

Angle seat valves VZXF

FESTO



Angle seat valves VZXF

Key features and overview



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Function

The angle seat valve VZXF is an externally controlled 2/2-way valve. Valves of this design are switched by means of an additional pilot medium. The valve is closed by spring force when at rest. It is opened when pilot pressure is

applied to the drive. The supply of the pilot medium into the drive chamber is controlled by an external valve that must be additionally integrated into the supply cable for the pilot medium.

General information

-  - Connecting thread
G $\frac{1}{2}$... G2
-  - Flow rate Kv
2.8 ... 47.5 m³/h

Design

- Gunmetal (red brass) design
- Stainless steel design

Advantages

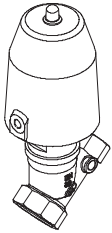
- Insensitive to steam or slightly contaminated media
- No pressure differential required between the inlet and outlet
- Low flow resistance
- Long service life
- Low maintenance

Application

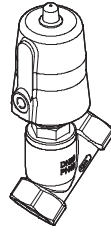
- Angle seat valves control suitable gaseous and liquid media in rigid tubing systems without the need for any pressure differential

Variants

Gunmetal (red brass) design





Stainless steel design



Angle seat valves VZXF

Key features and overview

| Design | Type | Process valve connection | Nominal size (DN) | Process valve nominal pressure (PN) | → Page/Internet |
|---|----------------------|--------------------------|-------------------|-------------------------------------|-----------------|
| Gunmetal (red brass) | | | | | |
|  | VZXF-L-...-H3B1-... | G1/2 | 15 | 16 | 6 |
| | | G3/4 | 20 | | |
| | | G1 | 25 | | |
| | | G1 1/4 | 32 | | |
| | | G1 1/2 | 40 | | |
| | | G2 | 50 | | |
| Stainless steel | | | | | |
|  | VZXF-L-...-V4V4T-... | G1/2 | 15 | 40 | 9 |
| | | G3/4 | 20 | | |
| | | G1 | 25 | | |
| | | G1 1/4 | 32 | | |
| | | G1 1/2 | 40 | | |
| | | G2 | 50 | | |

Angle seat valves VZXF

Type codes

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| | | VZXF | L | M22C | M | A | G12 | 130 | M1 |
|--|--|------|---|------|---|---|-----|-----|----|
| Type | | VZXF | | | | | | | |
| | Angle seat valve, externally controlled | | | | | | | | |
| Type of directional control valve | | | L | | | | | | |
| | In-line valve | | | | | | | | |
| Valve function | | | | M22C | | | | | |
| | 2/2-way valve, normally closed | | | | | | | | |
| Reset method for single solenoid valves | | | | | M | | | | |
| | None | | | | | | | | |
| | Mechanical spring | | | | | | | | |
| Media flow | | | | | | A | | | |
| | Over valve seat, closes with the flow of media | | | | | | | | |
| | B Under valve seat, closes against the flow of media | | | | | | | | |
| Process valve connection | | | | | | | G12 | | |
| | Thread G1½ | | | | | | | | |
| | Thread G¾ | | | | | | | | |
| | Thread G1 | | | | | | | | |
| | Thread G1¼ | | | | | | | | |
| | Thread G1½ | | | | | | | | |
| | Thread G2 | | | | | | | | |
| Nominal size | | | | | | | | 130 | |
| | 12 mm | | | | | | | | |
| | 13 mm | | | | | | | | |
| | 16 mm | | | | | | | | |
| | 18 mm | | | | | | | | |
| | 23 mm | | | | | | | | |
| | 24 mm | | | | | | | | |
| | 29 mm | | | | | | | | |
| | 31 mm | | | | | | | | |
| | 35 mm | | | | | | | | |
| | 43 mm | | | | | | | | |
| | 45 mm | | | | | | | | |
| Temperature range of medium | | | | | | | | | M1 |
| | Standard, -10 ... +80 °C | | | | | | | | |
| | -40 ... +200 °C | | | | | | | | |

