3M V-Series Air Control Devices

User Instructions for 3MTM Vortex Cooling Assembly V-100, 3MTM Vortemp™ Heating Assembly V-200. 3M™ Air Regulating Valve Assembly V-300 and 3M™ Low Pressure Connector Assembly V-400.

IMPORTANT: Keep these User Instructions for reference



is product helps protect against certain airborne contaminants. Misuse may result in sickness or death

The 3M™ V-Series Air Control Devices are designed to be used with certain 3M headgear, breathing tube and supplied air hose to form a

3M headgear (respiratory intel covering) may include a tight fitting facepiece, lose fitting facepiece, hood, helmet or some combination of these that serves as a respiratory protective covering for the noise and mouth area. Refer to the enclosed 3M™ V-Series Air Control Device NIOSH approval label for approved evetem configurations

List of Warnings and Cautions within these Hear Instructions

A WARNING

product helps protect against certain airborne contaminants. Misuse may result in sickness or death

The length of compressed air hose NF-3000 used depends on the specific address of the low-pressure air pump, stillend. Some pumps security is a minimum of 50 or 100 feet of time to a binary same deviates may be unarranged in the stilled stilled are used to the pumps intendential member to the pumps intendential member to the pump intendential membe th would adversely affect respirator performance and may result in sickness or death.

o meet the NIOSH requirement in 42 CFR 84, subpart 84.150 for minimum and maximum airfl ow (6 to 15 scfm, 170 to 425 lpm), the air rol devices anomyed for use with 3M headness must be operated within the supply pressure rappes and hose lengths stated in the control devices approved in use with swit set reading at the compared within the supply pressure transpis and units energies stated in Special or Critical like instructions. Failure in do so may adversely affect recoirator performance and result in sinkness or death. You must comply with DSHA Standard 20 CER 1010 124, which states that "Airline countings shall be incompatible with outlate for other m

ystems to prevent inadvertent servicing of airline respirators with nonrespirable gases or oxygen." In Canada, refer to the requirements of SA Standard 7180.1 or the authority basing jurisdiction in your region. Failure to do so may result in sickness or death. Your employer must provide breathing air, as described in the Compressed Gas Association Commodify Specification G-7.1-1997 in the United States. In Carada, refer to CSA Standard Z180.1, table ne compressed Gas Association Commodity Specification G-7.1-1997 in the United States, in C or the quality of compressed breathing air. **Failure to do so may result in sickness or death.**

The line pressure must be kept within safe limits, 125 psig (8.75 kg/cm.) maximum. Dirt, oil and water, unless trapped or filtered out, may confinue downstream in concentrated form and adversely affect the performance of the respirator and result in sickness or death.

like of engineent described in these liker instructions must be in accordance with applicable health and safety standards, respirator selece ui equipineni described in unese oser instructions must be in accordance with approache resum and safety standard, respirad titles contained in such publications as ANSI 288.2-1992, CSA Standard 294.4, or pursuant to the recommendations of an industrial lygienist. Before occupational use of these respirators, a written respiratory protection program must be implemented meeting all the quirements of CSHA 29 CFR 1910.134 such as training, fit testing, medical evaluation, and applicable OSHA substance specific standard n Canada, CSA standard Z94.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate.

Each nerson using this respirator must read and understand the information in these //ov /ostructions before use. Use of this respirator to ualified persons, or use not in accordance with these *User Instructions* may adversely affect product performance and **resu**

Do not use if any parts are missing or damaged.

Do not use with parts or accessories other than those approved by 3M as described in these User Instructions or on the NIOSH approval label for the respirator that you are using. Failure to do so may adversely affect respirator performance and result in sickness or death. Use of this respirator in atmospheres for which it is not NIOSH certified or designed may result in sickness or death. Do not wear this

- Almospheres are oxygen deficient
- Contaminant concentrations are unknown
- Contaminant concentrations are Immediately Dangerous to Life or Heath (IDLH).
- Contaminant concentrations exceed the maximum use concentration (MUC) determined using the assigned protection factor (APF recommended for the applicable headgear or the APF mandated by specific government standards, whichever is lower. Refer to the Use Instructions provided with the applicable headness

Contaminants that are dangerous to your health include those that you may not be able to see or smell. Leave the contaminated area immediately if any of the following conditions occur. Failure to do so may result in sickness or death.

