
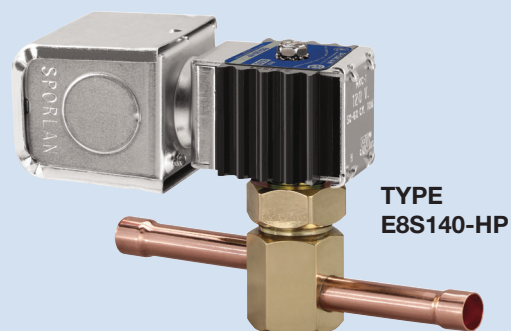


E8-HP SERIES SOLENOID VALVES

- For Refrigerants 22, 134a, 401A, 402A, 404A, 407C, 407F, 410A, 502, 507
- Compact, Pilot Operated, Disc Construction
- Mount Horizontally, on Side, or in a Vertical Line
- MKC-1 and OMKC-1 Coils, Class F
- 



TYPE
E8S140-HP

APPLICATION

Sporlan's **Type E8 Series** are compact solenoid valves with pilot operated disc construction for refrigeration and air conditioning. These valves **may be mounted horizontally, on their side or in a vertical line**. They are suitable for suction line service because very low pressure differential, 1 psi, is required for full operation.

The **Type E8** series solenoid valves features extended solder type connections as standard and the MKC-1 coil. One important benefit to the user is that all valves in the "**E8**" series can be installed without disassembly using either low or no silver content brazing alloy.

The MKC-1 and OMKC-1 coils are Class "F" temperature rated and are provided as standard, therefore a high temperature coil is not required for discharge service.

ORDERING INSTRUCTIONS

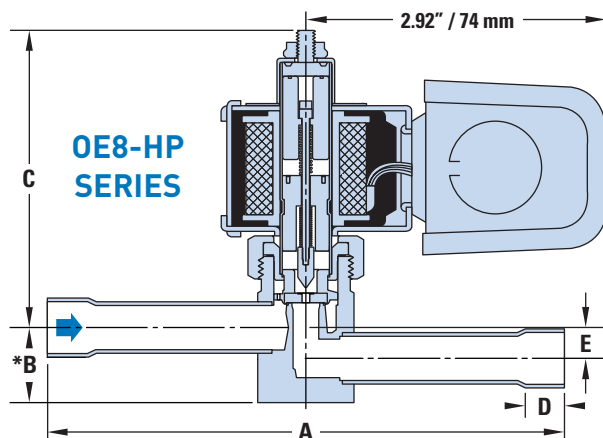
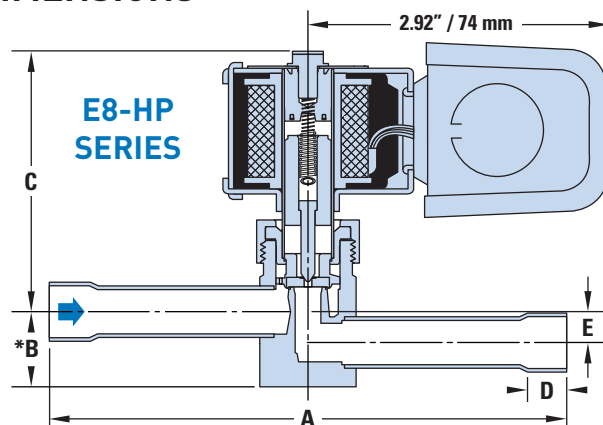
When ordering complete valves, specify Valve Type, Connections, Voltage and Cycles.

When ordering Body Assembly, specify Valve Type and Connections.

When ordering Coil Assembly **ONLY**, specify Coil Type, Voltage and Cycles.

Example: MKC-1 120/50-60.

DIMENSIONS



Inches (mm)

| VALVE SERIES | TYPE | A | B | C | D | E |
|--------------|------------|---------------|-----------|-----------|-----------|----------|
| E8-HP | E8S140-HP | 5.04 (128) | 0.73 (19) | 2.59 (66) | 0.38 (10) | 0.30 (8) |
| | ME8S140-HP | | 1.83 (46) | | | |
| | OE8S140-HP | | 0.73 (19) | 2.89 (73) | | |

*For Manual Lift Stem add 1.10" (28).



ENGINEERING YOUR SUCCESS.

SPECIFICATIONS - E8-HP SERIES

| VALVE SERIES | TYPE | COIL TYPE | STANDARD CONNECTION Inches | PORT SIZE Inches | MOPD psi (bar) | | NOMINAL LIQUID CAPACITIES Tons (kW) of Refrigerant | | | | | | | | | STANDARD COIL RATINGS | | |
|-----------------|------------|--------------|----------------------------------|------------------------|-------------------|---------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--|----|-------|
| | | | | | | | REFRIGERANTS | | | | | | | | | | | |
| | | | | | | | 22 | 134a | 401A | 402A | 404A | 407C | 407F | 410A | 507 | | | |
| | | | | | | | Pressure Drop – psi (bar) | | | | | | | | | VOLTS/CYCLES | | WATTS |
| | | | | | AC | DC | 3 (0.20) | 2 (0.14) | 2 (0.14) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 5 (0.43) | 3 (0.20) | | | AC |
| E8-HP | E8S140-HP | MKC-1 | 1/2 ODF x 1/2 ODF | 1/4 | 450 (31) | 450 (31) | 6.39 (22.8) | 4.87 (17.1) | 5.23 (18.4) | 4.22 (14.8) | 4.23 (14.9) | 5.88 (20.7) | 6.09 (21.4) | 7.82 (27.5) | 4.14 (14.6) | 24/50-60 120/50-60 208/50-60 208-240/50-60 120-208-240/50-60 | 10 | 15 |
| | ME8S140-HP | | | | | | | | | | | | | | | | | |
| | OE8S140-HP | OMKC-1 | | | 400 (27.6) | 400 (27.6) | | | | | | | | | | | | |

E8-HP and ME8-HP maximum rated pressure (MRP) is 700 psig (48 bar). OE8-HP maximum rated pressure (MRP) is 650 psig (45 bar).