Angle seat valves VZXF

Type codes

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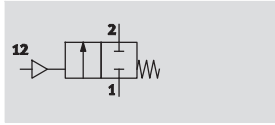
| | | | | | | | | |
|--------------------------------|----------------------|----|----|--|---|----|---|----|
| | | H3 | B1 | | - | 50 | - | 10 |
| Housing material | | | | | | | | |
| H3 | Gunmetal (red brass) | | | | | | | |
| V4 | Stainless steel | | | | | | | |
| Housing, drive material | | | | | | | | |
| B1 | Brass | | | | | | | |
| V4 | Stainless steel | | | | | | | |
| Sealing material | | | | | | | | |
| | Standard, NBR | | | | | | | |
| T | PTFE | | | | | | | |
| Drive size | | | | | | | | |
| 50 | 50 mm | | | | | | | |
| 80 | 80 mm | | | | | | | |
| Operating pressure | | | | | | | | |
| 3 | Max. 3 bar | | | | | | | |
| 4 | Max. 4 bar | | | | | | | |
| 5 | Max. 5 bar | | | | | | | |
| 6 | Max. 6 bar | | | | | | | |
| 7 | Max. 7 bar | | | | | | | |
| 8 | Max. 8 bar | | | | | | | |
| 9 | Max. 9 bar | | | | | | | |
| 10 | Max. 10 bar | | | | | | | |
| 12 | Max. 12 bar | | | | | | | |
| 16 | Max. 16 bar | | | | | | | |
| 20 | Max. 20 bar | | | | | | | |
| 22 | Max. 22 bar | | | | | | | |
| 25 | Max. 25 bar | | | | | | | |
| 40 | Max. 40 bar | | | | | | | |

Angle seat valves VZXF

Technical data – Gunmetal (red brass) design

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Function



Flow rate Kv
2.8 ... 33.8 m³/h

Connecting thread
G¹/₂ ... G2



| General technical data | | | |
|--------------------------------|--|-------------------------------|-------|
| Process valve connection | G ¹ / ₂ | G ³ / ₄ | G1 |
| Auxiliary pilot air connection | G ¹ / ₈ | | |
| Nominal size (DN) | 15 | 20 | 25 |
| Valve function | 2/2-way, single solenoid, closed | | |
| Design | Poppet valve with spring return | | |
| Type of mounting | In-line installation | | |
| Mounting position | Any | | |
| Direction of flow | Non-reversible | | |
| Exhaust function | No flow control | | |
| Sealing principle | Soft | | |
| Reset method | Mechanical spring | | |
| Actuation type | Pneumatic | | |
| Type of control | External | | |
| Pilot medium | Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated | | |
| Switching time on [ms] | 100 | | |
| Switching time off [ms] | 310 | | |
| Product weight [g] | 1,200 | 1,300 | 1,500 |

| Process valve connection | G1 ¹ / ₄ | G1 ¹ / ₂ | G2 |
|--------------------------------|--|--------------------------------|-------|
| Auxiliary pilot air connection | G ¹ / ₈ | | |
| Nominal size (DN) | 32 | 40 | 50 |
| Valve function | 2/2-way, single solenoid, closed | | |
| Design | Poppet valve with spring return | | |
| Type of mounting | In-line installation | | |
| Mounting position | Any | | |
| Direction of flow | Non-reversible | | |
| Exhaust function | No flow control | | |
| Sealing principle | Soft | | |
| Reset method | Mechanical spring | | |
| Actuation type | Pneumatic | | |
| Type of control | External | | |
| Pilot medium | Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated | | |
| Switching time on [ms] | 110 | | 120 |
| Switching time off [ms] | 320 | | 320 |
| Product weight [g] | 1,800 | 2,400 | 3,500 |

Angle seat valves VZXF

Technical data – Gunmetal (red brass) design

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| Operating and environmental conditions | | | | |
|--|----------------------|--|-----------------|--------|
| Process valve connection | | G $\frac{1}{2}$ | G $\frac{3}{4}$ | G1 |
| Process valve nominal pressure (PN) | | 16 | | |
| Pilot pressure | [bar] | 4 ... 10 | | |
| Standard nominal flow rate | [l/min] | 3,000 | 6,800 | 12,000 |
| Flow rate | [m ³ /h] | 2.8 | 6.4 | 11.2 |
| Process valve operating medium | | Neutral gases | | |
| | | Filtered compressed air, filter with pore width 0.2 mm, lubricated or unlubricated | | |
| | | Non-aggressive fluid | | |
| | | Water | | |
| | | Mineral oil-based hydraulic oil | | |
| | | Compressed air | | |
| | | Mineral oil | | |
| Max. viscosity | [mm ² /s] | 600 | | |
| Ambient temperature | [°C] | -10 ... +60 | | |
| Temperature of medium | [°C] | -10 ... +80 | | |
| CE marking (see declaration of conformity) | | - | | |
| Corrosion resistance class CRC ¹⁾ | | 1 | | |