- Any part of the system becomes damaged Airflow into the respirator decreases or story
- Breathing becomes difficult.
- You feel dizzy or your vision is impaired
- Your face eyes nose or mouth become(s) irritated
- You suspect that the concentration of contaminants may have reached levels at which this respirator may no longer provide adequate

Never alter or modify this assemble

Air supply piping, fittings, and compressors must have the capacity to deliver sufficient air volume (6 to 15 scfm, 170 to 425 lpm) to operate

USE INSTRUCTIONS AND LIMITATIONS

Before use, the wearer must read and understand these User Instructions. Keep these User Instructions for reference.

The 3M Air Control Valve Assemblies are designed to be used with approved 3M headgear (respiratory inlet covering), breathing tube and supplied air hose to form a complete NIOSH approved Type C or CE supplied air system.

3M™ Vortex Cooling Assembly V-100 The 3M** Votex Cooling Assembly is designed to provide those 3M headgear which are approved for use with it, a continuous airflow ranging between 6 and 15 cfm (170 to 425 tom). This air control device also provides the ability to cool the compressed air supply by as much as 50°F. (28°C). The device cools the six as supplied by the compressed air source – not the ambient sir. The control knob may be adjusted manually between upper and lower limits to suit the cooling comfort requirements of the user.

3M™ Vortemp™ Heating Assembly V-200

The 3MTM VortempTM Heating Assembly is designed to provide those 3M headgesr which are approved for use with it, a continuous airflow ranging between 6 and 15 cfm (170 to 425 lpm). This air control device also provides the ability to warm the compressed air supply by as much

as 50°F (28°C). The device warms the air as supplied by the compressed air source – not the ambient sir. The control knob is set manually between upper and lower limits to suit the warming comfort requirements of the user. 3M™ Air Regulating Valve Assembly V-300

The 3M I'm Air Regulating Valve Assembly is designed to provide those 3M headgear which are approved for use with it, a continuous airflow ranging between 6 and 15 cfm (170 to 425 ipm). The control knob (sirflow) is set manually between upper and lower limits to suit the comfor requirements of the user

3M™ Low Pressure Connector Assembly V-400
The 3M™ Low Pressure Connector Assembly is designed to provide those 3M headgear which are approved for use with it, a continuous airflow ranging between 6 and 15 cfm (170 to 425 jpm). When used as part of an approved system with the 3MT^M Supplied Air Hose W-3020, the V-400 will provide airflow within the specified range when the air pressure at the point of connection for the hose is between 4 and 15 psig (0.28 to 1.05 kg/cm,), dependent on hose length

Assigned Protection Factor (APF)

Assigned in outcomination (APT)
Refer to the User Instructions for the specific cheadgear to be used to determine the APF for the 3M™ Supplied Air System using V-Series Air Control Devices. Consult 3M™ Technical Data Bulletin #175 for additional information on APFs and supporting test data.

For a listing of the components of NIOSH approved 3M respirator systems using 3MTM V-Series Air Control Devices, refer to the NIOSH approval

NIOSH Cautions and Limitations

- A- Not for use in atmospheres containing less than 19.5 percent oxyger
- B- Not for use in atmospheres immediately dangerous to life or health.
- C- Do not exceed maximum use concentrations established by regulatory standards.
- D- Air-line respirators can be used only when the respirators are supplied with respirable air meeting the requirements of CGA G-7.1 Grade D
- E- Use only the pressure ranges and hose lengths specified in the User's Instructions
- J- Failure to properly use and maintain this product could result in injury or death.
- M-All approved respirators shall be selected, fitted, used, and maintained in accordance with MSHA, OSHA, and other applicable regulations

N- Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer

O- Refer to User's Instructions, and/or maintenance manuals for information on use and maintenance of these respirators. S- Special or critical User's Instructions and/or specific use limitations annly Refer to User's Instructions before domina

S- Special or Critical Use Instructions

W-3217, 520-02-23 and GVP-117 belts may accommodate waist sizes up to 50 inches (127 centimeters).