Dual voltage 4-wire coils, 120-208-240/50-60 are available at slight additional cost. For other voltages and cycles, consult Sporlan, Washington, MO 63090

Coils are available with junction box. For conduit boss, please contact Sporlan Division for availability.

REFRIGERANT LIQUID TEMPERATURE CORRECTION FACTORS

| REFRIGERANT LIQUID TEMPERATURE °F (°C) | 40 (5) | 50 (10) | 60 (15) | 70 (21) | 80 (27) | 90 (32) | 100 (38) | 110 (43) | 120 (49) | 130 (54) | 140 (69) |
|--|-----------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| R-22 | 1.33 | 1.27 | 1.22 | 1.17 | 1.11 | 1.06 | 1.00 | 0.94 | 0.89 | 0.83 | 0.77 |
| R-134a | 1.39 | 1.33 | 1.26 | 1.20 | 1.13 | 1.07 | 1.00 | 0.93 | 0.87 | 0.80 | 0.73 |
| R-401A | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-402A | 1.57 | 1.48 | 1.39 | 1.29 | 1.20 | 1.10 | 1.00 | 0.90 | 0.79 | 0.68 | 0.56 |
| R-404A | 1.58 | 1.49 | 1.39 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.79 | 0.68 | 0.57 |
| R-407C | 1.45 | 1.38 | 1.30 | 1.23 | 1.15 | 1.08 | 1.00 | 0.92 | 0.84 | 0.75 | 0.67 |
| R-407F | 1.42 | 1.35 | 1.28 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-410A | 1.45 | 1.38 | 1.30 | 1.23 | 1.15 | 1.08 | 1.00 | 0.92 | 0.83 | 0.74 | 0.64 |
| R-507 | 1.54 | 1.45 | 1.36 | 1.27 | 1.18 | 1.09 | 1.00 | 0.90 | 0.80 | 0.69 | 0.56 |

*Liquid capacity is based on 110°F (43°C) condensing temperature, 100°F (38°C) liquid temperature and 40°F (5°C) evaporating temperature. For each 10°F (5°C) reduction in evaporating temperature, capacities are reduced by approximately 1.5%.

LIQUID CAPACITIES - IP/METRIC

| REFRIGERANT | TONS OF REFRIGERATION | | | | | kW OF REFRIGERATION | | | | |
|-------------|-----------------------|------|------|------|------|----------------------|------|------|------|------|
| | PRESSURE DROP - psi* | | | | | PRESSURE DROP - bar* | | | | |
| | 1 | 2 | 3 | 4 | 5 | 0.07 | 0.1 | 0.2 | 0.3 | 0.4 |
| R-22 | 3.69 | 5.22 | 6.39 | 7.38 | 8.25 | 13.0 | 15.6 | 22.1 | 27.1 | 31.3 |
| R-134a | 3.44 | 4.87 | 5.96 | 6.88 | 7.70 | 12.1 | 14.6 | 20.7 | 25.3 | 29.2 |
| R-401A | 3.70 | 5.23 | 6.40 | 7.39 | 8.27 | 13.0 | 15.7 | 22.1 | 27.1 | 31.3 |
| R-402A | 2.43 | 3.44 | 4.22 | 4.87 | 5.44 | 8.56 | 10.3 | 14.6 | 17.9 | 20.6 |
| R-404A | 2.44 | 3.45 | 4.23 | 4.88 | 5.46 | 8.59 | 10.3 | 14.6 | 17.9 | 20.7 |
| R-407C | 3.39 | 4.80 | 5.88 | 6.79 | 7.59 | 11.9 | 14.4 | 20.3 | 24.9 | 28.8 |
| R-407F | 3.51 | 4.97 | 6.09 | 7.03 | 7.86 | 12.4 | 14.9 | 21.0 | 25.8 | 29.8 |
| R-410A | 3.50 | 4.95 | 6.06 | 6.99 | 7.82 | 12.3 | 14.8 | 20.9 | 25.7 | 29.6 |
| R-507 | 2.39 | 3.38 | 4.14 | 4.78 | 5.35 | 8.41 | 10.2 | 14.3 | 17.5 | 20.3 |

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To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

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FOR USE ON AIR CONDITIONING and REFRIGERATION SYSTEMS ONLY.

Parker Hannifin Corporation
Sporlan Division
 206 Lange Drive • Washington, MO 63090 USA
 phone 636 239 1111
 fax 636 239 9130
www.sporlan.com



E43 SERIES SOLENOID VALVES

- For Refrigerants 22, 134a, 401A, 402A, 404A, 407C, 407F, 410A, 507
- Large Capacity, Pilot Operated Valve
- Mount Horizontally, on Side, or in a Vertical Line
- MKC-1 Coil, Class F
- E43 Series 



APPLICATION

Sporlan's **Type E43 Series** are large capacity, pilot operated solenoid valves designed for refrigeration and air conditioning applications. At lowest load, a minimum pressure differential of one psi is required for full operation.

The **Type E43** series may be brazed into line without disassembly as valves contain extended solder type connections. Use caution to place wet rag or chills on extensions at body to prevent excessive overheating.

The **E43 Series** may be mounted horizontally, on their side or in a vertical line. The E43 series is a Class "F" temperature rated coil that is provided as standard, therefore a high temperature coil is **not** required for discharge service.

The E43 series are brass body valves.

ORDERING INSTRUCTIONS

When ordering complete valves, specify Valve Type, Connections, Voltage and Cycles.

