



Catalog Number 61700-18

High Output Airblast System

USER MANUAL

11/04 1ed

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Section 1 Specifications

Specifications are subject to change without notice.

Component Description	High Output Airblast cleaning system for attachment to selected probes to reduce biogrowth and other types of fouling.
Output Air Pressure (at compressor outlet)	115V Model: 50 psi 230V Model: 40 psi
Output Air Flow Rate (at compressor outlet)	115V Model: 0.66 cfm 230V Model: 0.59 cfm
Maximum Pump Duty	90 seconds for every 4 hours
Compressor Operating Temperature	0 to 50 °C (32 to 122 °F); 95% relative humidity, non-condensing
Compressor Storage Temperature	-20 to 70 °C (-4 to 158 °F); 95% relative humidity, non-condensing
Enclosure	NEMA 4X/IP66 Non-metallic
Power Requirements	115V Model: 115 VAC, 60 Hz, 6.4 Amps
	230V Model: 230 VAC, 50 Hz, 2.5 Amps
Input Fuse Rating	Fuse for 115V Model: T, 8A, 250V Fuse for 230 V Model: T, 5A, 250V
Controller Relay Fuse Rating	T, 5A, 250V (all models)
Pollution Degree/Installation Category	II; II
Compressor Dimensions	40 x 43 x 21 cm (16.5 x 14.5 x 8.5 inches)
Compressor Weight	11.2 kg (24.7 lb)

Section 2 General Information

2.1 Safety Information

Please read this entire manual before unpacking, setting up, or operating this equipment. Pay attention to all danger and caution statements. Failure to do so could result in serious injury to the operator or damage to the equipment.

To ensure that the protection provided by this equipment is not impaired, do not use or install this equipment in any manner other than that specified in this manual.

2.2 Use of Hazard Information

DANGER

Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.






CAUTION

Indicates a potentially hazardous situation that may result in minor or moderate injury.

Note: Information that requires special emphasis.

2.2.1 Precautionary Labels

Read all labels and tags attached to the instrument. Personal injury or damage to the instrument could occur if not observed.

	This symbol, if noted on the instrument, references the instruction manual for operation and/or safety information.
	This symbol, when noted on a product enclosure or barrier, indicates that a risk of electrical shock and/or electrocution exists.
	This symbol, if noted on the product, indicates the need for protective eye wear.
	This symbol, when noted on the product, identifies the location of the connection for Protective Earth (ground).
	This symbol, when noted on the product, identifies the location of a fuse or current limiting device.

2.3 Introduction

The High Output Airblast cleaning system is intended for use in process applications where probe fouling occurs. The High Output Airblast cleaning hardware will automatically clean the probe surface to eliminate slime and other biogrowth. Install the High Output Airblast compressor in an indoor or outdoor location that is not exposed to direct sunlight.

The following items are included as standard components of the self-cleaning kit:

- Tubing, 7.6 m (25 ft)
- Tie wraps
- Washer head
- High Output Airblast compressor with mounting hardware

In addition to the supplied items, the installer must supply common hand tools for assembly, 18–12 AWG wire (for power connection in conduit and for connection between the High Output Airblast and the sc100 controller), and NEMA-rated sealing-type conduit hubs to maintain the environmental rating.

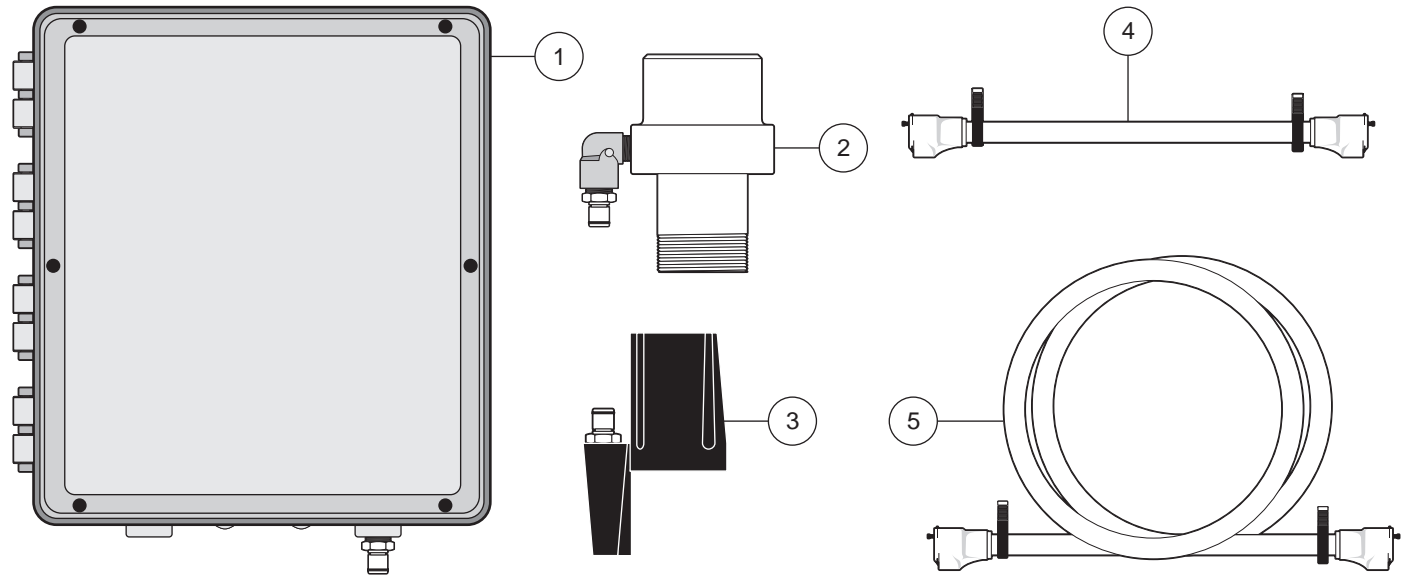
Section 3 Installation

DANGER

Only qualified personnel should perform the installation tasks described in this manual.

3.1 Unpacking the Instrument

Figure 1 High Output Airblast Components



1. Air Compressor	4. Head Assembly Tubing
2. Washer Head Assembly	5. Air Delivery Tubing
3. Airblast Head Assembly	

3.2 Mounting the Air Compressor

CAUTION

Exposing the Air Compressor to direct sunlight may increase the operating temperature above its specified limit. Install the High Output Airblast in an indoor or outdoor location that is not exposed to direct sunlight.