September 3. Series Air Control Device Assembly includes an air regulating device or connector with a quick disconnect plug, a belt clip, and a belt. The W-2963 cotton fiber belt may be adjusted to accommodate waist sizes between 25 and 42 inches 164 and 107 certimeters). The

Control Device	Quick Disconnect Plug Type
0	Industrial Interchange, 1/4" MPT, 1/4" Body Size, Steel
0	Industrial Interchange, 1/4" MPT, 1/4" Body Size, Steel
0	Industrial Interchange, 1/4" MPT, 1/4" Body Size, Steel
0	Industrial Interchange, 1/4" MPT, 3/8" Body Size, Steel

3MTM Sunnlied Air Hose and Pressure Requirement

All approved 3M headgear except: L-501, L-503, L-505, L-701, L-703, L-705, L-901 and L-905. n approved an headyean except. 2-bot, 2-bots, 2-bots, 2-bot, 2-bot, 2-bot, 2-bot and 2-bot. M™ Supplied Air Respirator System approvals allow you to combine up to three W-9435 or W-9445 hoses (25.50.100 feet or 7.6.15.2.30.5 meter

n any combination not to exceed 300 feet (91.4 meters). Refer to Table 1 for the supply air pressure requirements for all 3M approved headgear

For all 3M headoear, the W-3020 and W-2929 (coiled) hoses can only be used in single lengths of 25, 50, or 100 feet (7,62, 15,2, or 30,5 meters). No Table 1: Pressure Schedule Table for 3M™ V-Series Air Control Device

(All approved 3M headgear except L-501, L-503, L-505, L-701, L-703. L-705. L-901. L-905)

Air Control Device	High Pressure Hoses W-9435 and W-9445 (3/8" ID)	High Pressure Hose W-2929 (Coiled, 3/8" ID)	Low Pressure Hose W-3020 (1/2" ID)	Supply Pressure Range
	25 - 100 ft (7.6 - 30.5 meters)	25, 50 or 100 ft (7.6, 15.2, 30.5 m)	N/A	62 - 72 psig (4.4 - 5.0 kg/cm²)
V-100	125 - 200 ft (38.1 - 61.0 meters)	N/A	N/A	69 - 82 psig (4.9 - 5.7 kg/cm²)
	225 - 300 ft (68.6 - 91.4 meters)	N/A	N/A	75 - 91 psig (5.3 - 6.4 kg/cm²)
V-200	25 - 100 ft (7.6 - 30.5 meters)	25, 50 or 100 ft (7.6 – 30.5 meters)	N/A	64 - 68 psig (4.5 - 4.8 kg/cm²)
	125 - 200 ft (38.1 - 61.0 meters)	N/A	N/A	71 - 78 psig (5.0 - 5.5 kg/cm²)
	225 - 300 ft (68.6 - 91.4 meters)	N/A	N/A	77 - 88 psig (5.4 - 6.2 kg/cm²)
V-300	25 - 100 ft (7.6 - 30.5 meters)	25, 50 or 100 ft (7.6, 15.2, 30.5 m)	N/A	30 - 35 psig (2.1 - 2.5 kg/cm²)
	125 - 200 ft (38.1 - 61.0 meters)	N/A	N/A	33 - 50 psig (2.3 - 3.5 kg/cm²)
	225 - 300 ft (68.6 - 91.4 meters)	N/A	N/A	38 - 63 psig (2.7 - 4.4 kg/cm²)
V-400	N/A	N/A	25 ft (7.6 m)	6 - 11 psig (0.4 - 0.8 kg/cm²)
	N/A	N/A	50 ft (15.2 m)	7 - 13 psig (0.5 - 0.9 kg/cm²)
	N/A	N/A	100 ft (30.5 m)	8 - 15 psig (0.6 - 1.0 kg/cm²)

3M headgear: L-501, L-503, L-505, L-701, L-703, L-705, L-901 and L-905

MIT Supplied Air Respirator System approvals allow you to combine up to three 100-foot lengths of W-9435 or W-9445 hoses. The total combined hose length not to exceed 300 feet (§1.4 meters), You may not combine 25 or 50-foot (7.6 or 15.2 meter) lengths of W-9435 and W-9445 hoses. Refer to Table 2 for the supply air pressure requirements for these approved headges.