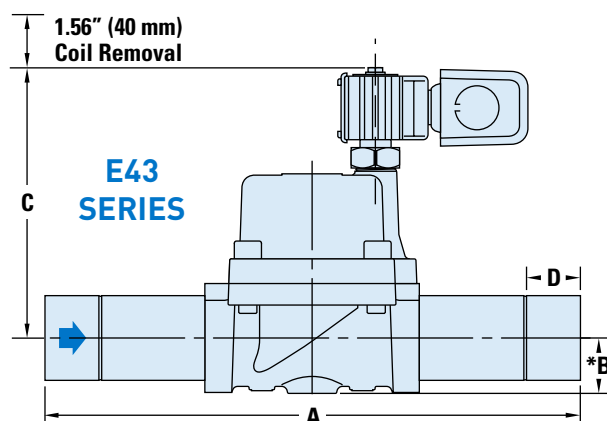
When ordering Body Assembly, specify Valve Type and Connections.

When ordering Coil Assembly ONLY, specify Coil Type, Voltage and Cycles.

Example: MKC-1 120/50-60; OMKC-1 120/50-60.

For capacity tables use the E42 capacities in Bulletin 30-10.
For inrush and holding currents, refer to Bulletin 30-10 (MKC-1 coils).

DIMENSIONS



Inches (mm)

| VALVE SERIES | TYPE | A | *B | C | D |
|--------------|--------------|----------------|--------------|---------------|--------------|
| E43 | E43S1130 | 11.06 (281) | 1.14 (29) | 5.48 (139) | 1.11 (28) |
| | E43S1170 | 11.06 (281) | 1.14 (29) | 5.48 (139) | 1.36 (34) |
| | E43S1130-HP | 11.06 (281) | 1.14 (29) | 5.63 (143) | 1.11 (28) |
| | E43S1170-HP | 11.06 (281) | 1.14 (29) | 5.63 (143) | 1.36 (34) |
| | OE43S1130-HP | 11.06 (281) | 1.14 (29) | 5.94 (151) | 1.11 (28) |
| | OE43S1170-HP | 11.06 (281) | 1.14 (29) | 5.94 (151) | 1.36 (34) |

*For Manual Lift Stem add 1.10" (28).

Manual Lift Stem is not available with Normally Open Valves.



ENGINEERING YOUR SUCCESS.

SPECIFICATIONS – MKC-1 and OMKC-1 Coil

| VALVE SERIES | TYPE | STANDARD CONNECTION Inches | PORT SIZE Inches | MOPD psi (bar) | | NOMINAL LIQUID CAPACITIES Tons (kW) of Refrigerant | | | | | | | | | | STANDARD COIL RATINGS | | | |
|-----------------|--------------|----------------------------------|------------------------|-------------------|-------------|---|---------------|--------------|---------------|---------------|--------------|--------------|--------------|---------------|--|-----------------------|----|-------|--|
| | | | | | | REFRIGERANTS | | | | | | | | | | | | | |
| | | | | | | 22 | 134a | 401A | 402A | 404A | 407C | 407F | 410A | 507 | | | | | |
| | | | | | | Pressure Drop – psi (bar) | | | | | | | | | | VOLTS/CYCLES | | WATTS | |
| | | | | AC | DC | 3 (0.20) | 2 (0.14) | 2 (0.14) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 5 (0.34) | 3 (0.20) | AC | | | DC | |
| E43 | E43S1130 | 1-5/8 ODF x 1-5/8 ODF | 1-5/16 | 300 (21) | 250 (17) | 127 (447) | 96.9 (340) | 104 (365) | 83.9 (295) | 84.2 (296) | 117 (411) | 121 (425) | NA | 82.4 (290) | 24/50-60 120/50-60 208/50-60 208-240/50-60 120-208-240/50-60 | 10 | 15 | | |
| | ME43S1130 | | | | | | | | | | | | | | | | | | |
| | E43S1170 | 2-1/8 ODF x 2-1/8 ODF | | | | | | | | | | | | | | | | | |
| | ME43S1170 | | | | | | | | | | | | | | | | | | |
| E43-HP | E43S1130-HP | 1-5/8 ODF x 1-5/8 ODF | | 450 (31) | 400 (27) | 127 (447) | 96.9 (340) | 104 (365) | 83.9 (295) | 84.2 (296) | 117 (411) | 121 (425) | 156 (548) | 82.4 (290) | | | | | |
| | ME43S1130-HP | | | | | | | | | | | | | | | | | | |
| | OE43S1130-HP | 2-1/8 ODF x 2-1/8 ODF | | 400 (27) | | | | | | | | | | | | | | | |
| | E43S1170-HP | | | | | | | | | | | | | | | | | | |
| | ME43S1170-HP | | | | | | | | | | | | | | | | | | |
| | OE43S1170-HP | | | | | | | | | | | | | | | | | | |

Maximum rated pressure (MRP) is 500 psig (34 bar) for E43 non R-410A series and 680 psig (47 bar) for E43-HP, R-410A series.

Dual voltage 4-wire coils, 120-208-240/50-60 are available at slight additional cost. For other voltages and cycles, consult Sporlan, Washington, MO 63090.

Coils are available with conduit boss or junction box.

Manual Lift Stem is not available with Normally Open Valves.

For OE43-HP Series Valves: When using 208 volts, do not operate 208-240 volt coil at 85% voltage and hot coil. If so, MOPD may be lower than stated in this bulletin. Use OMKC-1 208/50-60 coil.