1. Locate the Air Compressor near the installed sensor ([Figure 5](#)). Do not extend the air delivery tubing beyond its standard 25 ft (7.6 m) length to prevent exceeding the capacity of the High Output Airblast System and/or degrading the response time for air delivery.
2. Mount the Air Compressor in a location where ambient temperature will not exceed the High Output Airblast System temperature limits 0 to 50 °C (32 to 115 °F). Determine the mounting method appropriate for the application and attach the hardware accordingly. See [Figure 3](#).

Figure 2 Air Compressor Dimensions

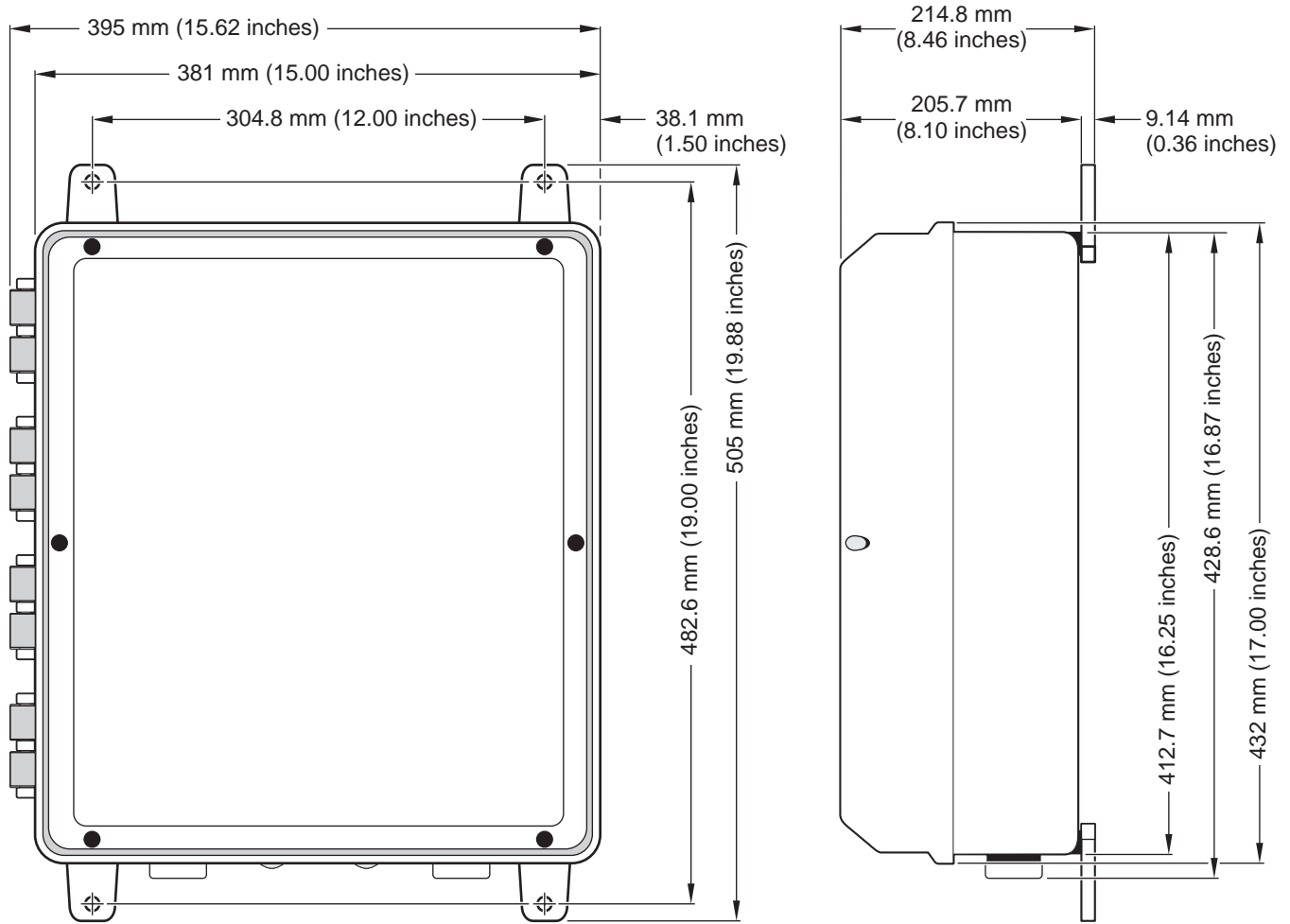
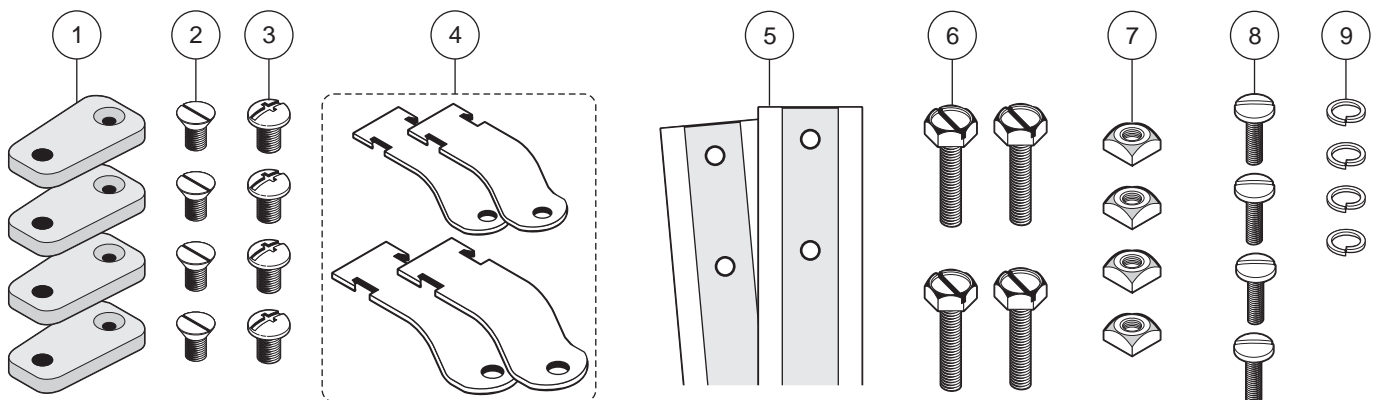
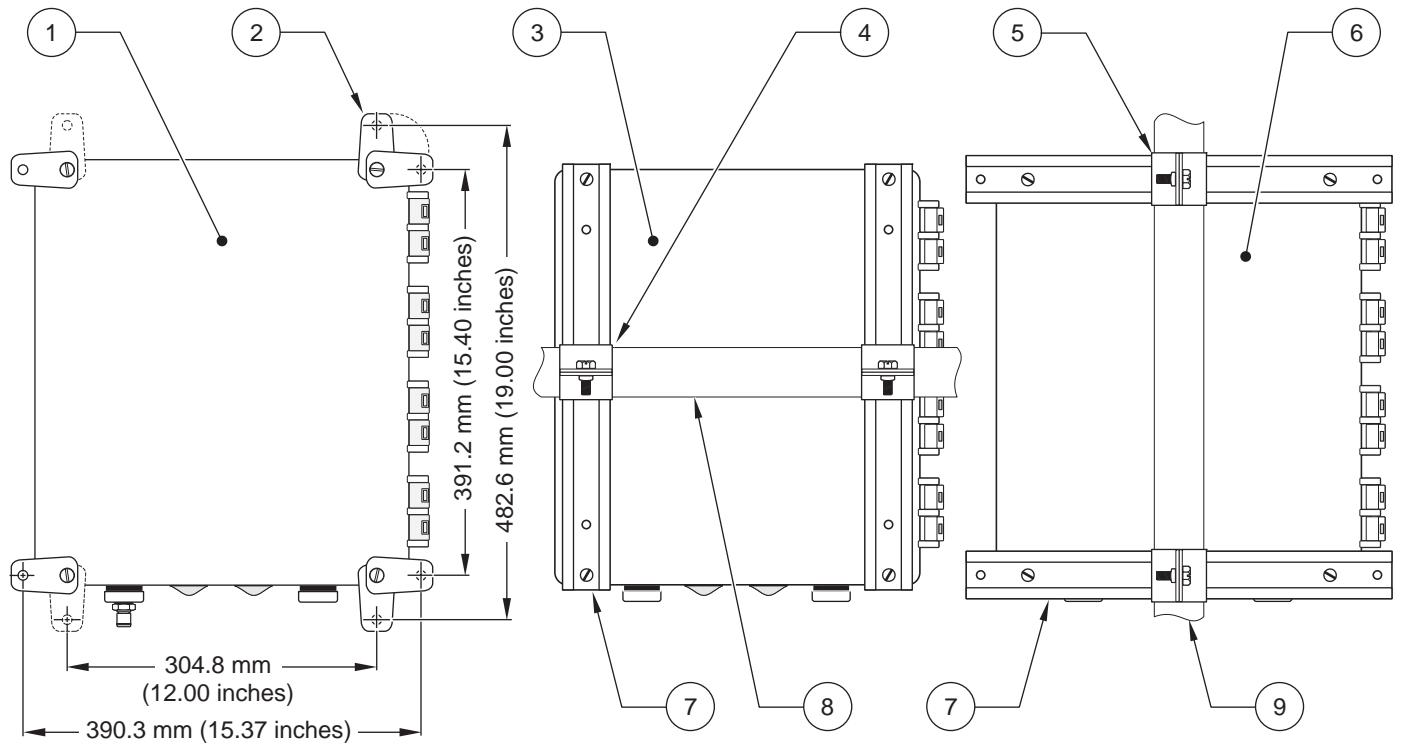