For all 3M headgear, the W-3020 and W-2929 (coiled) hoses can only be used in single lengths of 25, 50, or 100 feet (7.6, 15.24, or 30.5

Table 2: Pressure Schedule Table for 3M™ V-Series Air Control Devices Used With 3M Headgear L-501, L-503, L-505, L-701, L-703, Air Control High Processes Horse High Processes Horse Low Processes Horse Supply Processes Banna

Device	W-9435 and W-9445 (3/8" ID)	W-2929 (Coiled, 3/8" ID)	W-3020 (1/2" ID)	oupply Pressure hange
V-100	25 ft (7.6 m)	25 ft (7.6 m)	N/A	60-65 psig (4.2-4.6 kg/cm²)
	50 ft (15.2 m)	50 ft (15.2 m)	N/A	65-70 psig (4.6-4.9 kg/cm²)
	100 ft (30.5 m)	100 ft (30.5 m)	N/A	70-75 psig (4.9-5.3 kg/cm²)
	200 ft (60.9 m)	N/A	N/A	80-85 psig (5.6-6.0 kg/cm²)
	300 ft (91.4 m)	N/A	N/A	85-90 psig (6.0-6.3 kg/cm²)
V-200	25 ft (7.6 m)	25 ft (7.6 m)	N/A	60-65 psig (4.2-4.6 kg/cm²)
	50 ft (15.2 m)	N/A	N/A	60-68 psig (4.2-4.8 kg/cm²)
	100 ft (30.5 m)	N/A	N/A	70-72 psig (4.9-5.1 kg/cm²)
	200 ft (60.9 m)	N/A	N/A	75-80 psig (5.3-5.6 kg/cm²)
	300 ft (91.4 m)	N/A	N/A	85-90 psig (6.0-6.3 kg/cm²)

V-300	25 ft (7.6 m)	25 ft (7.6 m)	N/A	25-30 psig (1.8-2.1 kg/cm²)
	50 ft (15.2 m)	50 ft (15.2m)	N/A	30-35 psig (2.1-2.5 kg/cm²)
	100 ft (30.5 m)	100 ft (30.5 m)	N/A	35-40 psig (2.5-2.8 kg/cm²)
	200 ft (60.9 m)	N/A	N/A	45-50 psig (3.2-3.5 kg/cm²)
	300 ft (91.4 m)	N/A	N/A	50-55 psig (3.5-3.9 kg/cm²)
V-400	N/A	N/A	25 ft (7.6 m)	6-11 psig (0.4-0.8 kg/cm²)
	N/A	N/A	50 ft (15.2 m)	7-13 psig (0.5-0.9 kg/cm²)
	N/A	N/A	100 ft (30.5 m)	8-15 psig (0.6-1.0 kg/cm²)

Requirements - Approximately 20 CFM (566 lpm) per 3M™ Air Control Device. Noise I avail - I ass than 90 dRA within the headness: exclusion external noise

igth of compressed air hose W-3020 used depends on the specifications of the low-pressure air pump utilized. Sor num of 50 feet (15.2 meters) or 100 feet (30.5 meters) of hose to allow adequate cooling of the air heated by the p Read the pump's instructions thoroughly before selecting the compressed air hose W-3020 length that will be used. NO PUMP S TO BE USEI WHICH COULD CAUSE AIR HOTTER THAN 160°F (71°C) TO ENTER THE COMPRESSED AIR HOSE W-3020. Air hotter than 160°F (71°C) will

Many older compressed air systems may provide air that is unfit for human respiration without secondary air treatment. This is due largely to the presence of objectionable oil vapors and odors. Rules and regulations governing air quality when using compressed air for respiration are quite reservice.

Precautions must be observed when using compressed air for breathing numbers

Oil mist from the compressor lubricating oil must not be present when the air reaches the air control device. Excessive amounts of water vapor and any particulate matter should also be removed as they may affect performance of the air control devices. The schematic diagnam of the air purificar and pressure regulator equipment allows what should be installed in the main airtine abeat of the connection for the breathing air hoses (Fig. 1). If a pre-assembled air filtering and regulating device is desired. 3M offers several compressed air filter and regulator ganel assemblies. These semblies contain a specially designed filter cartridge to help remove oil mist and vapors, condensed moisture, particulates, odors and vapor hey come completely assembled and are ready for connection between the compressor and supplied air respirator system. These air filtering

Note Carbon measuries. Although it is theoretically possible that oil beforded compressor can create curbon menoride (CD) if the compressor weekerst, studies have shown that the location of the compressor's air intake it is fen not filely governed or a charge mornation continued for According to OSMA requisitor (29 CR (1910.134(i)), periodic CD monitoring, rather than continuous CD monitoring with an atarm, is acceptable if the oil bidiricated compressor is equalposed with a high phempather darm and automatic shart-down in Canadas, follow CSA (1920.1 regarding of the CSA).