- 1) Corrosion resistance class 1 according to Festo standard 940 070
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

| | | | | |
|--|----------------------|--|------------------|--------|
| Process valve connection | | G1 $\frac{1}{4}$ | G1 $\frac{1}{2}$ | G2 |
| Process valve nominal pressure (PN) | | 16 | | |
| Pilot pressure | [bar] | 4 ... 10 | | |
| Standard nominal flow rate | [l/min] | 18,600 | 23,500 | 36,100 |
| Flow rate | [m ³ /h] | 17.5 | 22 | 33.8 |
| Process valve operating medium | | Neutral gases | | |
| | | Filtered compressed air, filter with pore width 0.2 mm, lubricated or unlubricated | | |
| | | Non-aggressive fluid | | |
| | | Water | | |
| | | Mineral oil-based hydraulic oil | | |
| | | Compressed air | | |
| | | Mineral oil | | |
| Max. viscosity | [mm ² /s] | 600 | | |
| Ambient temperature | [°C] | -10 ... +60 | | |
| Temperature of medium | [°C] | -10 ... +80 | | |
| CE marking (see declaration of conformity) | | To EU Pressure Equipment Directive | | |
| Corrosion resistance class CRC ¹⁾ | | 1 | | |

- 1) Corrosion resistance class 1 according to Festo standard 940 070
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

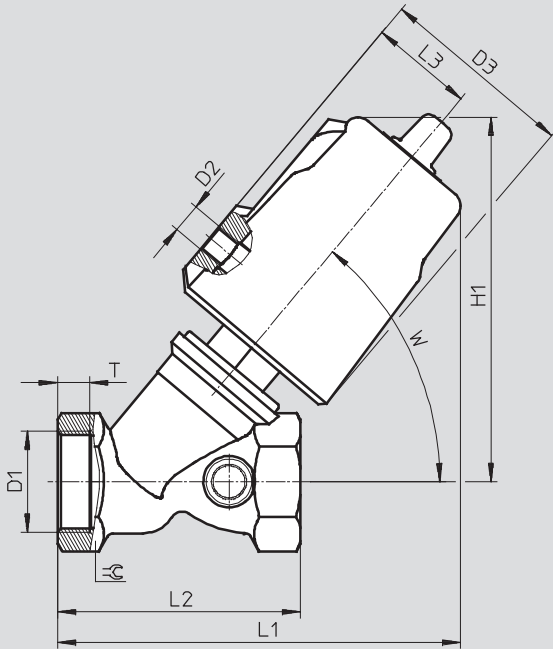
| Materials | | |
|---------------------|--|-----------------|
| Angle seat valve | | Material number |
| 1) Housing | Gunmetal (red brass) | CC499K |
| 2) Drive head | Brass | - |
| 3) Seals | Nitrile rubber | - |
| - Note on materials | Contains PWIS (paint-wetting impairment substances), RoHS-compliant | - |

Angle seat valves VZXF

Technical data – Gunmetal (red brass) design

Dimensions

Download CAD data → www.festo.com



| | D1 | D2 | D3 Ø | H1 | L1 | L2 | L3 | T | W | ☉ |
|---------------------------------|-----|----|---------|-----|-----|-----|----|------|-----|----|
| VZXF-L-...-G12-...-H3B1-50-... | G½ | G⅛ | 62 | 112 | 123 | 66 | 34 | 8 | 50° | 27 |
| VZXF-L-...-G34-...-H3B1-50-... | G¾ | | | 117 | 130 | 75 | | 9 | | 33 |
| VZXF-L-...-G1-...-H3B1-50-... | G1 | | | 121 | 133 | 80 | | 10.5 | | 41 |
| VZXF-L-...-G114-...-H3B1-50-... | G1¼ | | | 139 | 154 | 97 | | 12.5 | | 50 |
| VZXF-L-...-G112-...-H3B1-50-... | G1½ | | | 145 | 161 | 107 | | 14.5 | | 56 |
| VZXF-L-...-G2-...-H3B1-50-... | G2 | | | 154 | 171 | 124 | | 16.5 | | 68 |

