
10. Apply heat sink compound to the replacement RTD (7) and install the RTD into the manifold.
11. Connect the cordset leads to the terminal connector using a new ferrule, and the heater leads using a new crimp (12) connector.
12. Install the wire cover (6) onto the manifold (10) using the M4 screws (2). Tighten the screws to 30 in-lb (3.39 N•m).
13. Install the heated air cover (1) the manifold (10) using the M4 screws (2). Tighten the screws to 30 in-lb (3.39 N•m).
14. Refer to Table 1. After the assembly is complete, check the circuit resistance of the heater cartridge through the heater cartridge cordset connector pins (PINS 1 and 2).

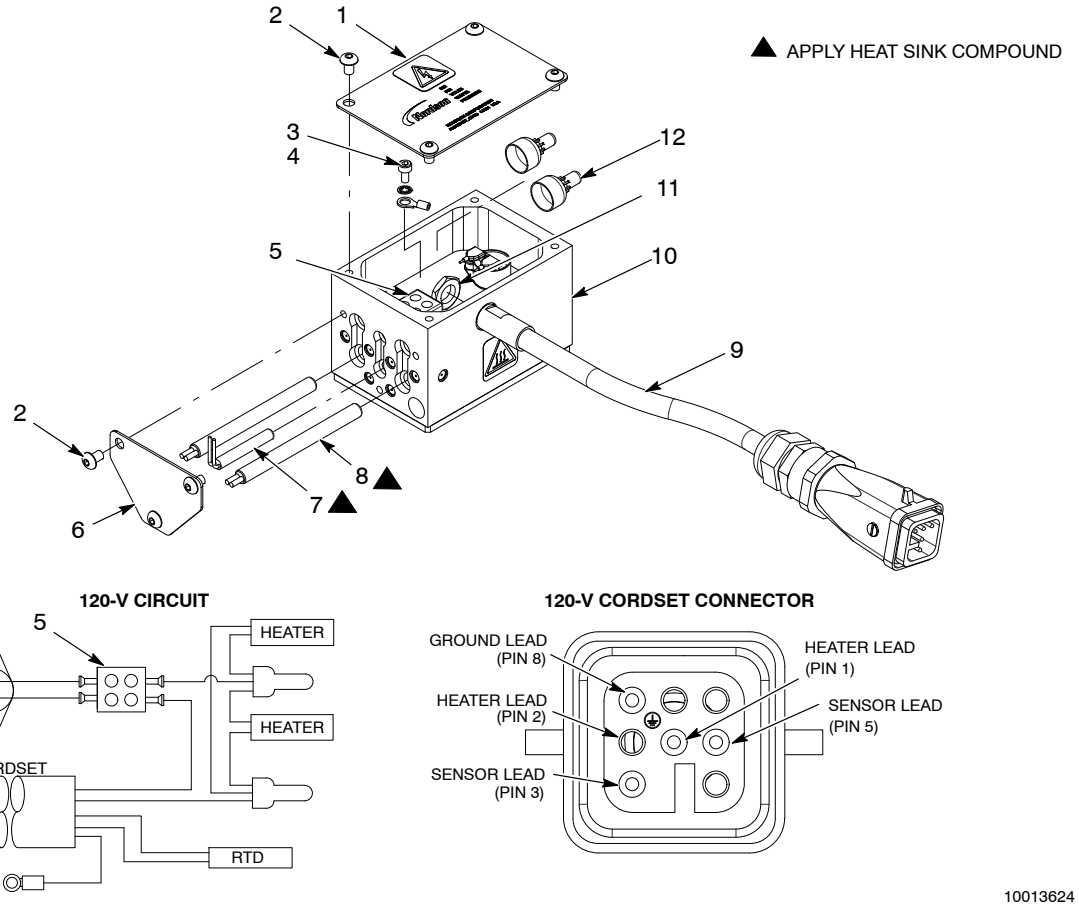

Figure 3 Cordset and RTD Sensor Replacement

1. Heated air cover
2. M4 screw
3. M3 screw
4. Lock washer
5. Terminal connector
6. Wire cover
7. RTD
8. Heater cartridge
9. Cordset
10. Manifold
11. Nut
12. Wire crimp

Specifications

Table 1 Specifications

Air Heater Manifold: 120 V	
Operating Voltage	120 Vac
Power Consumption	150 watts
Cold Resistance Reading Unannealed Heaters	82.1 to 95.8 Ω (ohms)
Cold Resistance Reading Annealed Heaters	73.7 to 100.5 Ω (ohms)
Maximum Temperature	82 °C (180 °F)
Maximum Air Pressure	145 psi (10 bar)

Parts

To order parts, call the Nordson Industrial Coating Systems Customer Support Center at (800) 433-9319 or contact your local Nordson representative.