Figure 3 Mounting Hardware



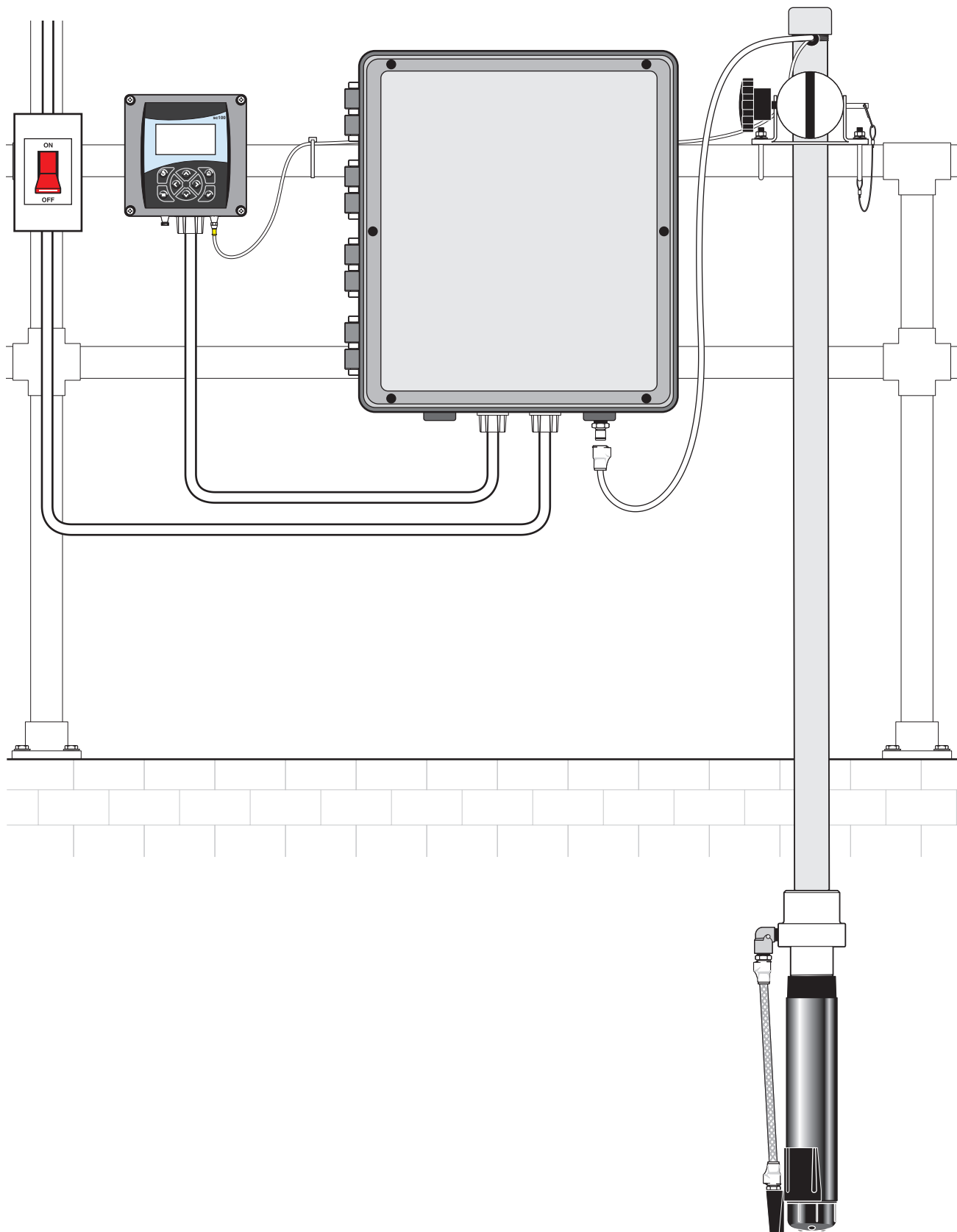
1. Wall Mounting Tabs, (4)	6. Bolt, hex head, slotted, $\frac{5}{16}$ -inch x 1.0-inch, (4)
2. Screw, flathead, slotted, $\frac{1}{4}$ -20 x $\frac{1}{2}$ -inch (4)	7. Nut, square, $\frac{5}{16}$ -inch, (4)
3. Screw, pan head, (4)	8. Screw, pan head, slotted, $\frac{1}{4}$ -20 x $\frac{3}{8}$ -inch, (4)
4. Brackets, (2 pair 1- $\frac{1}{2}$ -inch std., 2 pair 2-inch std.)	9. Lock washer, (4)
5. Uni-strut (2), 16- $\frac{1}{2}$ -inches long	