Ordering data Angle seat valve VZXF

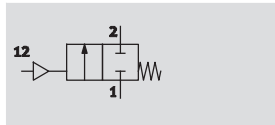
| | Process valve connection | Part No. | Type |
|--|--------------------------|----------|-------------------------------------|
| | G½ | 1002500 | VZXF-L-M22C-M-A-G12-120-H3B1-50-16 |
| | | 1002501 | VZXF-L-M22C-M-B-G12-120-H3B1-50-16 |
| | G¾ | 1002502 | VZXF-L-M22C-M-A-G34-160-H3B1-50-16 |
| | | 1002503 | VZXF-L-M22C-M-B-G34-160-H3B1-50-16 |
| | G1 | 1002504 | VZXF-L-M22C-M-A-G1-230-H3B1-50-16 |
| | | 1002505 | VZXF-L-M22C-M-B-G1-230-H3B1-50-10 |
| | G1¼ | 1002506 | VZXF-L-M22C-M-A-G114-290-H3B1-50-10 |
| | | 1002507 | VZXF-L-M22C-M-B-G114-290-H3B1-50-7 |
| | G1½ | 1002508 | VZXF-L-M22C-M-A-G112-350-H3B1-50-8 |
| | | 1002509 | VZXF-L-M22C-M-B-G112-350-H3B1-50-6 |
| | G2 | 1002510 | VZXF-L-M22C-M-A-G2-430-H3B1-50-4 |
| | | 1002511 | VZXF-L-M22C-M-B-G2-430-H3B1-50-3 |


Angle seat valves VZXF


Technical data – Stainless steel design

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Function



-  - Flow rate Kv
2.8 ... 47.5 m³/h

-  - Connecting thread
G $\frac{1}{2}$... G2



| General technical data | | | | | |
|--------------------------------|---|-----------------|-------|------------------|-------|
| Process valve connection | G $\frac{1}{2}$ | G $\frac{3}{4}$ | G1 | G1 $\frac{1}{4}$ | |
| Auxiliary pilot air connection | G $\frac{1}{8}$ | | | | |
| Nominal size (DN) | 15 | 20 | 25 | 25 | 32 |
| Valve function | 2/2-way, single solenoid, closed | | | | |
| Design | Poppet valve with spring return | | | | |
| Type of mounting | In-line installation | | | | |
| Mounting position | Any | | | | |
| Direction of flow | Non-reversible | | | | |
| Exhaust function | No flow control | | | | |
| Sealing principle | Soft | | | | |
| Reset method | Mechanical spring | | | | |
| Actuation type | Pneumatic | | | | |
| Type of control | External | | | | |
| Pilot medium | Filtered compressed air, grade of filtration 40 μ m, lubricated or unlubricated | | | | |
| Switching time on [ms] | 100 | | | 150 | 110 |
| Switching time off [ms] | 310 | | | 390 | 320 |
| Product weight [g] | 1,300 | 1,400 | 1,600 | 3,600 | 2,200 |

| Process valve connection | G1 $\frac{1}{4}$ | G1 $\frac{1}{2}$ | | G2 | |
|--------------------------------|---|------------------|-------|-------|-------|
| Auxiliary pilot air connection | G $\frac{1}{8}$ | | | | |
| Nominal size (DN) | 32 | 40 | 40 | 50 | 50 |
| Valve function | 2/2-way, single solenoid, closed | | | | |
| Design | Poppet valve with spring return | | | | |
| Type of mounting | In-line installation | | | | |
| Mounting position | Any | | | | |
| Direction of flow | Non-reversible | | | | |
| Exhaust function | No flow control | | | | |
| Sealing principle | Soft | | | | |
| Reset method | Mechanical spring | | | | |
| Actuation type | Pneumatic | | | | |
| Type of control | External | | | | |
| Pilot medium | Filtered compressed air, grade of filtration 40 μ m, lubricated or unlubricated | | | | |
| Switching time on [ms] | 150 | 110 | 150 | 120 | 150 |
| Switching time off [ms] | 390 | 320 | 390 | 320 | 390 |
| Product weight [g] | 4,200 | 2,500 | 4,400 | 3,500 | 5,500 |