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SPECIFICATIONS – MKC-0 COIL

| VALVE SERIES | TYPE | STANDARD CONNECTION Inches | PORT SIZE Inches | MOPD psi (bar) | | NOMINAL LIQUID CAPACITIES - Tons (Kw) | | | | | | | | | | | | COIL RATINGS | | |
|-----------------|---------|----------------------------------|------------------------|-------------------|-------------|---------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------------------------------|------------------------------|-------|----|
| | | | | | | REFRIGERANTS | | | | | | | | | | | | | | |
| | | | | | | 22 | 134a | 404A | 407A | 407C | 407F | 448A | 449A | 450A | 507 | 513A | | | | |
| | | | | | | Pressure Drop – psi (bar) | | | | | | | | | | | | STANDARD VOLTS/ CYCLES | WATTS | |
| | | | | | | AC | DC | 3 (0.20) | 2 (0.14) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 2 (0.14) | 3 (0.20) | 2 (0.14) | | AC | DC |
| EL3 | EL3S020 | 1/4 ODF x 1/4 ODF | 0.10 | 300 (21) | 300 (21) | 2.22 (7.80) | 1.63 (5.73) | 1.42 (4.99) | 1.72 (6.05) | 2.09 (7.35) | 1.93 (6.79) | 1.91 (6.72) | 1.90 (6.68) | 1.52 (5.34) | 1.37 (4.82) | 1.31 (4.61) | 24/60 120/60 12 D.C. 24 D.C. | 10 | 10 | |
| | EL3S030 | 3/8 ODF x 3/8 ODF | | | | | | | | | | | | | | | | | | |

Maximum rated pressure (MRP) is 500 psig (34 bar).

Coils are available with Top Spade, DIN, and Leads only.

EL3 Series with mounting holes are NOT standard.

REFRIGERANT LIQUID TEMPERATURE CORRECTION FACTORS

| REFRIGERANT LIQUID TEMPERATURE °F (°C) | 40 (5) | 50 (10) | 60 (15) | 70 (21) | 80 (27) | 90 (32) | 100 (38) | 110 (43) | 120 (49) | 130 (54) | 140 (59) |
|--|--------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|
| R-22 | 1.33 | 1.27 | 1.22 | 1.17 | 1.11 | 1.06 | 1.00 | 0.94 | 0.89 | 0.83 | 0.77 |
| R-134a | 1.39 | 1.33 | 1.26 | 1.20 | 1.13 | 1.07 | 1.00 | 0.93 | 0.87 | 0.80 | 0.73 |
| R-404A | 1.58 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-407A | 1.42 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.84 | 0.76 | 0.67 |
| R-407C | 1.45 | 1.38 | 1.30 | 1.23 | 1.15 | 1.08 | 1.00 | 0.92 | 0.84 | 0.75 | 0.67 |
| R-407F | 1.42 | 1.35 | 1.28 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A | 1.46 | 1.38 | 1.31 | 1.23 | 1.16 | 1.08 | 1.00 | 0.92 | 0.84 | 0.75 | 0.67 |
| R-449A | 1.44 | 1.37 | 1.30 | 1.22 | 1.15 | 1.08 | 1.00 | 0.92 | 0.84 | 0.76 | 0.68 |
| R-450A | 1.41 | 1.34 | 1.27 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.86 | 0.79 | 0.72 |
| R-507 | 1.54 | 1.38 | 1.30 | 1.23 | 1.15 | 1.08 | 1.00 | 0.92 | 0.83 | 0.74 | 0.64 |
| R-513A | 1.44 | 1.37 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.77 | 0.69 |

Minimum operating capacity is at one psi pressure drop for pilot operated valves.

* Liquid capacity is based on 110°F (43°C) condensing temperature, 100°F (38°C) liquid temperature and 40°F (5°C) evaporating temperature. For each 10°F (5°C) reduction in evaporating temperature, capacities are reduced by approximately 1.5%.

LIQUID CAPACITIES - IP

| REFRIGERANT | TONS OF REFRIGERATION | | | | |
|-------------|-----------------------|------|------|------|------|
| | PRESSURE DROP - psi* | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| R-22 | 0.83 | 1.17 | 1.44 | 1.66 | 1.86 |
| R-134a | 0.77 | 1.09 | 1.34 | 1.55 | 1.74 |
| R-404A | 0.53 | 0.76 | 0.93 | 1.07 | 1.20 |
| R-407A | 0.72 | 1.02 | 1.25 | 1.44 | 1.61 |
| R-407C | 0.78 | 1.11 | 1.36 | 1.57 | 1.75 |
| R-407F | 0.71 | 1.01 | 1.23 | 1.43 | 1.60 |
| R-448A | 0.72 | 1.02 | 1.25 | 1.44 | 1.62 |
| R-449A | 0.71 | 1.01 | 1.24 | 1.43 | 1.60 |
| R-450A | 0.72 | 1.02 | 1.25 | 1.44 | 1.62 |
| R-507A | 0.52 | 0.73 | 0.90 | 1.04 | 1.17 |
| R-513A | 0.65 | 0.93 | 1.14 | 1.32 | 1.47 |

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Parker Hannifin Corporation

Sporlan Division

206 Lange Drive • Washington, MO 63090 USA


phone 636 239 1111

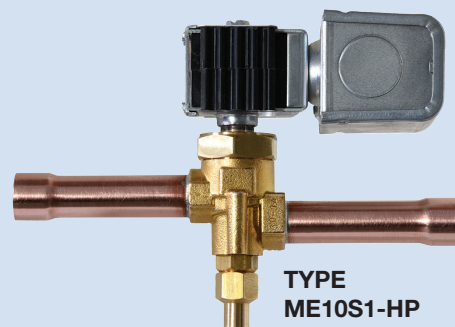
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E10S1-HP SERIES SOLENOID VALVES

- For Refrigerants 22, 134a, 401A, 402A, 404A, 407C, 407F, 410A, 507
- Compact, Pilot Operated, Disc Construction
- Mount Horizontally, on Side, or in a Vertical Line
- MKC-1 and OMKC-1 Coils, Class F
- 



APPLICATION

Sporlan's **Type E10S1 Series** are compact solenoid valves with pilot operated disc construction for refrigeration and air conditioning. These valves **may be mounted horizontally, on their side or in a vertical line**. They are suitable for suction line service because very low pressure differential, 1 psi, is required for full operation.

The **Type E10S1 Series** solenoid valves features extended solder type connections as standard and the MKC-1 coil. One important benefit to the user is that all valves in the "E10" series can be installed without disassembly using either low or no silver content brazing alloy.

The MKC-1 and OMKC-1 coils are Class "F" temperature rated and are provided as standard, therefore a high temperature coil is not required for discharge service.

