



## V-Series Air Control Devices

User Instructions for 3M™ Vortex Cooling Assembly V-100, 3M™ Vortex™ 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**

### GENERAL SAFETY INFORMATION

**Intended Use:** The 3M™ V-Series Air Control Devices are designed to be used with certain 3M respirators, breathing tube and supplied air hose to form a complete NIOSH approved respiratory system. 3M respirator and hose are designed to provide a tight fitting facepiece, hose fitting, hose and helmet, or some combination of these parts as a respiratory protective covering for the user and mouth area. Refer to the enclosed 3M™ V-Series Air Control Device NIOSH approved label for more information on the intended use and limitations of use.

### List of Warnings and Cautions within these User Instructions

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

The length of compressed air hose W-3000 used depends on the specifications of the low-pressure air pump utilized. Some pumps specify a minimum of 50 or 100 feet of hose to allow adequate cooling of the air heated by the pump's mechanism. Read the pump's instructions thoroughly before selecting the hose W-3000 length to use. Hose W-3000 length that will be used, NO PUMP IS TO BE USED HOTTER THAN 160°F (71°C) TO ENTER THE COMPRESSED AIR HOSE W-3000. Air hotter than 160°F (71°C) will cause the hose to degrade, which would adversely affect respirator performance and may result in sickness or death.

To meet the NIOSH requirement in 42 CFR 84, subpart 84.150 for minimum and maximum airflow (to 6 to 15 cfm, 170 to 425 lpm), the air control device approved for use with 3M respirator must be operated within the supply pressure ranges and hose lengths stated in the Special or Critical Use Instructions and/or instructions for the equipment with applicable health and safety standards, respiratory selection tables contained in such publications as ANSI Z88.2-1992, CSA Standard 284.4, or pursuant to the recommendations of an industrial hygienist or other qualified person. Failure to do so may result in sickness or death.

Each 3M™ V-Series Air Control Device Assembly is designed to provide those 3M respirators which are approved for use with a continuous airflow ranging between 6 and 15 cfm (170 to 425 lpm). This air control device also provides the ability to cool the compressed air supply by as much as 50°F (9°C). The device cools air by using a fan to circulate the compressed air across a heat exchanger. The control knob may be adjusted manually between upper and lower limits to suit the cooling comfort requirements of the user.

**3M™ Vortex™ Heating Assembly V-200:** This air control device provides those 3M respirators which are approved for use with 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 (9°C). The device warms air by using a fan to circulate the compressed air across a heat exchanger. The control knob may be adjusted manually between upper and lower limits to suit the warming comfort requirements of the user.

**3M™ Air Regulating Valve Assembly V-300:** This air control device is designed to provide those 3M respirators which are approved for use with 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 (9°C). The device warms air by using a fan to circulate the compressed air across a heat exchanger. The control knob may be adjusted manually between upper and lower limits to suit the warming comfort requirements of the user.

**3M™ Low Pressure Connector Assembly V-400:** This air control device is designed to provide those 3M respirators which are approved for use with 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 (9°C). The device warms air by using a fan to circulate the compressed air across a heat exchanger. The control knob may be adjusted manually between upper and lower limits to suit the warming comfort requirements of the user.

**Assigned Protection Factor (APF)**  
Refer to the User Instructions for the specific respirator to be used to determine the APF for the 3M™ supplied Air System using V-Series Air Control Devices. 3M™ Technical Data Bulletin #175 or additional information on APFs and assigned air systems.

**NIOSH Approval:** For a listing of the components of NIOSH approved 3M respirator systems using 3M™ V-Series Air Control Devices, refer to the NIOSH approval label.

**NIOSH Cautions and Limitations**  
A- Not for use in atmospheres containing less than 19.5 percent oxygen.  
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 compressed air meeting the requirements of CSA G-7.1 Grade D or higher quality.  
E- Use only the pressure ranges and hose lengths specified in the User's Instructions.  
F- Failure to properly use and maintain this product could result in injury or death.  
M- All approved respirators that select, fit, used, uncleaned in accordance with NIOSH, OSHA, and other applicable regulations.

Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.  
Do not use the User's Instructions and/or maintenance manuals for information on use and maintenance of these respirators.  
S-Special or Critical Use Instructions and/or instructions are limitations apply. Refer to the User's Instructions before donning.

**S-Special or Critical Use Instructions and/or instructions**  
Each 3M™ V-Series Air Control Device Assembly includes an air regulating device or connector with a quick disconnect hose, a belt clip, and a belt. The W-2963 cotton fiber belt may be adjusted to accommodate waist sizes between 25 and 42 inches (64 and 107 centimeters). The W-217, 520-02-23 and GPW-117 belts may accommodate waist sizes up to 50 inches (127 centimeters).

Air Control Device	Quick Disconnect Plug Type
V-100	Industrial Interchange, 1/4" MPF, 1/4" Body Size, Steel
V-200	Industrial Interchange, 1/4" MPF, 1/4" Body Size, Steel
V-300	Industrial Interchange, 1/4" MPF, 1/4" Body Size, Steel
V-400	Industrial Interchange, 1/4" MPF, 3/8" Body Size, Steel

**3M™ Supplied Air Hose and Pressure Regulations**  
All approved 3M respirator except -1501, -1503, -1505, -1701, -1703, -1705, -1706, -1707, -1708, -1709, -1710, -1711, -1712, -1713, -1714, -1715, -1716, -1717, -1718, -1719, -1720, -1721, -1722, -1723, -1724, -1725, -1726, -1727, -1728, -1729, -1730, -1731, -1732, -1733, -1734, -1735, -1736, -1737, -1738, -1739, -1740, -1741, -1742, -1743, -1744, -1745, -1746, -1747, -1748, -1749, -1750, -1751, -1752, -1753, -1754, -1755, -1756, -1757, -1758, -1759, -1760, -1761, -1762, -1763, -1764, -1765, -1766, -1767, -1768, -1769, -1770, -1771, -1772, -1773, -1774, -1775, -1776, -1777, -1778, -1779, -1780, -1781, -1782, -1783, -1784, -1785, -1786, -1787, -1788, -1789, -1790, -1791, -1792, -1793, -1794, -1795, -1796, -1797, -1798, -1799, -1800, -1801, -1802, -1803, -1804, -1805, -1806, -1807, -1808, -1809, -1810, -1811, -1812, -1813, -1814, -1815, -1816, -1817, -1818, -1819, -1820, -1821, -1822, -1823, -1824, -1825, -1826, -1827, -1828, -1829, -1830, -1831, -1832, -1833, -1834, -1835, -1836, -1837, 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