Angle seat valves VZXF

Technical data – Stainless steel design

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| Operating and environmental conditions | | | | | |
|--|--|-------|--------|--------|------------------------------------|
| Process valve connection | G1/2 | G3/4 | G1 | G1 1/4 | |
| Process valve nominal pressure (PN) | 40 | | | | |
| Pilot pressure [bar] | 4 ... 10 | | | | |
| Standard nominal flow rate [l/min] | 3,000 | 6,800 | 12,000 | 15,200 | 18,600 |
| Flow rate [m ³ /h] | 2.8 | 6.4 | 11.2 | 14.3 | 17.4 |
| Process valve operating medium | Neutral gases | | | | |
| | Filtered compressed air, filter with pore width 0.2 mm, lubricated or unlubricated | | | | |
| | Non-aggressive fluid | | | | |
| | Water | | | | |
| | Mineral oil-based hydraulic oil | | | | |
| | Compressed air | | | | |
| | Mineral oil | | | | |
| Max. viscosity [mm ² /s] | 600 | | | | |
| Ambient temperature [°C] | -10 ... +60 | | | | |
| Temperature of medium [°C] | -40 ... +200 | | | | |
| CE marking (see declaration of conformity) | - | | | | To EU Pressure Equipment Directive |
| Corrosion resistance class CRC ¹⁾ | 3 | | | | |

1) Corrosion resistance class 3 according to Festo standard 940 070

Components subject to high corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

| Process valve connection | G1 1/4 | G1 1/2 | G2 | | |
|--|--|--------|--------|--------|--------|
| Process valve nominal pressure (PN) | 40 | | | | |
| Pilot pressure [bar] | 4 ... 10 | | | | |
| Standard nominal flow rate [l/min] | 23,000 | 23,500 | 28,200 | 36,100 | 50,700 |
| Flow rate [m ³ /h] | 21.5 | 22 | 26.4 | 33.8 | 47.5 |
| Process valve operating medium | Neutral gases | | | | |
| | Filtered compressed air, filter with pore width 0.2 mm, lubricated or unlubricated | | | | |
| | Non-aggressive fluid | | | | |
| | Water | | | | |
| | Mineral oil-based hydraulic oil | | | | |
| | Compressed air | | | | |
| | Mineral oil | | | | |
| Max. viscosity [mm ² /s] | 600 | | | | |
| Ambient temperature [°C] | -10 ... 60 | | | | |
| Temperature of medium [°C] | -40 ... 200 | | | | |
| CE marking (see declaration of conformity) | To EU Pressure Equipment Directive | | | | |
| Corrosion resistance class CRC ¹⁾ | 3 | | | | |

1) Corrosion resistance class 3 according to Festo standard 940 070

Components subject to high corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

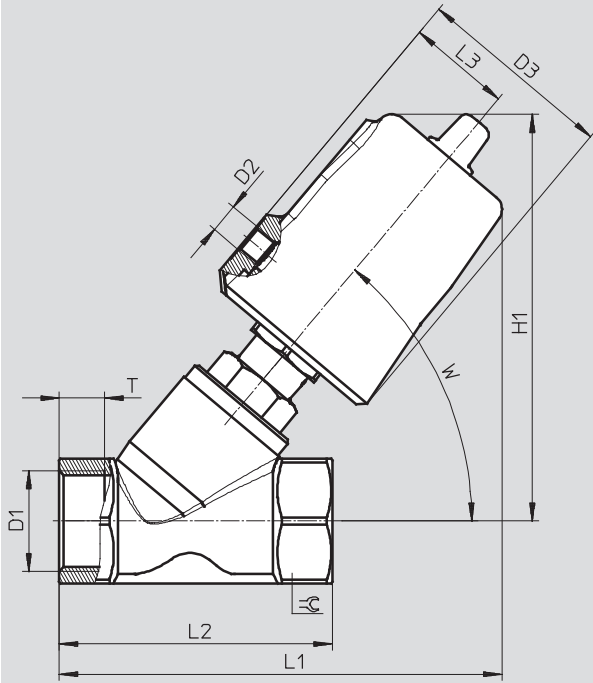
| Materials | | |
|---------------------|--|-----------------|
| Angle seat valve | | Material number |
| 1) Housing | Stainless steel casting | 1.4408 |
| 2) Drive head | Stainless steel | - |
| 3) Seals | PTFE | - |
| - Note on materials | Contains PWIS (paint-wetting impairment substances), RoHS-compliant | - |