ORDERING INSTRUCTIONS

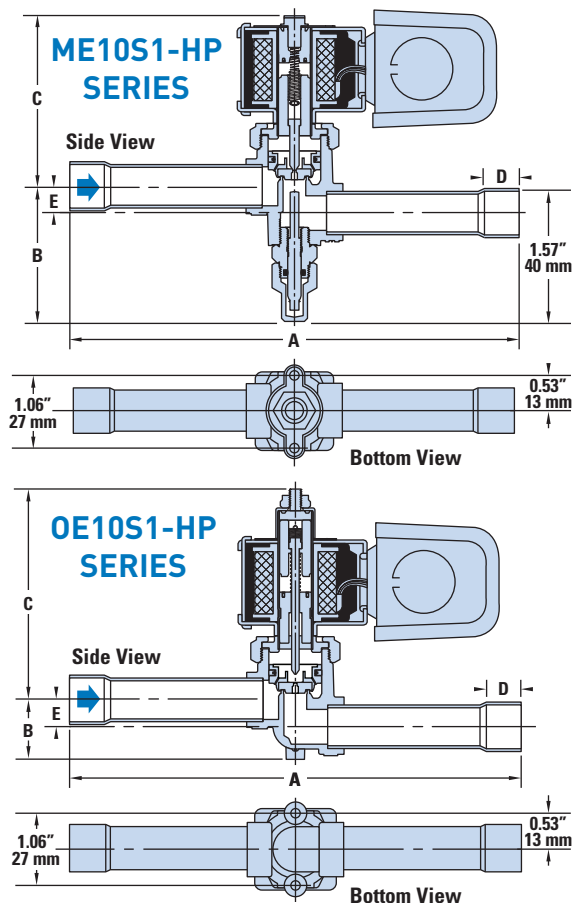
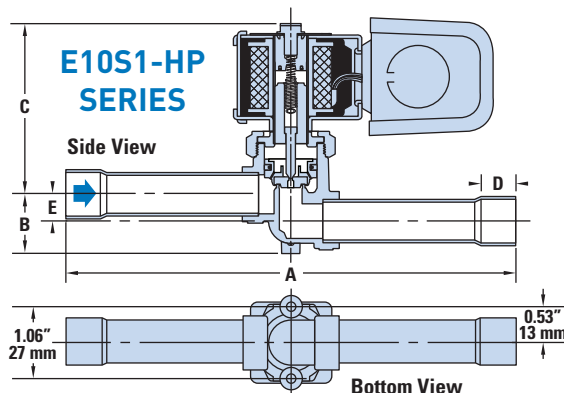
When ordering complete valves, specify Valve Type, Connections, Voltage and Cycles.

When ordering Body Assembly, specify Valve Type and Connections.

When ordering Coil Assembly ONLY, specify Coil Type, Voltage and Cycles.

Example: MKC-1 120/50-60.

DIMENSIONS



Inches (mm)

| VALVE SERIES | TYPE | A | B | C | D | E |
|--------------|-------------|------------|-----------|-----------|-----------|-----------|
| E10S1-HP | E10S140-HP | 5.00 (127) | 0.86 (22) | 2.52 (64) | 0.38 (10) | 0.39 (10) |
| | E10S150-HP | 6.49 (165) | 0.86 (22) | 2.52 (64) | 0.50 (13) | 0.39 (10) |
| | ME10S140-HP | 5.00 (127) | 1.95 (50) | 2.52 (64) | 0.38 (10) | 0.39 (10) |
| | ME10S150-HP | 6.49 (165) | 1.95 (50) | 2.52 (64) | 0.50 (13) | 0.39 (10) |
| | OE10S140-HP | 5.00 (127) | 0.86 (22) | 3.03 (77) | 0.38 (10) | 0.39 (10) |
| | OE10S150-HP | 6.49 (165) | 0.86 (22) | 3.03 (77) | 0.50 (13) | 0.39 (10) |

*For Manual Lift Stem add 1.10" (28).



ENGINEERING YOUR SUCCESS.

SPECIFICATIONS - E10S1-HP SERIES

| TYPE | COIL TYPE | STANDARD CONNECTION Inches | Cv | PORT SIZE Inches | MOPD psi (bar) | | NOMINAL LIQUID CAPACITIES Tons (kW) of Refrigerant | | | | | | | | | | STANDARD COIL RATINGS | | | |
|-------------|-----------|-------------------------------|------|---------------------|-------------------|-------------|---|---------------|---------------|---------------|---------------|----------------|----------------|---------------------------|---------------|---|-----------------------|----|-------|----|
| | | | | | | | REFRIGERANTS | | | | | | | | | | | | | |
| | | | | | 22 | 134a | 401A | 402A | 404A | 407C | 407F | 410A | 507 | Pressure Drop – psi (bar) | | | VOLTS/CYCLES | | WATTS | |
| | | | | | | | | | | | | | | | | | | | AC | DC |
| | | | | | AC | DC | 3 (0.20) | 2 (0.14) | 2 (0.14) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 5 (0.34) | 3 (0.20) | | | AC | DC |
| E10S140-HP | MKC-1 | 1/2 ODF x 1/2 ODF | 2.06 | 5/16 | *450 (31) | 450 (31) | 10.9 (38.3) | 8.3 (29.2) | 8.9 (31.3) | 7.2 (25.3) | 7.2 (25.3) | 10.0 (35.2) | 10.4 (36.6) | 13.3 (46.8) | 7.1 (25.0) | 24/50-60 120/50-60 208/50-60 *208-240/50-60 120-208-240/50-60 | 10 | 15 | | |
| ME10S140-HP | | | | | | | | | | | | | | | | | | | | |
| E10S150-HP | | 5/8 ODF x 5/8 ODF | | | | | | | | | | | | | | | | | | |
| ME10S150-HP | | | | | | | | | | | | | | | | | | | | |
| OE10S140-HP | OMKC-1 | 1/2 ODF x 1/2 ODF | | | 400 (28) | 400 (28) | | | | | | | | | | | | | | |
| OE10S150-HP | | 5/8 ODF x 5/8 ODF | | | | | | | | | | | | | | | | | | |

E10S1-HP and ME10S1-HP maximum rated pressure (MRP) is 700 psig (48 bar). OE10-HP maximum rated pressure (MRP) is 650 psig (45 bar).