Figure 4 Compressor Mounting Options



1. Mounting option - wall mounting	6. Mounting option - vertical pipe mount
2. Wall mounting tabs (4)	7. Uni-strut
3. Mounting option - horizontal pipe	8. Horizontal pipe
4. Large brackets	9. Vertical pipe
5. Small brackets	

Figure 5 Typical High Output Airblast System Location Arrangement *



* Conduit and other code specific hardware will be supplied by the customer.

3.3 Electrical Wiring

DANGER

Remove all line power before wiring the High Output Airblast to the analyzer.

DANGER

Conduit bonding is not automatic and must be provided as part of the installation.

Always use the standard three-wire connection arrangement for line power. Use wire and wiring practices that conform to local codes. Add wire lugs to the ends of the wires and connect the wires as shown in [Figure 6 on page 12](#).

The power and safety ground service drops for the instrument must be 18 to 12 AWG with insulation appropriate for applied voltages and routed in conduit connected to a customer-supplied dedicated local disconnect. The dedicated local disconnect must be close to the installed equipment, designed to meet local electrical code, and identified as the disconnecting device for the instrument. See [Figure 6](#) for an example of a recommended local disconnect installation.

See [Figure 6](#) and [Table 1](#) for wiring information.

A power cord less than 3 meters (10 feet) in length with three 18-gauge conductors (including a safety ground wire) and a sealing-type strain relief to maintain the NEMA environmental rating can be used if allowed by local electrical codes.

3.4 Wiring the Controller to the High Output Airblast Compressor

DANGER

The controller relay and AC power connection terminals are designed for only single wire connection. Do not connect more than one wire to each terminal.

Wire the High Output Airblast to the controller relay to switch the High Output Airblast on/off on a timed basis.

3.4.1 Relay Wiring at the Controller

Use 18–12 AWG wire (as determined by load application). Wire gauge less than 18 AWG should not be used.

The manufacturer recommends wiring the High Output Airblast System to Relay C of the controller (or other available relay) and defining a wash cycle to switch power off and on to the High Output Airblast System.

Maximum duty cycle for the High Output Airblast is not to exceed 90 seconds per each four hours of operation.

The controller relays are designed for use with ONLY high voltage (100–230 VAC) and must be fused to limit current to <5 amps. The High Output Airblast Compressor unit is already equipped with an internal fuse to meet this requirement.

Refer to the steps below and [Figure 6](#) for connection details.

1. Ensure all power to both the controller and the High Output Airblast has been disconnected.
2. Connect the wire from the High Output Airblast terminal barrier designated relay COM (common) to the controller Relay COM.
3. Connect the wire from the High Output Airblast terminal barrier designated relay NO (normally open) to the controller Relay NO.

3.4.2 Wiring ac Power to the High Output Airblast System

Refer to [Table 1](#) and [Figure 6](#). Proceed as follows.

1. Connect the ground wire to the ground symbol terminal on the Air Blast System.
2. Connect the neutral wire to the NEUT terminal on the High Output Airblast System.
3. Connect the hot wire to the HOT terminal on the High Output Airblast System.

Table 1 Wiring for Power

Terminal Description	Wire Color Code for North America	Wire Color Code for Europe
Hot (L1/HOT)	Black	Brown
Neutral (NEUT)	White	Blue
Protective Earth (ground symbol)	Green	Green w/yellow tracer