Angle seat valves VZXF

Technical data – Stainless steel design

Dimensions

Download CAD data → www.festo.com

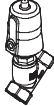


| | D1 | D2 | D3 Ø | H1 | L1 | L2 | L3 | T | W | ☉ |
|----------------------------------|--------|------|---------|-----|-----|-----|----|----|-----|----|
| VZXF-L-...-G12-...-V4V4T-50-... | G1/2 | G1/8 | 62 | 129 | 135 | 65 | 34 | 12 | 50° | 27 |
| VZXF-L-...-G34-...-V4V4T-50-... | G3/4 | | | 130 | 138 | 75 | | 13 | | 32 |
| VZXF-L-...-G1-...-V4V4T-50-... | G1 | | | 135 | 146 | 90 | 15 | 42 | | |
| VZXF-L-...-G1-...-V4V4T-80-... | G1 | | 94 | 177 | 184 | 48 | 42 | | | |
| VZXF-L-...-G114-...-V4V4T-50-... | G1 1/4 | | 62 | 151 | 155 | 110 | 34 | 17 | | 50 |
| VZXF-L-...-G114-...-V4V4T-80-... | G1 1/4 | | 94 | 183 | 194 | 48 | 50 | | | |
| VZXF-L-...-G112-...-V4V4T-50-... | G1 1/2 | | 62 | 155 | 174 | 120 | 34 | 19 | | 55 |
| VZXF-L-...-G112-...-V4V4T-80-... | G1 1/2 | | 94 | 187 | 202 | 48 | 55 | | | |
| VZXF-L-...-G2-...-V4V4T-50-... | G2 | | 62 | 167 | 193 | 150 | 34 | 21 | | 70 |
| VZXF-L-...-G2-...-V4V4T-80-... | G2 | | 94 | 199 | 222 | 48 | 70 | | | |

Angle seat valves VZXF

Technical data – Stainless steel design

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| Ordering data Angle seat valve VZXF | | Part No. | Type |
|---|--------------------------|----------|---|
| | Process valve connection | | |
|  | G $\frac{1}{2}$ | 1002512 | VZXF-L-M22C-M-A-G12-130-M1-V4V4T-50-25 |
| | | 1002513 | VZXF-L-M22C-M-B-G12-130-M1-V4V4T-50-40 |
| | G $\frac{3}{4}$ | 1002514 | VZXF-L-M22C-M-A-G34-180-M1-V4V4T-50-20 |
| | | 1002515 | VZXF-L-M22C-M-B-G34-180-M1-V4V4T-50-20 |
| | G1 | 1002516 | VZXF-L-M22C-M-A-G1-240-M1-V4V4T-50-16 |
| | | 1002517 | VZXF-L-M22C-M-B-G1-240-M1-V4V4T-50-10 |
| | | 1002525 | VZXF-L-M22C-M-A-G1-240-M1-V4V4-T-80-40 |
| | | 1002526 | VZXF-L-M22C-M-B-G1-240-M1-V4V4-T-80-22 |
| | G1 $\frac{1}{4}$ | 1002518 | VZXF-L-M22C-M-A-G114-310-M1-V4V4T-50-9 |
| | | 1002519 | VZXF-L-M22C-M-B-G114-310-M1-V4V4T-50-7 |
| | | 1002527 | VZXF-L-M22C-M-A-G114-310-M1-V4V4T-80-25 |
| | | 1002528 | VZXF-L-M22C-M-B-G114-310-M1-V4V4T-80-10 |
| | G1 $\frac{1}{2}$ | 1002520 | VZXF-L-M22C-M-A-G112-350-M1-V4V4T-50-7 |
| | | 1002521 | VZXF-L-M22C-M-B-G112-350-M1-V4V4T-50-6 |
| | | 1002529 | VZXF-L-M22C-M-A-G112-350-M1-V4V4T-80-20 |
| | | 1002530 | VZXF-L-M22C-M-B-G112-350-M1-V4V4T-80-8 |
| | G2 | 1002522 | VZXF-L-M22C-M-A-G2-450-M1-V4V4T-50-4 |
| | | 1002523 | VZXF-L-M22C-M-B-G2-450-M1-V4V4T-50-3 |
| | | 1002531 | VZXF-L-M22C-M-A-G2-450-M1-V4V4T-80-12 |
| | | 1002532 | VZXF-L-M22C-M-B-G2-450-M1-V4V4T-80-5 |