Dual voltage 4-wire coils, 120-208-240/50-60 are available at slight additional cost. For other voltages and cycles, consult Sporlan, Washington, MO 63090

Coils are available with junction box. For coil with conduit boss check for availability.

*If operating the E10S1-HP Series Valves with 208-240/50-60 coil at 85% voltage and hot coil, then the MOPD may be less than shown in above table. If requirement is to operate with 208 AC volts at 85% AC volts and hot coil, then use the MKC-1 208/50-60 coil. One can use the 208-240 AC coil with 208 AC volts when operating at full voltage and/or cold coil.

REFRIGERANT LIQUID TEMPERATURE CORRECTION FACTORS

| REFRIGERANT LIQUID TEMPERATURE °F (°C) | 40 (5) | 50 (10) | 60 (15) | 70 (21) | 80 (27) | 90 (32) | 100 (38) | 110 (43) | 120 (49) | 130 (54) | 140 (69) |
|--|-----------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| R-22 | 1.33 | 1.27 | 1.22 | 1.17 | 1.11 | 1.06 | 1.00 | 0.94 | 0.89 | 0.83 | 0.77 |
| R-134a | 1.39 | 1.33 | 1.26 | 1.20 | 1.13 | 1.07 | 1.00 | 0.93 | 0.87 | 0.80 | 0.73 |
| R-401A | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-402A | 1.57 | 1.48 | 1.39 | 1.29 | 1.20 | 1.10 | 1.00 | 0.90 | 0.79 | 0.68 | 0.56 |
| R-404A | 1.58 | 1.49 | 1.39 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.79 | 0.68 | 0.57 |
| R-407C | 1.45 | 1.38 | 1.30 | 1.23 | 1.15 | 1.08 | 1.00 | 0.92 | 0.84 | 0.75 | 0.67 |
| R-407F | 1.42 | 1.35 | 1.28 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-410A | 1.45 | 1.38 | 1.30 | 1.23 | 1.15 | 1.08 | 1.00 | 0.92 | 0.83 | 0.74 | 0.64 |
| R-507 | 1.54 | 1.45 | 1.36 | 1.27 | 1.18 | 1.09 | 1.00 | 0.90 | 0.80 | 0.69 | 0.56 |

*Liquid capacity is based on 110°F (43°C) condensing temperature, 100°F (38°C) liquid temperature and 40°F (5°C) evaporating temperature. For each 10°F (5°C) reduction in evaporating temperature, capacities are reduced by approximately 1.5%.

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SPORLAN

Solenoid Valve with Built-In Check Valve

CE6-HP Series



ENGINEERING YOUR SUCCESS.

CE6-HP SERIES SOLENOID VALVES

- For Refrigerants 22, 134a, 401A, 402A, 404A, 407C, 407F, 410A, 507
- Bi-Directional Solenoid Valve
- Supermarket Pumpdown Control
- Prevents Heat Pump Refrigerant Migration
- Extended Solder Type Connections
- MKC-1 Coil, Class F

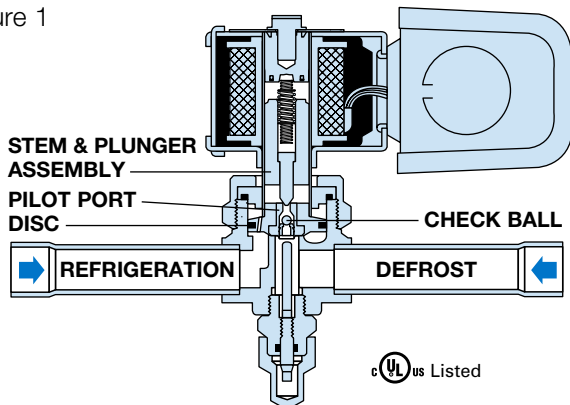


APPLICATION

A solenoid valve with a built-in check valve is designed to replace a liquid line solenoid valve in parallel with a check valve for reverse flow. This valve may be applied in the liquid line of a supermarket case for positive shutoff during pumpdown control, while allowing full flow in the reverse direction during reverse gas defrost. It may also be used in the liquid line of a heat pump to prevent migration of refrigerant to the outdoor unit during the heating mode, while allowing full flow in the reverse direction during the cooling mode. **CAUTION: This valve will not close in the reverse flow/cooling mode.**

See Figure 1. The check ball is small and inserted into the pilot port of the disc. When the valve is energized for operation in the refrigeration flow direction, the pressure on top of the disc is bled off through the pilot port and the disc raises. When the evaporator goes into defrost or the heat pump switches to the cooling mode, the solenoid valve **must be energized**. The reverse flow causes the check ball to close the pilot port from the bottom, pushing the disc up, fully opening the valve.

Figure 1



CE6S1-HP* BI-DIRECTIONAL SOLENOID VALVE

* The "C" is used in this nomenclature to represent the check valve feature and the "-HP" designates high pressure.

The check valve disc also requires a modification in the stem and plunger assembly. Therefore, the disc and stem and plunger assembly must be changed to convert a standard solenoid valve to one with a built-in check valve. Internal parts kits are available for solenoid valves with the built-in check valve.

