



TECHNICAL DATA

VN NOZZLE FOR OXEO PR FIRE EXTINGUISHING SYSTEM (NITROGEN AND ARGON)

The Viking Corporation | 210 N Industrial Park Drive | Hastings MI 49058

Viking Special Hazards | Technical Services: 877-384-5464 | Email: techsvcs@vikingcorp.com | www.vikinggroupinc.com

The technical data described herein is for components of the Viking Oxexo PR Fire Extinguishing Systems.

Visit the Viking website for the latest edition of the technical data and system manuals.

1. DESCRIPTION

The Viking Oxexo VN nozzles may only be used as room protection nozzles in stationary Oxexo PR Fire Extinguishing Systems utilizing Argon (IG-01) or Nitrogen (IG-100). The Viking Oxexo VN nozzles are installed to distribute the extinguishing agent evenly in the extinguishing zone in the calculated flooding time. During activation, the extinguishing agent flows through the nozzle, expanding once it exits the nozzle bores.

The VN nozzle is comprised of a nozzle body and an orifice plate with a specifically calculated diameter. Viking CAA or Minimax Design Manager must be used to determine the orifice diameter specific to the fire extinguishing system. VN nozzles are not permitted for use within corrosive environments.

2. LISTINGS AND APPROVALS



UL Listed* - EX5248

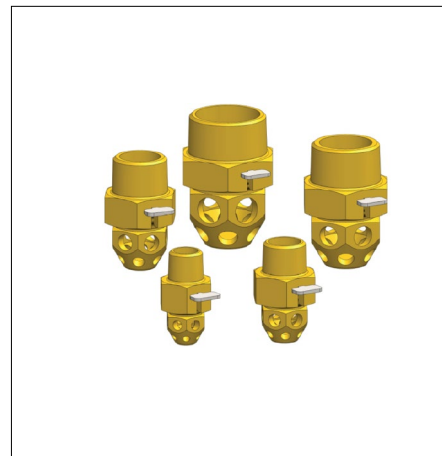


ULC Listed* - EX5248



FM Approved: Clean Agent Fire Extinguishing System

*Listed as a component of an Oxexo PR Fire Extinguishing System



WARNING: Cancer and Reproductive Harm-
www.P65Warnings.ca.gov

3. TECHNICAL DATA

Specifications

- Argon (IG-01) or Nitrogen (IG-100)
- Connecting thread: varies; refer to tables 1-10.
- Operational temperature range: -4 °F to 122 °F (-20 °C to +55 °C)
- Storage temperature range: -40 °F to 149 °F (-40 °C to +65 °C)
- Assembly torque: 29.5 ± 3.7 ft-lb (40 ± 5 Nm)

Material Standards

- Nozzle socket / nozzle head: brass
- Orifice: stainless steel

Ordering Information: Refer to tables 2-11.

| TABLE 1: WORKING NOZZLE PRESSURES | | |
|-----------------------------------|-------------|-----------------------|
| Medium | Orientation | Pressure in psi (bar) |
| Nitrogen | 180° | 396.0 psi (27.3 bar) |
| | 360° | 388.7 psi (26.8 bar) |
| Argon | 180° | 449.6 psi (31.0 bar) |
| | 360° | 432.2 psi (29.8 bar) |



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4. INSTALLATION

1. Wrap the connection thread on the nozzle socket with a suitable sealant (e.g. PTFE tape).
2. Using a box wrench or a combination wrench on the width flat of the nozzle socket, firmly screw the nozzle into the fitting. Make sure the orifice is firmly fixed between the nozzle socket and the nozzle head.
3. Using the correct hex socket wrench (refer to Table 1 for part numbers), tighten the nozzle to a torque of 45 ± 5 ft-lb (61 ± 7 Nm)