Formation of carbon monoxide in air compressors. Am Ind. Hyn. Assoc. J (40). June 1979, np. 548-551.

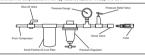


Fig. 1: Air purification and regulation equipment

evices approved for use with 3M headpear must be operated within the supply pressure ranges and hose len ritical Use Instructions. Failure to do so may adversely affect respirator performance and result in sickness or death. You must comply with DSHA standard 29 CFR 1910 134, which states that "Airline countings shall be incompatible with outlets for other par t most comply with cores same and 25 or 1 191. The most states that, prevent inadventent servicing of airline respirators with nonrespirable gases or oxygen. In Canada, refer to the re A Standard 2180.1 or the authority having jurisdiction in your region. Failure to do so may result in sickness or death. ur employer must provide breathing air that meets at least the requirements of the specification for Grade D breathing air, as described

Compressed Gas Association Commodity Specification G-7 (in the United States, in Capada, refer to CSA standard 7180 1, table for the quality of compressed breathing air. Failure to do so may result in sickness or death. The line pressure must be kept within safe limits, 125 psig (8.75 kg/cm²) maximum. Dirt, oil and water, unless trapped or filtered out, ma continue downstream in concentrated form and adversely affect the performance of the resolution and may result in sickness or death

Foam pad and fastener

Waist helt, cotton 42 in x 1.5 in

Waist belt, decontaminable 54 in x 1.5 in

Body tube**

Cable tie

Control knob**

Tuha sezamblu**

SYSTEM COMPONENTS AND REPLACEMENT PARTS 3M™ V-100 Illustrated Parts List (Fig. 2)

W-3217

Part Number Vortex muffler kit Retainer (included in item 1 Special washer Screw 6/32 x 3/16 Washer-Inch #6 W-1279-2 Plug-quick disconnect (Ind. Interchange) W-3186-2 Plug-quick disconnect (Schrader W-1403 Fibrow connector

Quantity Required

Fig. 4: V-300			
3M™ V-400 I	llustrated Parts List (Fig. 5)		
Item Number	Part Number	Description	Quantity
1	V-211	Vortemp™ muffler kit	
2		Retainer (included in item 1)	
3		Retaining Ring	
4		Screen	
5	W-3135-10	Muffler Disc (10 pk)	
6	W-3252-2	Plug-quick disconnect (Ind. Interchange)	
	W-3251-2	Plug-quick disconnect (Schrader)	
7	W-2963	Waist belt, cotton 42 in x 1.5 in	

W 11E Vortex spare parts kit-includes item 4, 5, 6, 7, 8, 11, 15 **Cannot be ordered. Must be returned to distributor for factory regain

Vortex Cooling Tube (no belt)

3M™ V-200 Illustrated Parts List (Fig. 3)

V-150

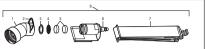
Item Number	Part Number	Description	Quantity Required
1	V-211	Vortemp™ muffler kit	1
2		Retainer (included in item 1)	1
3		Tube housing**	1
4		Screw 6/32 x 3/16	1
5		Washer - lock #6	1
6		0-ring	1
7		Tube assembly**	1
8	W-1403	Elbow connector	1
9	W-1279-2	Plug-quick disconnect (Ind. Interchange)	
	W-3186-2	Plug-quick disconnect (Schrader)	
10		Generator	1
11		Special washer	1
12		0-ring	1
13		Turbine cap**	1
14		Valve-ball**	1
15		Vortemp™, cold muffler	1
16	W-2963	Waist belt, cotton 42 in x 1.5 in	
	W-3217	Waist belt, decontaminable 54 in x 1.5 in	
17		Holder	1
18		Cable tie	1
19		Slide	1
20	V-250	Vortemp™ Heating Tube (no belt)	
	V-215	Vortemp™ spare parts kit-includes item 4, 5, 6, 10, 11, 12, 15	
**Cannot be order	ed. Must be returned to distributor f	or factory repair.	