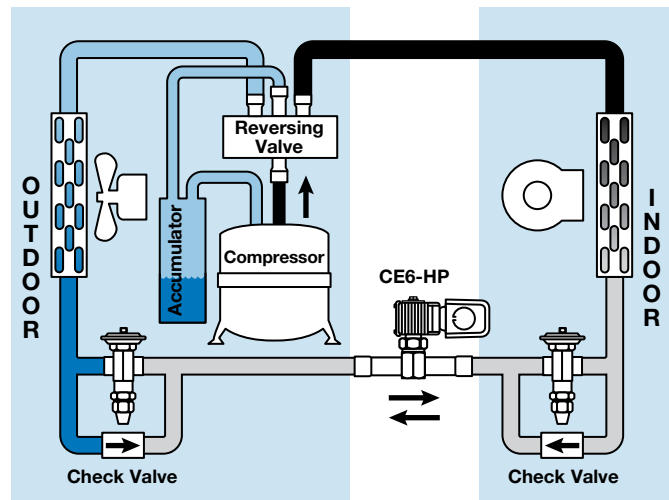
For Heat Pumps

See Figure 2. This valve may be used on some heat pump applications when sized correctly. (Refer to capacities at 40°F

evaporator temperature, see page 4 of this Bulletin.) For heat pumps with long lines that require shut off in both directions, use two solenoid valves with the outlets pointing towards each other.

Extreme care should be taken when brazing connections to avoid damage to internal synthetic parts.

Figure 2



HEATING MODE

- Discharge Gas – High Pressure Vapor
- Saturated – High Pressure Liquid & Vapor
- Liquid – High Pressure
- Saturated – Low Pressure Liquid & Vapor
- Suction Gas – Low Pressure Vapor

CE6S1-HP BI-DIRECTIONAL SOLENOID HEATING MODE (shown above)

Typically, the valve is installed with normal flow to the outdoor coil. When de-energized, this prevents migration of refrigerant to the outdoor coil during heating mode.

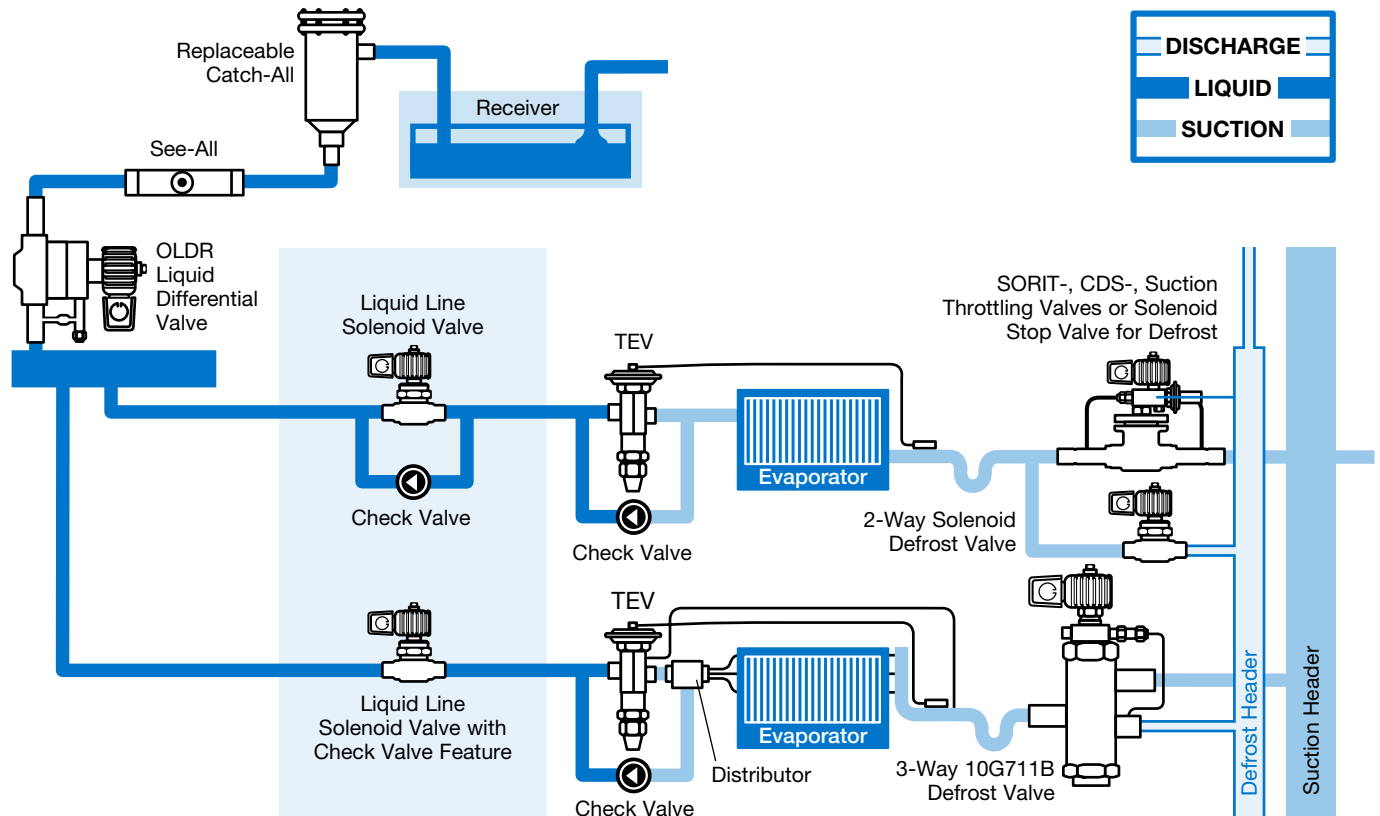
COOLING MODE

Typically the valve is installed with normal flow to the outdoor coil. When in cooling mode, the valve is in reverse flow.