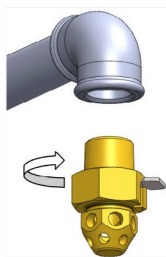


Figure 1

TABLE 2: WRENCH PART NUMBERS

| TABLE 2: WRENCH PART NUMBERS | | |
|------------------------------|---------------------------|------------------|
| 25099 | Socket, 1/2" Drive, 22 mm | 1/2" NPT Nozzles |
| 25100 | Socket, 1/2" Drive, 27 mm | 1/2" NPT Nozzles |
| 25101 | Socket, 1/2" Drive, 32 mm | 1/2" NPT Nozzles |
| 25102 | Socket, 3/4" Drive, 41 mm | 1/2" NPT Nozzles |
| 25103 | Socket, 3/4" Drive, 46 mm | 1/2" NPT Nozzles |

5. MAINTENANCE

The following must be carried out as part of the extinguishing system's maintenance intervals, either annually or upon system activation.

- Inspect the nozzles for any external damage, corrosion, contamination or any other visible marring. Check that all components are accounted for and that the nozzle has been installed properly.
- Immediately remove any debris from the nozzle bores. Dismount the nozzle to clean if necessary. Replace any damaged nozzles immediately.
- Spare nozzles should always be stored in their original packaging in dry conditions and protected against damage.

NOTICE

Do not use cleaning agents that are harmful to metals.



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Table 3: 1/2" NPT VN Nozzles - 180° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|--------------|------------------------------|-----------------------|
| 934164D-0118 | 934164 | 0.118 (3.0) | 918524 |
| 934164D-0122 | | 0.122 (3.1) | 918525 |
| 934164D-0126 | | 0.126 (3.2) | 918526 |
| 934164D-0134 | | 0.134 (3.4) | 918527 |
| 934164D-0142 | | 0.142 (3.6) | 918528 |
| 934164D-0150 | | 0.150 (3.8) | 918529 |
| 934164D-0157 | | 0.157 (4.0) | 918530 |
| 934164D-0165 | | 0.165 (4.2) | 918531 |
| 934164D-0173 | | 0.173 (4.4) | 918532 |
| 934164D-0181 | | 0.181 (4.6) | 918533 |
| 934164D-0189 | | 0.189 (4.8) | 918534 |
| 934164D-0197 | | 0.197 (5.0) | 918535 |
| 934164D-0209 | | 0.209 (5.3) | 918536 |
| 934164D-0220 | | 0.220 (5.6) | 918537 |
| 934164D-0232 | | 0.232 (5.9) | 918538 |
| 934164D-0244 | | 0.244 (6.2) | 918539 |
| 934164D-0256 | | 0.256 (6.5) | 918540 |
| 934164D-0268 | | 0.268 (6.8) | 918541 |
| 934164D-0283 | | 0.283 (7.2) | 918542 |
| 934164D-0299 | | 0.299 (7.6) | 918543 |
| 934164D-0315 | | 0.315 (8.0) | 918544 |
| 934164D-0331 | | 0.331 (8.4) | 918545 |
| 934164D-0346 | | 0.346 (8.8) | 918546 |
| 934164D-0362 | | 0.362 (9.2) | 918547 |
| 934164D-0378 | | 0.378 (9.6) | 918548 |
| 934164D-0394 | | 0.394 (10.0) | 918549 |
| 934164D-0413 | | 0.413 (10.5) | 918550 |
| 934164D-0433 | | 0.433 (11.0) | 918551 |
| 934164D-0453 | 0.453 (11.5) | 918552 | |
| 934164D-0472 | 0.472 (12.0) | 918553 | |
| 934164D-0492 | 0.492 (12.5) | 918554 | |

*Orifice plates not sold separately.