3M™ V-300 IIIu	strated Parts List (Fig. 4)		
Item Number	Part Number	Description	Quantity Required
1	V-211	Vortemp™ muffler kit	1
2		Retainer (included in item 1)	1
3		Retaining ring	1
4		Screen	1
5	W-3135-10	Muffler Disc	2
6		Nut	1
7		0-ring	1
8		0-ring	1
9	W-1279-2	Plug-quick disconnect (Ind. Interchange)	
	W-3186-2	Plug-quick disconnect (Schrader)	
10	W-2963	Waist belt, cotton 42 in x 1.5 in	
	W-3217	Waist belt, decontaminable 54 in x 1.5 in	
	520-02-23	Waist belt, decontaminable 50 in x 2 in	
	GVP-117	Waist belt, decontaminable 50 in x 2 in	
11	V-350	Air regulating valve (no belt)	
	W-3036	Spare parts kit-includes Item 3, 4, 5, 6, 7, 8	

3M™ V-400 II	lustrated Parts List (Fig	1.5)	
Item Number	Part Number	Description	Quantity Re
1	V-211	Vortemp™ muffler kit	1
2		Retainer (included in item 1)	1
3		Retaining Ring	1
4		Screen	1
5	W-3135-10	Muffler Disc (10 pk)	2
6	W-3252-2	Plug-quick disconnect (Ind. Interchange)	
	W-3251-2	Plug-quick disconnect (Schrader)	
7	W-2963	Waist belt, cotton 42 in x 1.5 in	

Weigt half deconteminship 54 in v 1 5 in E20 02 22 Waist helt, decontaminable 50 in x 2 in Waist helt, decontaminable 50 in x 2 in Low pressure connector (no belf) W-2026 Snora norte kill-innludes itam 3 A 5



3M™ V-Series Air Control Devices - optional parts not shown

ODEDATING INSTRUCTIONS

Use of equipment described in these User Instructions must be in accordance with applicable health and safety standards, respirator selection tables contained in such publications as ANSI 288.2, CSA Standard 294.4, or pursuant to the recommendations of an industris typienist. Refore occupational use of these respirators, a written respiratory protection program must be implemented meeting all the Ingenies Serior of Copaniana uses of interest regionally year of control and applicable OSHA substance specific standards. In Canada, CSA standard 294.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate. Each person using this respirator must read and understand the information in these User Instructions before use. Use of this respirator by

untrained or unquisitied persons, or use not in accordance with these //sex /ostructions may aftersety affect product performance and result in elakusee er death

Do not use if any parts are missing or damaged.

Do not use with parts or accessories other than those manufactured by 3M as described in these User Instructions or on the NIOSH approva-label for the respirator that you are using. Failure to do so may adversely affect respirator performance and result in sickness or death. Use of this respirator in atmospheres for which it is not NIOSH certified or designed may result in sickness or death. Do not wear this

- Atmospheres are oxygen deficient. - Contaminant concentrations are unknown
- Contaminant concentrations are Immediately Dangerous to Life or Heath (IDLH).
- Contaminant concentrations exceed the maximum use concentration (MUC) determined using the assigned protection factor (APF) recommended for the applicable headpear or the APF mandated by specific government standards, whichever is lower. Refer to the User instructions provided with the applicable headness.

Contaminants that are dangerous to your health include those that you may not be able to see or smell. Leave the contaminated area organisates that are dangerous to your reason include tride that you may not be used to see a second market and the following conditions occur. Failure to do so may result in sickness or death

- Any part of the system becomes damaged Airflow into the respirator decreases or stone
- You feel dizzy or your vision is impoired
- Your face, eyes, nose or mouth become(s) irritated
- hu suspect that the concentration of contaminants may have reached levels at which this requiretor may no immer nowide adequate notice?