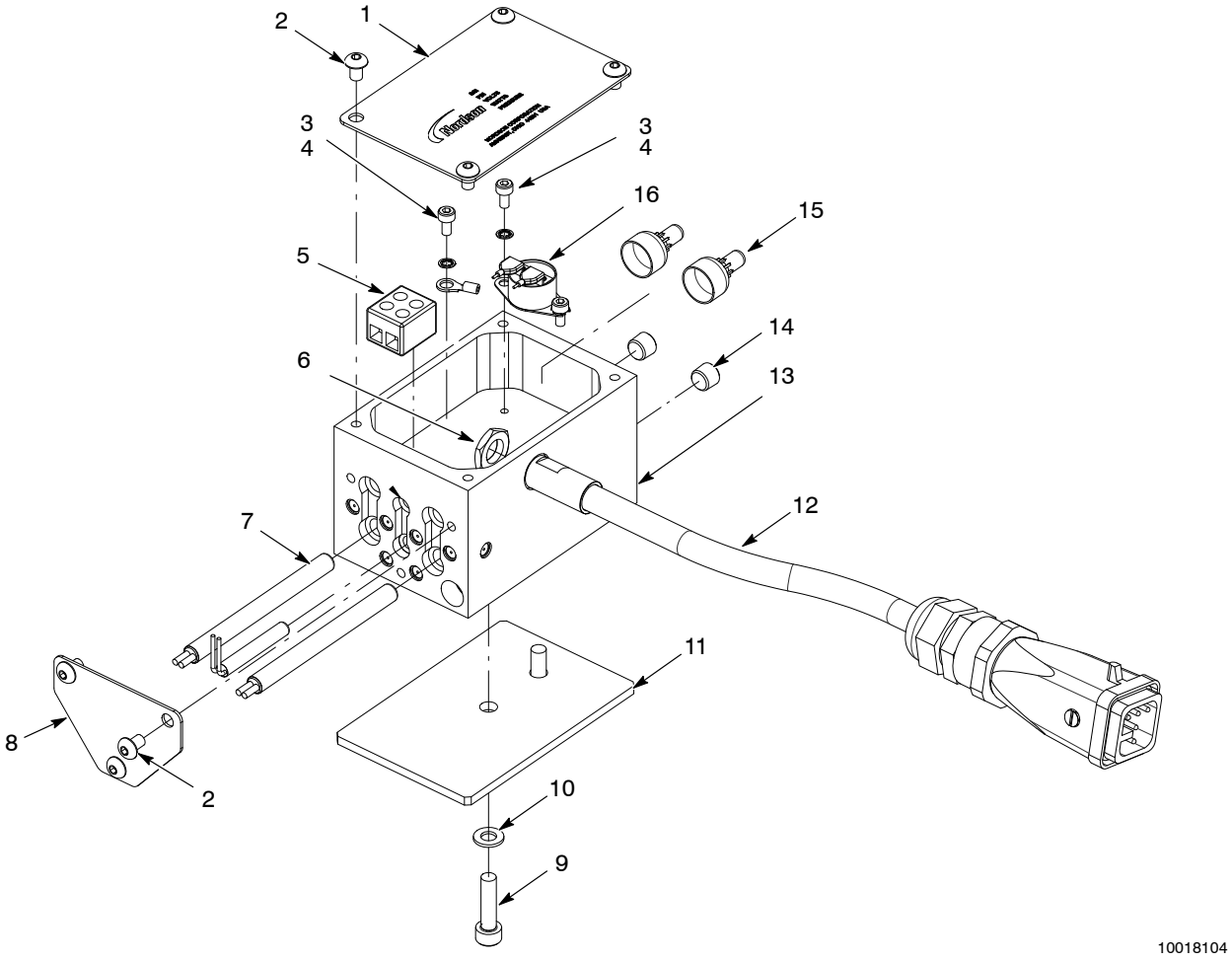

Figure 4 Manifold Air Heater

Item	Part	Description	Quantity	Note
—	1614715	AIR HEATER, manifold, Pro-Swirl, 120 V	1	
1	- - - - - -	• COVER, heated air, manifold, Pro-Swirl, 120 V	1	
2	- - - - - -	• SCREW, button, socket, M4 x 6, zinc	7	
3	- - - - - -	• SCREW, socket, M3 x 6, black, class 12.9 per ISO 4762	3	
4	- - - - - -	• WASHER, lock, M, internal tooth, M3, steel, zinc, per ISO 7089	3	
5	939586	• CONNECTOR, plastic, 2 station	1	
6	984155	• NUT, panel mounting	1	
7	138183	• HEATER, cartridge, 0.25 D, 2.75 L, 300 W, 240 V	2	
8	- - - - - -	• COVER, wire, heated air, manifold, Pro-Swirl, 120 V	1	
9	- - - - - -	• SCREW, socket, M5 x 20, zinc, class 12.9 per ISO 4762	2	
10	- - - - - -	• WASHER, flat, M, regular, M5, steel, zinc, per ISO 7089	2	
11	- - - - - -	• PLATE, insulated, heated air, manifold, Pro-Swirl, 120 V	1	
12	1609379	• CORDSET, manifold, heated, AF, 120 V	1	
13	- - - - - -	• MANIFOLD, heated air, Pro-Swirl, 120 V	1	
14	973466	• PLUG, pipe, flush, $^{1}/_{16}$ with sealant	2	
15	939515	• CONNECTOR, crimp, wire, 22–14	2	
16	1078561	• THERMOSTAT, open on rise, 190 degree, 10A	1	
NS	971521	ELBOW, male, ¼ tube x ⅛ NPT, high temperature	1	A, B
NS	1614073	UNION, straight, ¼ T, high temperature	1	
NS	972784	CONNECTOR, male, ¼ tube x ⅛ NPT, high temperature	1	B
NS	146133	TUBING, FEP, $^{3}/_{16}$-in ID x ¼-in. OD	1	
NS	1078929	FERRULE, wire, non-insulated, 18 AWG	1	

NOTE A: High-temperature elbow fitting must be used on Pro-Swirl with manifold air heater applications.
B: Application-specific fitting for manifold air heater.

Issued 10/18