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Table 4: 1/2" NPT VN Nozzles - 360° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|--------------|------------------------------|-----------------------|
| 918745D-0118 | 918745 | 0.118 (3.0) | 918524 |
| 918745D-0122 | | 0.122 (3.1) | 918525 |
| 918745D-0126 | | 0.126 (3.2) | 918526 |
| 918745D-0134 | | 0.134 (3.4) | 918527 |
| 918745D-0142 | | 0.142 (3.6) | 918528 |
| 918745D-0150 | | 0.150 (3.8) | 918529 |
| 918745D-0157 | | 0.157 (4.0) | 918530 |
| 918745D-0165 | | 0.165 (4.2) | 918531 |
| 918745D-0173 | | 0.173 (4.4) | 918532 |
| 918745D-0181 | | 0.181 (4.6) | 918533 |
| 918745D-0189 | | 0.189 (4.8) | 918534 |
| 918745D-0197 | | 0.197 (5.0) | 918535 |
| 918745D-0209 | | 0.209 (5.3) | 918536 |
| 918745D-0220 | | 0.220 (5.6) | 918537 |
| 918745D-0232 | | 0.232 (5.9) | 918538 |
| 918745D-0244 | | 0.244 (6.2) | 918539 |
| 918745D-0256 | | 0.256 (6.5) | 918540 |
| 918745D-0268 | | 0.268 (6.8) | 918541 |
| 918745D-0283 | | 0.283 (7.2) | 918542 |
| 918745D-0299 | | 0.299 (7.6) | 918543 |
| 918745D-0315 | | 0.315 (8.0) | 918544 |
| 918745D-0331 | | 0.331 (8.4) | 918545 |
| 918745D-0346 | | 0.346 (8.8) | 918546 |
| 918745D-0362 | | 0.362 (9.2) | 918547 |
| 918745D-0378 | | 0.378 (9.6) | 918548 |
| 918745D-0394 | | 0.394 (10.0) | 918549 |
| 918745D-0413 | | 0.413 (10.5) | 918550 |
| 918745D-0433 | | 0.433 (11.0) | 918551 |
| 918745D-0453 | | 0.453 (11.5) | 918552 |
| 918745D-0472 | | 0.472 (12.0) | 918553 |
| 918745D-0492 | 0.492 (12.5) | 918554 | |

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Table 5: 3/4" NPT VN Nozzles - 180° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|-------------|------------------------------|-----------------------|
| 934165D-0413 | 934165 | 0.413 (10.5) | 918567 |
| 934165D-0433 | | 0.433 (11.0) | 918555 |
| 934165D-0453 | | 0.453 (11.5) | 918556 |
| 934165D-0472 | | 0.472 (12.0) | 918557 |
| 934165D-0492 | | 0.492 (12.5) | 918558 |
| 934165D-0512 | | 0.512 (13.0) | 918559 |
| 934165D-0531 | | 0.531 (13.5) | 918560 |
| 934165D-0551 | | 0.551 (14.0) | 918561 |
| 934165D-0571 | | 0.571 (14.5) | 918562 |
| 934165D-0591 | | 0.591 (15.0) | 918563 |
| 934165D-0610 | | 0.610 (15.5) | 918564 |
| 934165D-0630 | | 0.630 (16.0) | 918565 |
| 934165D-0650 | | 0.650 (16.5) | 918568 |
| 934165D-0669 | | 0.669 (17.0) | 916566 |

*Orifice plates not sold separately.

Table 6: 3/4" NPT VN Nozzles - 360° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|-------------|------------------------------|-----------------------|
| 918746D-0413 | 918746 | 0.413 (10.5) | 918567 |
| 918746D-0433 | | 0.433 (11.0) | 918555 |
| 918746D-0453 | | 0.453 (11.5) | 918556 |
| 918746D-0472 | | 0.472 (12.0) | 918557 |
| 918746D-0492 | | 0.492 (12.5) | 918558 |
| 918746D-0512 | | 0.512 (13.0) | 918559 |
| 918746D-0531 | | 0.531 (13.5) | 918560 |
| 918746D-0551 | | 0.551 (14.0) | 918561 |
| 918746D-0571 | | 0.571 (14.5) | 918562 |
| 918746D-0591 | | 0.591 (15.0) | 918563 |
| 918746D-0610 | | 0.610 (15.5) | 918564 |
| 918746D-0630 | | 0.630 (16.0) | 918565 |
| 918746D-0650 | | 0.650 (16.5) | 918568 |
| 918746D-0669 | | 0.669 (17.0) | 916566 |