Air supply piping, fittings, and compressors must have the capacity to deliver sufficient air volume (6 to 15 cfm, 170 to 425 lpm) to operate

To use these 3M air control devices with approved 3M headgear, breathing tube and supplied air hose proceed as follows: 1. Connect one end of the breathing tube to the selected headgear, (Follow the directions in the specific headgear User Instructions.) Note: If the H-115 Breathing Tube Assembly is used, the tube length may be trimmed to suit the user. Trim only the end that will be

connected to the headgear. The tube must not be adjusted to a length less than 12 inches (30.5 cm). 2. Connect the breathing tube to the air control device. Connect the threaded end of the breathing tube to the threaded gutlet on the air control device by screwing the two units together

Note: If using a BT series breathing tube, first screw the 3M™ V-199 adapter into the outlet port of the air control device. Position the breathing tube so that the two locking studs are aligned with the openings of the two states are aligned with the openings of the two locking studs are aligned with the openings of the two locking studs are engaged at the end of the L-shaped slots (Fig. 6). 3. Adjust and buckle the waist helt with air control device comfortably amond your waist

- Connect the supplied air hose to the air supply and the 3M™ air control device. Adjust the air pressure to within the acceptable range for the appropriate air control device, hose, and headgear. See the Special or Critical Use Instructions section of this User Instruction for accentable air pressure ranges
- 5. Don the headpear and adjust for maximum comfort in a non-contaminated area per the specific headpear User Instructions
- 6. Adjust the airflow for maximum comfort by rotating the control knob on the air control device. 7. Recheck the air pressure setting to ensure it is still in the acceptable range.

To use this 3M air control device with announce 3M headness; breathing tube and supplied air hose proceed as follows:

1. Connect one end of the breathing tube to the selected headgear. (Follow the directions in the specific headgear Note: If the H-115 Resolving Tube Assembly is used the tube length may be trimmed to suit the user Trim only the end that will be connected to the headgear. The tube must not be adjusted to a length less than 12 inches (30.5 cm).

2. Connect the breathing tube to the air control device. Connect the threaded end of the breathing tube to the threader outlet on the air control device by screwing the two units together Note: If using a BT series breathing tube, first screw the 3M™ V-199 adapter into the outlet port of the air control slots on the adapter outlet. Press in straight and twist so that the locking studs are engaged at the end of the

- Adjust and buckle the waist belt with low pressure connector assembly comfortably around your waist. Connect the sunglied air hose W-3020 between the air numn and the 3M™ Low Pressure Connector Assembly idjust the pressure to within the acceptable range as per the Special or Critical Use Instructions Pressure section
- 5. Don the headness and adjust for maximum comfort in a non-contaminated area per the specific headness likes. Fig. 6: V-199 Arlanter 6. Recheck the air pressure setting to ensure it is still in the acceptable range.

CLEANING, INSPECTION AND STORAGE

These air control devices have no moving parts except the control knob, so there is little to wear out. If proper filtration of compressed air is maintained, the muffler will stay clean and maintain its acoustic efficiency.

Additional maintenance and care of respirators should be followed per ANSI Standard 288.2-1992, Practices for Respiratory Protection. In Canada, follow CSA Standard 294.4 or the requirements of the authority having jurisdiction in your region.

Waist Belt (W-2963) and Decontaminable Waist Belts (W-3217, 520-02-23, and GVP-117)

V-1000
DUE TO THE NEED FOR INSTRUMENTATION TO CAUGHSTAT FOR PROPER ARREADY. THE VORTEX AR COOLER IS TO GE DISASSEMBLED ONLY.
TO THE EXTENT SHOWN IN THE 2, DO NOT LOSSED OR REMOVE THE SET SCHEWS IN THE CATIFICAL WING STEM 13 BECAUSES OF THE TOTAL TO THE CONTROL MOSE STEM 13 BECAUSES OF THE TOTAL THE CONTROL MOSE STEM 15 THE FLOW TO THE FACTORY FOR REPAIR FT IN ECONTROL KNOWS DOWNS OFF.

THE CONTROL THE CONTROL KNOWS DOWNS OFF.

To clean the tube assembly simply firsh with soon and water followed with a water rinse. Do not insert a brosh in the tube

It is important to look the plate of the appointer (from 6) place.