Figure 6 Wiring Schematic for 115 V

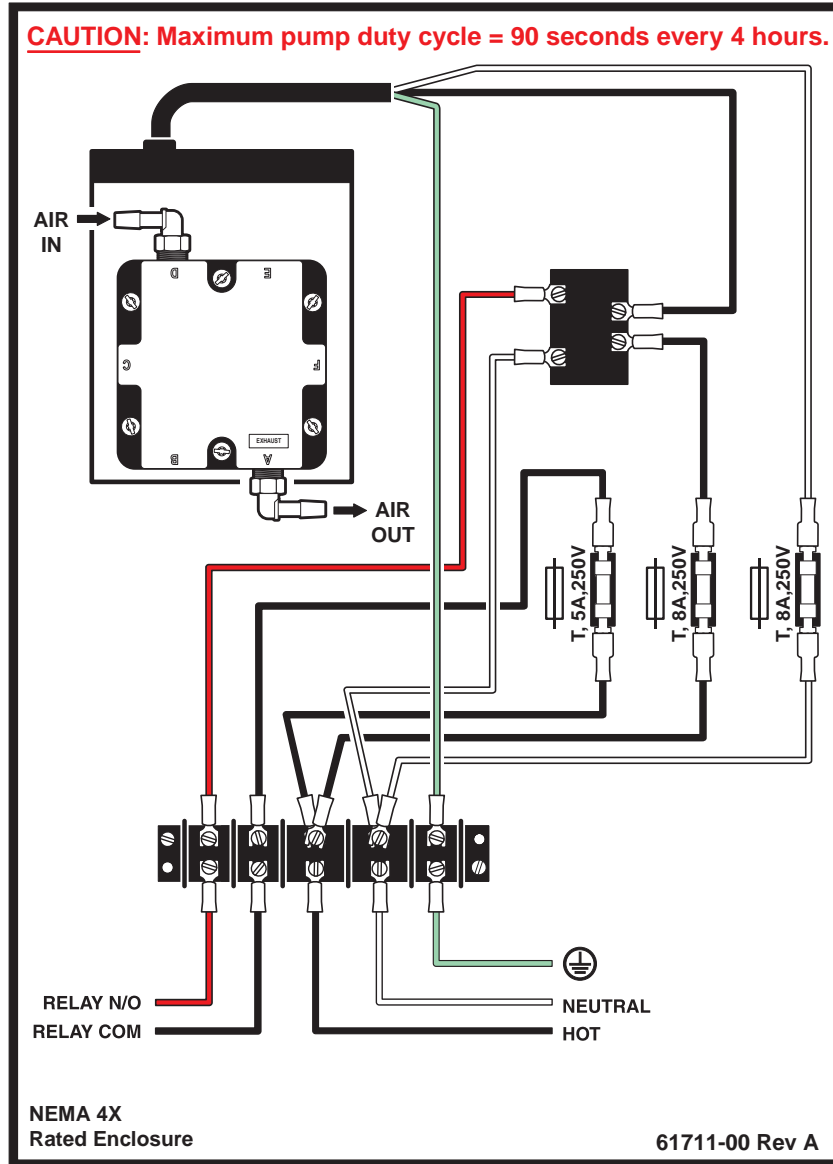


Figure 7 Wiring Schematic for 230V

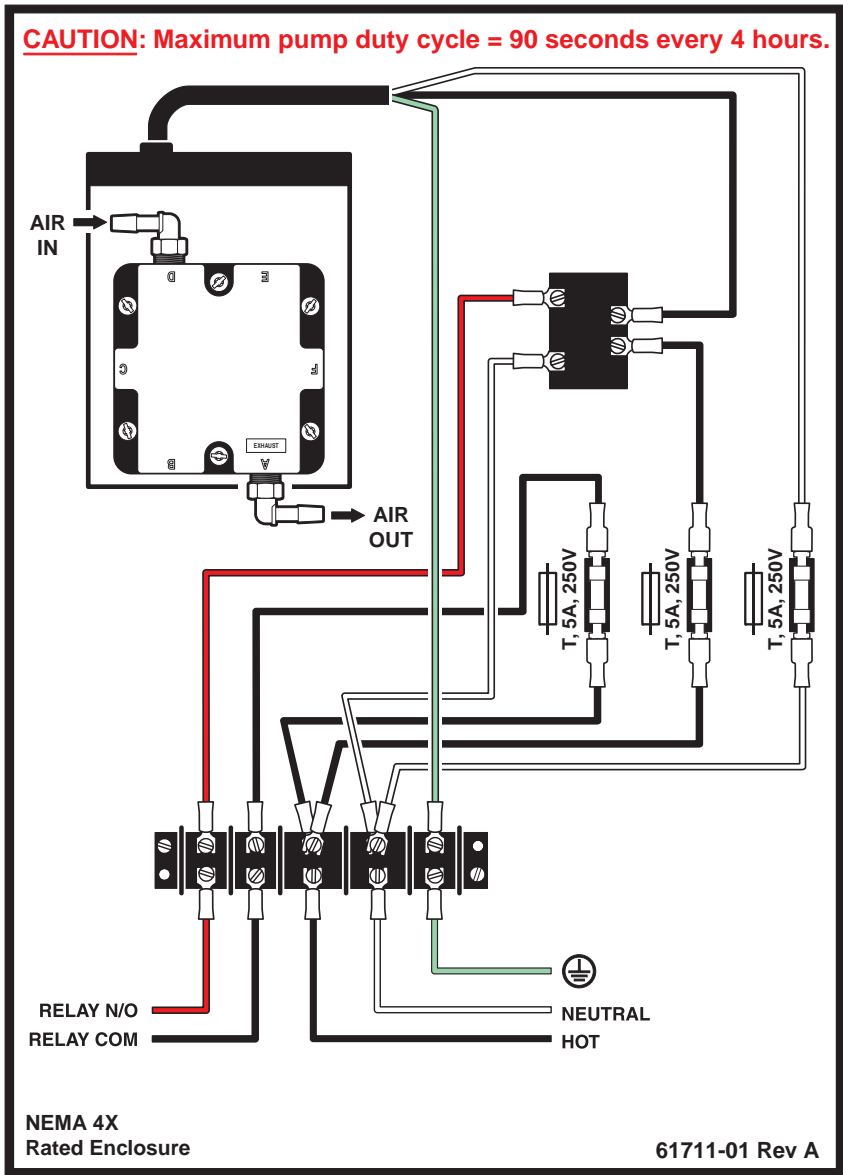
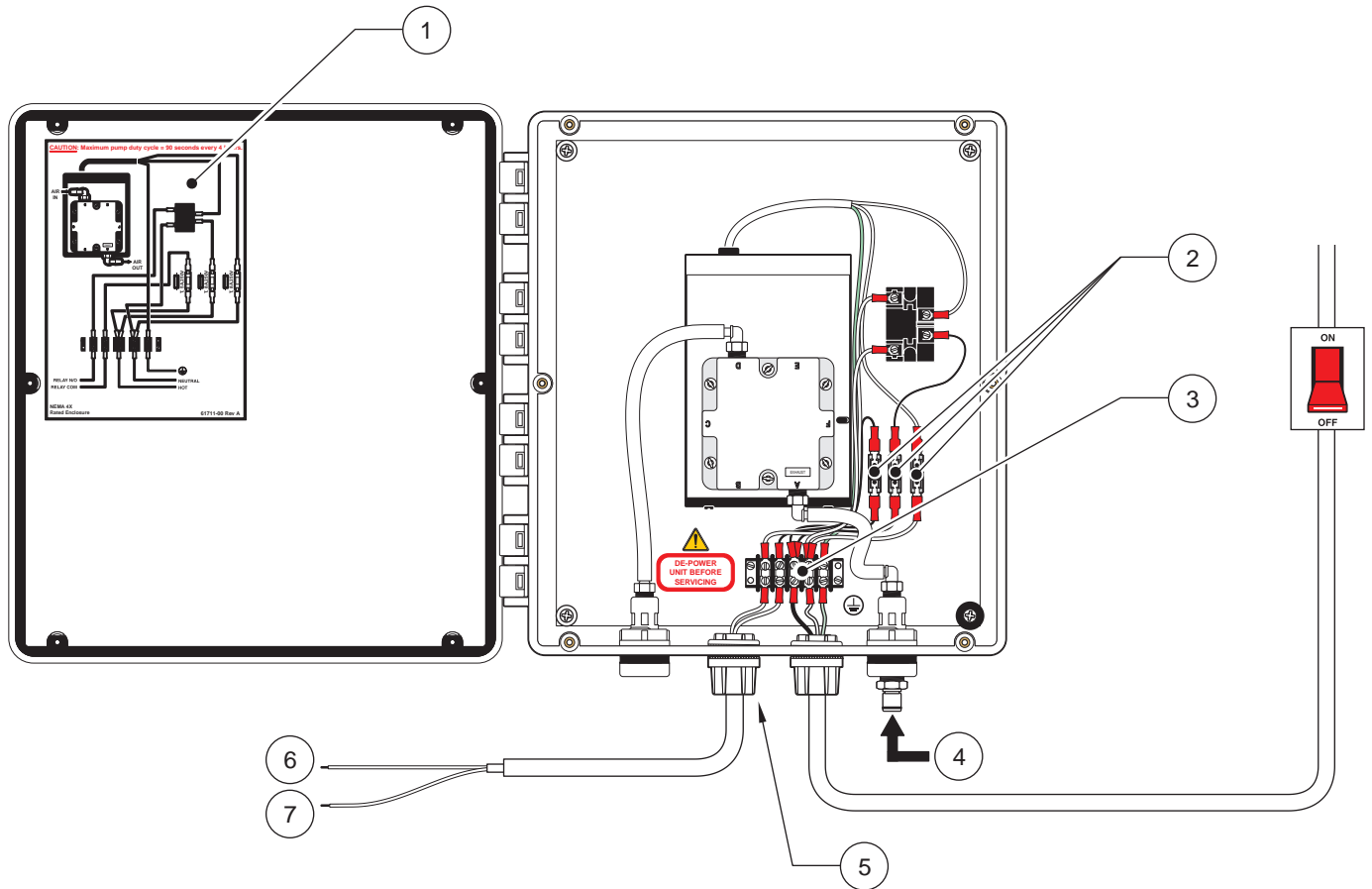