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Table 7: 1" NPT VN Nozzles - 180° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|-------------|------------------------------|-----------------------|
| 934166D-0591 | 934166 | 0.591 (15.0) | 918570 |
| 934166D-0610 | | 0.610 (15.5) | 918571 |
| 934166D-0630 | | 0.630 (16.0) | 918572 |
| 934166D-0650 | | 0.650 (16.5) | 918569 |
| 934166D-0669 | | 0.669 (17.0) | 918573 |
| 934166D-0689 | | 0.689 (17.5) | 918578 |
| 934166D-0709 | | 0.709 (18.0) | 918574 |
| 934166D-0748 | | 0.748 (19.0) | 918575 |
| 934166D-0787 | | 0.787 (20.0) | 918576 |
| 934166D-0827 | | 0.827 (21.0) | 918577 |

*Orifice plates not sold separately.

Table 8: 1" NPT VN Nozzles - 360° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|-------------|------------------------------|-----------------------|
| 918747D-0591 | 918747 | 0.591 (15.0) | 918570 |
| 918747D-0610 | | 0.610 (15.5) | 918571 |
| 918747D-0630 | | 0.630 (16.0) | 918572 |
| 918747D-0650 | | 0.650 (16.5) | 918569 |
| 918747D-0669 | | 0.669 (17.0) | 918573 |
| 918747D-0689 | | 0.689 (17.5) | 918578 |
| 918747D-0709 | | 0.709 (18.0) | 918574 |
| 918747D-0748 | | 0.748 (19.0) | 918575 |
| 918747D-0787 | | 0.787 (20.0) | 918576 |
| 918747D-0827 | | 0.827 (21.0) | 918577 |

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Table 9: 1-1/4" NPT VN Nozzles - 180° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|-------------|------------------------------|-----------------------|
| 934167D-0709 | 934167 | 0.709 (18.0) | 918579 |
| 934167D-0748 | | 0.748 (19.0) | 918580 |
| 934167D-0787 | | 0.787 (20.0) | 918581 |
| 934167D-0827 | | 0.827 (21.0) | 918582 |
| 934167D-0866 | | 0.866 (22.0) | 918583 |
| 934167D-0906 | | 0.906 (23.0) | 918584 |
| 934167D-0945 | | 0.945 (24.0) | 918585 |
| 934167D-0984 | | 0.984 (25.0) | 918586 |
| 934167D-1024 | | 1.024 (26.0) | 918587 |
| 934167D-1063 | | 1.063 (27.0) | 918588 |

*Orifice plates not sold separately.

Table 10: 1-1/4" NPT VN Nozzles - 360° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|-------------|------------------------------|-----------------------|
| 918748D-0709 | 918748 | 0.709 (18.0) | 918579 |
| 918748D-0748 | | 0.748 (19.0) | 918580 |
| 918748D-0787 | | 0.787 (20.0) | 918581 |
| 918748D-0827 | | 0.827 (21.0) | 918582 |
| 918748D-0866 | | 0.866 (22.0) | 918583 |
| 918748D-0906 | | 0.906 (23.0) | 918584 |
| 918748D-0945 | | 0.945 (24.0) | 918585 |
| 918748D-0984 | | 0.984 (25.0) | 918586 |
| 918748D-1024 | | 1.024 (26.0) | 918587 |
| 918748D-1063 | | 1.063 (27.0) | 918588 |

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Table 11: 1-1/2" NPT VN Nozzles - 180° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|-------------|------------------------------|-----------------------|
| 934168D-0945 | 934168 | 0.945 (24.0) | 918594 |
| 934168D-0984 | | 0.984 (25.0) | 918595 |
| 934168D-1024 | | 1.024 (26.0) | 918596 |
| 934168D-1063 | | 1.063 (27.0) | 918597 |
| 934168D-1102 | | 1.102 (28.0) | 918598 |
| 934168D-1142 | | 1.142 (29.0) | 918599 |
| 934168D-1181 | | 1.181 (30.0) | 918600 |
| 934168D-1220 | | 1.220 (31.0) | 918601 |
| 934168D-1260 | | 1.260 (32.0) | 918602 |
| 934168D-1290 | | 1.290 (33.0) | 918603 |

*Orifice plate not sold separately.