Over tightening of the turbine cap (item 3) on re-assembly can cause the generator slots to restrict, thereby reducing airflow. To replace the acquistic from part (item 11) proceed as follows:

- Remove the machine screw (item 7) and slide off the body tube (item 12) from the vortex air cooler with a slight twisting motion. - Remove the acquistic from rad (item 11) Position one end of new accustic forem and halfway between the exhaust holes and wasn it around the SMTM ScotchmateTM strins. Make sure

that the ends of the acoustic foam pad do not overlap, but rather form a snup butt fit. Holding the acoustic foam pad in place with two fingers of one hand, use the other hand to carefully slide the body tube over acoustic foan body tube with the machine screw

DOLY TO THE EXTENT SHOWN IN FIG. 3. DO NOT LOGISM OR REMOVE THE SET SCREWS IN THE TUBE ASSEMBLY LITEM 7) BECAUSE OF CRITICAL POSITIONING OF THE VALVE AND THE NEED TO USE INSTRUMENTATION FOR PROPER ADJUSTMENT OF THE AIRFLOW, RETURN TO THE FACTORY

To clean the tube assembly, simply flush with soap and water followed with a water rinse. Do not insert a brush in the tube. It is important to keep the slots of the generator (item 10) clean.

Over tightening of the turbine cap (item 13) on reassembly can cause the generator slots to restrict, thereby reducing airflow.

Daily cleaning should be performed on the exterior of the air control device. Blow clean with compressed air. After extended use, the two disks (item 5, Fig. 4 and 5) inside of the low pressure adapter may become dirty from contaminants in the compressed air supply. They may be replaced by removing the relating ring with the proper tool.

All 3M air control devices should be stored at ambient temperature in a dry environment that is protected against atmospheric contaminants.

3M™ V-Series Air Control Devices can be disposed of as normal waste or scrap metal unless contaminated with a hazardous material as a result of use. If contaminated, the air control device must be disposed of according to local environmental regulations.

TROUBLESHOOTING Troubleshooting Chart V-100 and V-200 Possible Causes

Excessive water in compressor air line. Increase air pressure within appropriate pressure schedule in this User Instruction edequate warming or cooling. Dirty on inside. Sean and provide adequate filtration of supplied air. inressed airline nine ton small Increase sirling nine size lise larner compressor pressor has insufficient capacity. eck compressor for overheating. oming air temperature too high or too low slate or move any hoses or pipes, which are heating up to ambient conditions. o much warming or cooling. ver air pressure within appropriate pressure schedule ressure too high n this User Instruction ceceive airflow to headnear Lower air pressure within appropriate pressure schedule in this User Instruction.

Troubleshooting Chart V-30

Symptom	Possible Causes	Remedy
Inadequate airflow.	Compressor filters plugged.	Change filters.
	Muffler plugged with oil.	Replace muffler discs.
	Air pressure too low.	Increase air pressure within appropriate pressure schedule in this User Instruction.
	F&R panel filter plugged.	Change filter.
	Kink in air hose.	Straighten hose out and inspect for damage.
Control knob won't turn.	Valve mechanism dirty.	Clean with blast of air.
No airflow.	Compressor off.	Turn compressor on.
	F&R panel valve closed.	Open F&R panel valve.
	F&R panel closed.	Open F&R panel regulator.
	Compressed oir boss not connected	Connect compressed air bree

Troubleshooting Chart V-400

ymptom	Possible Causes	Remedy
adequate airflow.	Compressor filters plugged.	Change filters.
	Muffler plugged with oil.	Replace muffler discs.
	Air pressure too low.	Increase air.
	F&R panel filter plugged.	Change filter.
	Kink in air hose.	Straighten hose out.
o airflow.	Compressor off.	Turn compressor on.
	F&R panel valve closed.	Open F&R panel valve.
	F&R panel closed.	Open F&R panel regulator.
	Compressed air hose not connected.	Connect compressed air hose.

IMPORTANT NOTICE

WARRANTY: in the event any 3M OH&ESD product is found to be defective in material, workmanship, or not in conformation with any express warranty for a specific purpose, 3M's only obligation and your exclusive remedy shall be, at 3M's option, to repair, replace or refund the purchase price of such parts or products upon timely notification thereof and substantiation that the product has been stored, maintained and ised in accordance with 3M's written instructions.

LIMITATION OF LIABILITY: Except as provided above, 3M shall not be liable or responsible for any loss or damage, whether direct, indirect, incidental, special or consequential, arising out of sale, use or misuse of 3M CHAESD products, or the user's inability to use such products. THE REMICIES SET FORTH HEREIN ARE EXCLUSIVE.

Learn more about masks and respirators on our website.