Figure 8 Wiring Connections with Local Disconnect Shown

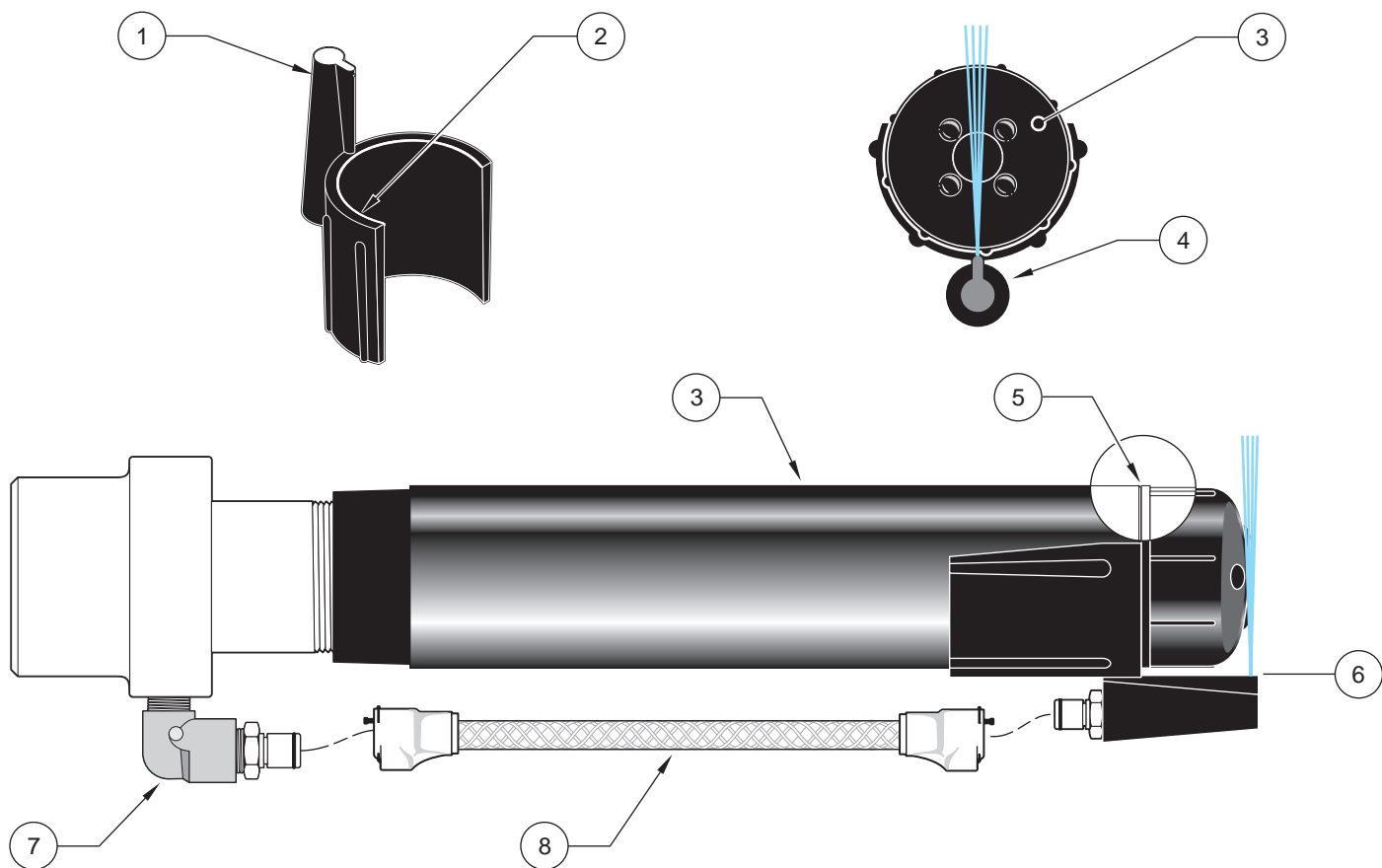


1. Label, wiring	5. Strain Relief/conduit
2. Fuses (3) (see Specifications on page 4 for fuse ratings)	6. Relay Com
3. Terminal block	7. Relay N/O
4. Air Delivery	

3.5 Air-delivery Tubing Installation and Sensor Installation

1. Fasten the head assembly onto the sensor.
2. Align the raised ridge on the airblast with the groove on the probe body and snap into place.
3. Attach the air-delivery tubing to the airblast. Connect the quick-connect fitting on the air-delivery hose to the mating connector on the airblast. Press together until the connector snaps into place. Tug gently to check the connections.
4. Attach the air delivery tubing to the fitting on the bottom of the High Output Airblast enclosure. See [Figure 5 on page 9](#).