Table 12: 1-1/2" NPT VN Nozzles - 360° Style

| Ordering Number | Nozzle Body | Orifice Diameter Inches (mm) | Orifice Plate Number* |
|-----------------|-------------|------------------------------|-----------------------|
| 918749D-0945 | 918749 | 0.945 (24.0) | 918594 |
| 918749D-0984 | | 0.984 (25.0) | 918595 |
| 918749D-1024 | | 1.024 (26.0) | 918596 |
| 918749D-1063 | | 1.063 (27.0) | 918597 |
| 918749D-1102 | | 1.102 (28.0) | 918598 |
| 918749D-1142 | | 1.142 (29.0) | 918599 |
| 918749D-1181 | | 1.181 (30.0) | 918600 |
| 918749D-1220 | | 1.220 (31.0) | 918601 |
| 918749D-1260 | | 1.260 (32.0) | 918602 |
| 918749D-1290 | | 1.290 (33.0) | 918603 |

*Orifice plate not sold separately.



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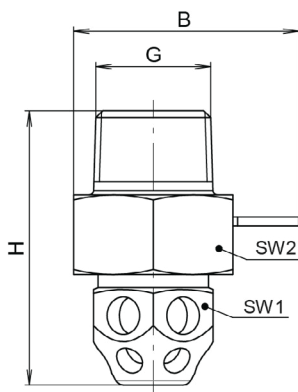


Figure 2: Dimensions

| Table 13: Dimensions Inches (mm) | | | | |
|-------------------------------------|----------------|----------------|-----------|-----------|
| G | H (approx.) | B (approx.) | SW1 | SW2 |
| 1/2" NPT | 2.32 (59) | 1.77 (45) | 0.87 (22) | 1.18 (30) |
| 3/4" NPT | 2.48 (63) | 2.0 (51) | 1.06 (27) | 1.41 (36) |
| 1" NPT | 2.76 (70) | 2.20 (56) | 1.26 (32) | 1.61 (41) |
| 1-1/4" NPT | 3.07 (78) | 2.52 (64) | 1.61 (41) | 1.97 (50) |
| 1-1/2" NPT | 3.27 (83) | 3.07 (78) | 1.81 (46) | 2.16 (55) |



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| FLAMMABLE LIQUID CONCENTRATIONS - VN NOZZLES | | |
|--|--------|-------|
| FUEL | IG-100 | IG-01 |
| Acetone | 42.4 | 57.9 |
| Acetonitrile | 42.4 | 57.9 |
| Aviation Gas | 42.4 | 57.9 |
| Benzene | 42.4 | 57.9 |
| Diesel No. 2 | 42.9 | 58.6 |
| Ethane | 42.9 | 58.6 |
| Ethyl acetate | 43.6 | 59.5 |
| Ethyl alcohol | 51.9 | 70.9 |
| Ethylene glycol | 48.6 | 66.5 |
| Gasoline-NoLead | 44.2 | 60.3 |
| Heptane, commercial | 42.4 | 57.9 |
| i-Octane | 42.4 | 57.9 |
| i-Propyl alcohol | 48.0 | 65.5 |
| Kerosene | 44.2 | 60.3 |
| Lube Oil @500F | 45.5 | 62.0 |
| Methane | 42.4 | 57.9 |
| Methyl alcohol | 62.1 | 84.8 |
| Methyl isobutyl ketone | 44.9 | 61.2 |
| Morpholine | 50.6 | 69.1 |
| n-Butane | 42.4 | 57.9 |
| n-Heptane | 42.4 | 57.9 |
| n-Hexane | 42.9 | 58.6 |
| n-Octane | 43.6 | 59.5 |
| n-Pentane | 42.4 | 57.9 |
| n-Propyl alcohol | 49.3 | 67.3 |
| Propane | 42.9 | 58.6 |
| Tetrahydrofuran | 47.3 | 64.7 |
| Toluene | 42.4 | 57.9 |
| Transformer Oil | 44.9 | 61.2 |
| Xylene | 42.4 | 57.9 |
| | | |