Figure 9 Attaching the Airblast Head Assembly



1. Airblast Head Assembly	5. Groove on the probe body
2. Ridge	6. Correct alignment of the airblast head on the probe body
3. LDO Sensor (sold separately)	7. Washer Head Assembly
4. Airblast Head installed	8. Head Assembly Tubing

Section 4 Startup

After all installation tasks are complete, supply power to the High Output Airblast compressor and the controller.

Perform necessary software setup in the controller to control the relays for probe Airblast cleaning. Configure the controller relay function for "Timer Control". The "Interval" setting controls the off time and the "Duration" setting controls the desired on time.

Section 5 Maintenance

DANGER

Only qualified personnel should conduct the maintenance tasks described in this section of the manual.

5.1 Cleaning the Enclosure

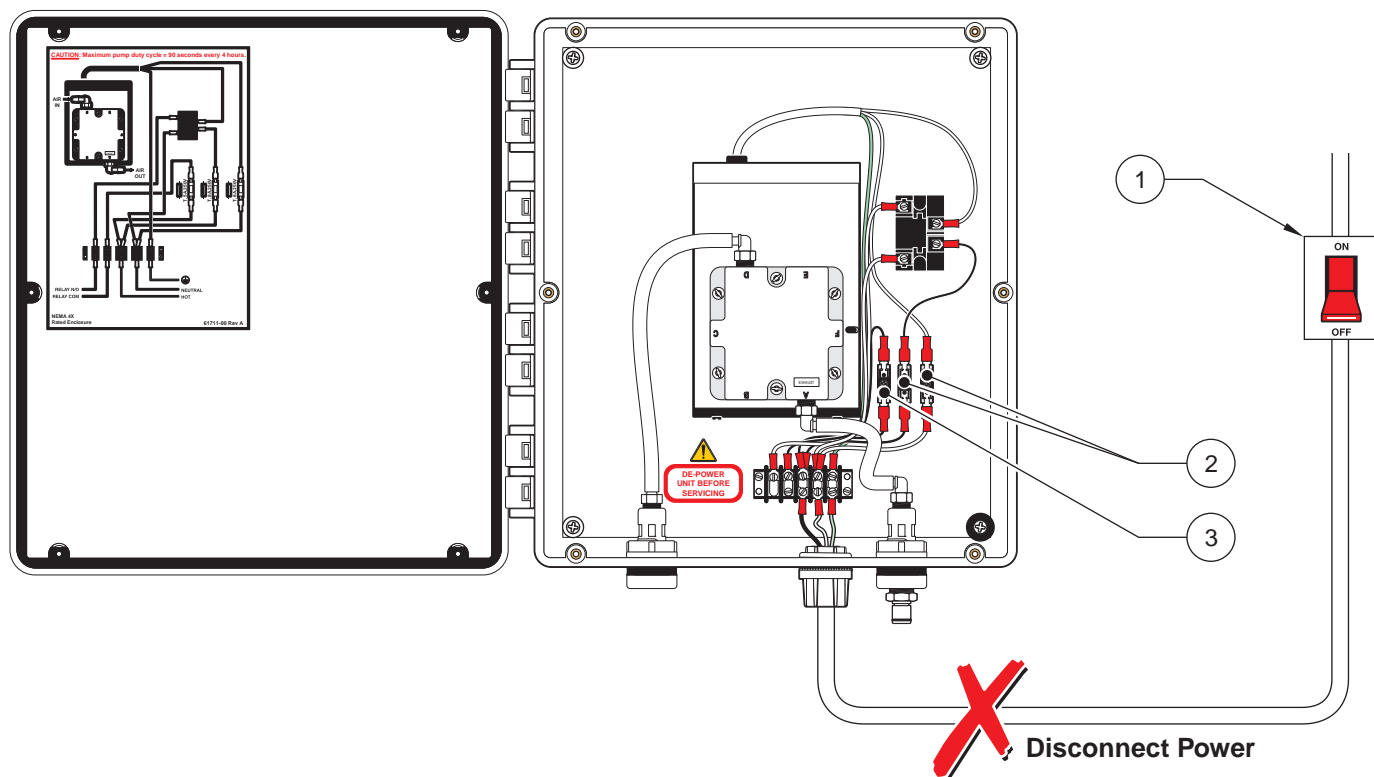
With the enclosure securely closed, wipe the exterior with a damp cloth.

Check the air intake on the compressor on a regular basis to ensure that the port is not clogged. A clogged air intake may decrease the life of the compressor and degrade the probe cleaning performance.

5.2 Replacing the Fuses

1. Disconnect all power to both the controller and the Airblast Compressor.
2. Replace the fuses with the same fuse type and rating (refer to Figure 10 for fuse placement):
 - T, 8 A, 250 V for the 115V model, T, 5A, 250 V for the 230V model
 - T, 5A, 250V for sc controller relays

Figure 10 Fuse Replacement



1. Disconnect power.	3. Fuse (1), T, 5A, 250V controller relay limit fuse
2. Fuses (2), T, 8 A, 250 V for 115V model Fuses (2), T, 5 A, 250 V for 230V model	

Section 6 How to Order

U.S.A. Customers

By Telephone:

6:30 a.m. to 5:00 p.m. MST
Monday through Friday
(800) 227-HACH (800-227-4224)

By Fax:

(970) 669-2932

By Mail:

Hach Company
P.O. Box 389
Loveland, Colorado 80539-0389 U.S.A.
Ordering information by e-mail: orders@hach.com

Information Required

- Hach account number (if available)
- Your name and phone number
- Purchase order number
- Brief description or model number
- billing address
- Shipping address
- Catalog number
- Quantity

International Customers

Hach maintains a worldwide network of dealers and distributors. To locate the representative nearest you, send e-mail to intl@hach.com or contact:

Hach Company World Headquarters; Loveland, Colorado, U.S.A. Telephone: (970) 669-3050;
Fax: (970) 669-2932

Technical and Customer Service (U.S.A. only)

Hach Technical and Customer Service Department personnel are eager to answer questions about our products and their use. Specialists in analytical methods, they are happy to put their talents to work for you.

Call 1-800-227-4224 or e-mail techhelp@hach.com

Section 7 Repair Service

Authorization must be obtained from Hach Company before sending any items for repair. Please contact the Hach Service Center serving your location.

In the United States:

In Canada:

Hach Sales & Service Canada Ltd.
1313 Border Street, Unit 34
Winnipeg, Manitoba
R3H 0X4
(800) 665-7635 (Canada only)
Telephone: (204) 632-5598
FAX: (204) 694-5134
E-mail: canada@hach.com

**In Latin America, the Caribbean, the Far East, the
Indian Subcontinent, Africa, Europe, or the Middle East:**
Hach Company World Headquarters,
P.O. Box 389
Loveland, Colorado, 80539-0389 U.S.A.
Telephone: (970) 669-3050
FAX: (970) 669-2932
E-mail: intl@hach.com

Section 8 Limited Warranty

Hach Company warrants its products to the original purchaser against any defects that are due to faulty material or workmanship for a period of one year from date of shipment unless otherwise noted.

In the event that a defect is discovered during the warranty period, Hach Company agrees that, at its option, it will repair or replace the defective product or refund the purchase price excluding original shipping and handling charges. Any product repaired or replaced under this warranty will be warranted only for the remainder of the original product warranty period.

This warranty does not apply to consumable products such as chemical reagents; or consumable components of a product, such as, but not limited to, lamps and tubing.

Contact Hach Company or your distributor to initiate warranty support. Products may not be returned without authorization from Hach Company.

Limitations

This warranty does not cover:

- Damage caused by acts of God, natural disaster, labor unrest, acts of war (declared or undeclared), terrorism, civil strife or acts of any governmental jurisdiction
- Damage caused by misuse, neglect, accident or improper application or installation
- Damage caused by any repair or attempted repair not authorized by Hach Company
- Any product not used in accordance with the instructions furnished by Hach Company
- Freight charges to return merchandise to Hach Company
- Freight charges on expedited or express shipment of warranted parts or product
- Travel fees associated with on-site warranty repair

This warranty contains the sole express warranty made by Hach Company in connection with its products. All implied warranties, including without limitation, the warranties of merchantability and fitness for a particular purpose, are expressly disclaimed.

Some states within the United States do not allow the disclaimer of implied warranties and if this is true in your state the above limitation may not apply to you. This warranty gives you specific rights, and you may also have other rights that vary from state to state.

This warranty constitutes the final, complete, and exclusive statement of warranty terms and no person is authorized to make any other warranties or representations on behalf of Hach Company.

Limitation of Remedies

The remedies of repair, replacement or refund of purchase price as stated above are the exclusive remedies for the breach of this warranty. On the basis of strict liability or under any other legal theory, in no event shall Hach Company be liable for any incidental or consequential damages of any kind for breach of warranty or negligence.

Section 9 Replacement Parts and Accessories

9.1 Replacement Parts

Description	QTY	Catalog Number
Air Blast Cleaning System Head Assembly	each	5796500
Air Blast Cleaning System Hose Assembly	each	5797400
Fuse, 5A, 250V Slow-blo for 115V Model	1	4693800
Fuse, 8A, 250V Slow-blo for 115V Model	2	6172000
Fuse, 5A, 250V Slow Blow for 230V Model	3	4693800
LDO Probe Air Blast System Hose Assembly	each	6170800
LDO Air Blast Adapter Assembly	each	6170900
Mounting Kit	each	6172400
User Manual, English	each	6170018

Section 10 Compliance Information

Hach Company certifies this instrument was tested thoroughly, inspected, and found to meet its published specifications when it was shipped from the factory. The Airblast System has been tested and is certified as indicated to the following instrumentation standards:

Product Safety (115V model)

UL 61010A-1 (ETL Listing) CSA C22.2 No. 1010.1 (ETLc Certification)

Product Safety (230V model)

Certified by Hach to EN 61010-1:2001 (IEC1010-1) per 73/23/EEC, supporting test records by Intertek Testing Services.

Immunity (all models)

EN 61326:1998 (EMC Requirements for Electrical Equipment for Measurement, Control and Laboratory Use-Industrial Levels) per 89/336/EEC EMC: Supporting test records by Hach Company, certified compliance by Hach Company.

Standards include:

IEC 1000-4-2:1995 (EN 61000-4-2:1995) Electrostatic Discharge Immunity (Criteria B)

IEC 1000-4-3:1995 (EN 61000-4-3:1996) Radiated RF Electro-Magnetic Field Immunity (Criteria A)

IEC 1000-4-4:1995 (EN 61000-4-4:1995) Electrical Fast Transients/Burst (Criteria B)

IEC 1000-4-5:1995 (EN 61000-4-5:1995) Surge (Criteria B)

IEC 1000-4-6:1996 (EN 61000-4-6:1996) Conducted Disturbances Induced by RF Fields (Criteria A)

IEC 1000-4-11:1994 (EN 61000-4-11:1994) Voltage Dip/Short Interruptions (Criteria B)

Additional Immunity Standard/s include:

ENV 50204:1996 Radiated Electromagnetic Field from Digital Telephones (Criteria A)

Emissions (all models)

Per 89/336/EEC EMC: EN 61326:1998 (Electrical Equipment for measurement, control and laboratory use-EMC requirements) Class "A" emission limits. Supporting test records by Hach Company, Loveland, Colorado EMC Test Center.

Standards include:

EN 61000-3-2 Harmonic Disturbances Caused by Electrical Equipment EN 61000-3-3 Voltage Fluctuation (Flicker) Disturbances Caused by Electrical Equipment

Additional Emissions Standard/s include:

EN 55011 (CISPR 11), Class "A" emission limits

Canadian Interference-causing Equipment Regulation, IECS-003, Class A

Supporting test records by Hach Company, Loveland, Colorado EMC Test Center.

This Class A digital apparatus meets all requirements of the Canadian Interference- Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

FCC PART 15, Class “A” Limits

Supporting test records by Hach Company, Loveland, Colorado EMC Test Center.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense. The following techniques of reducing the interference problems are applied easily.

1. Disconnect the Airblast from its power source to verify that it is or is not the source of the interference.
2. If the Airblast is connected into the same outlet as the device with which it is interfering, try another outlet.
3. Move the Airblast away from the device receiving the interference.
4. Reposition the receiving antenna for the device receiving the interference.
5. Try combinations of the above.