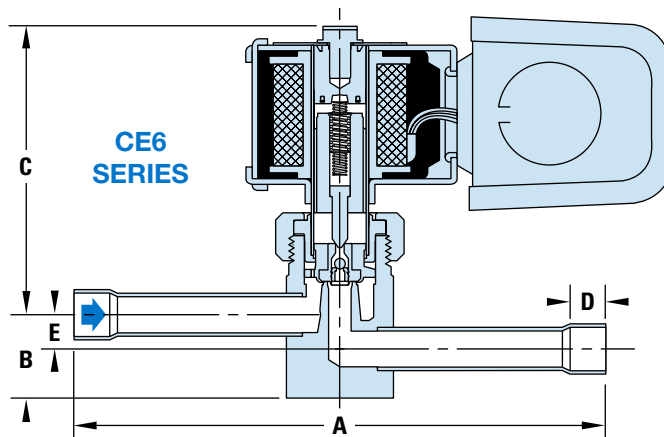
For Supermarkets

See Figure 3. For reverse gas defrost, a liquid line solenoid valve can be installed with a check valve in parallel, to allow reverse flow to the liquid header. This adds the expense of labor and materials. Or, a Sporlan liquid line solenoid valve with the built-in check valve feature can be installed, saving time and money.

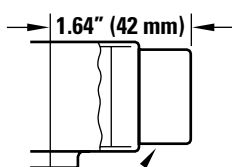
Figure 3
REVERSE HOT GAS DEFROST



DIMENSIONS



Extended Connection



Optional 1/2" (13 mm) Conduit Boss

Inches (mm)

| VALVE SERIES | TYPE | A | B | C | D Fitting Depth ODF | E Offset |
|--------------|------------|-------------------|------------------|------------------|---------------------------|-----------------|
| CE6 | CE6S130-HP | 4.66" (118 mm) | 0.73" (19 mm) | 2.59" (66 mm) | 0.31" (8 mm) | 0.30" (8 mm) |
| | CE6S140-HP | 5.03" (128 mm) | 0.73" (19 mm) | 2.59" (66 mm) | 0.38" (10 mm) | 0.30" (6 mm) |

ORDERING INSTRUCTIONS

When ordering complete valves, specify Valve Type, Connections, Voltage and Cycles.

When ordering Body Assembly, specify Valve Type and Connections.

Example: CE6S130-HP*

Kit: KS-CE6-HP

When ordering Coil Assembly ONLY, specify Coil Type, Voltage and Cycles.

Example: MKC-1 120/50-60

* The "C" is used in this nomenclature to represent the check valve feature and the "-HP" designates high pressure.

SPECIFICATIONS – MKC-1 Coil

| VALVE SERIES | TYPE | STANDARD CONNECTION Inches | PORT SIZE Inches | MOPD psi (bar) | | NOMINAL LIQUID CAPACITIES Tons (kW) of Refrigerant | | | | | | | | STANDARD COIL RATINGS | | | |
|------------------------|------------|----------------------------------|------------------------|---------------------------|-------------|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------------------|--|----|----|
| | | | | | | REFRIGERANTS | | | | | | | | | | | |
| | | | | | | 22 | 134a | 401A | 402A | 404A | 407C | 407F | 410A | | | | |
| | | | | Pressure Drop – psi (bar) | | | | | | | | VOLTS/CYCLES | | WATTS AC DC | | | |
| AC | DC | 3 (0.20) | 2 (0.14) | 2 (0.14) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 3 (0.20) | 5 (0.34) | 3 (0.20) | | | | | | | |
| CE6 NORMAL FLOW | CE6S130-HP | 3/8" ODF | 0.197 | 450 (31) | 400 (27) | 3.63 (12.75) | 2.79 (9.81) | 3.01 (10.59) | 2.44 (8.57) | 2.41 (8.48) | 3.34 (11.75) | 3.46 (12.17) | 4.38 (15.42) | 2.36 (8.29) | 24/50-60 120/50-60 208/50-60 208-240/50-60 120-208-240/50-60 | 10 | 15 |
| | CE6S140-HP | 1/2" ODF | | | | 4.41 (15.50) | 3.35 (11.78) | 3.61 (12.70) | 2.96 (10.40) | 2.91 (10.23) | 4.05 (14.24) | 4.19 (14.74) | 5.39 (18.97) | 2.85 (10.03) | | | |
| CE6 REVERSE FLOW | CE6S130-HP | 3/8" ODF | | | | 3.03 (10.66) | 2.30 (8.10) | 2.48 (8.74) | 2.03 (7.15) | 2.00 (7.03) | 2.78 (9.78) | 2.88 (10.13) | 3.71 (13.04) | 1.96 (6.90) | | | |
| | CE6S140-HP | 1/2" ODF | | | | 3.63 (12.75) | 2.75 (9.67) | 2.97 (10.43) | 2.43 (8.56) | 2.39 (8.41) | 3.33 (11.71) | 3.45 (12.13) | 4.45 (15.65) | 2.34 (8.25) | | | |

Maximum Rated Pressure is 700 psi (48 bar).

Liquid capacity is based on 110°F (43.3°C) condensing temperature, 100°F (38°C) liquid temperature and 40°F (4°C) evaporating temperature.

For each 10°F (-12°C) reduction in evaporating temperature, capacities are reduced by approximately 1.5%.

Refrigerant Liquid Temperature Correction Factors

| TEMPERATURE °F | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|
| TEMPERATURE °C | 4 | 10 | 16 | 21 | 27 | 32 | 38 | 43 | 49 | 54 | 60 |
| R-22 | 1.33 | 1.27 | 1.22 | 1.17 | 1.11 | 1.06 | 1.00 | 0.94 | 0.89 | 0.83 | 0.77 |
| R-134a | 1.39 | 1.33 | 1.26 | 1.20 | 1.13 | 1.07 | 1.00 | 0.93 | 0.87 | 0.80 | 0.73 |
| R-401A | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-402A | 1.57 | 1.48 | 1.39 | 1.29 | 1.20 | 1.10 | 1.00 | 0.90 | 0.79 | 0.68 | 0.56 |
| R-404A | 1.58 | 1.49 | 1.39 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.79 | 0.68 | 0.57 |
| R-407C | 1.45 | 1.38 | 1.30 | 1.23 | 1.15 | 1.08 | 1.00 | 0.92 | 0.84 | 0.75 | 0.67 |
| R-407F | 1.42 | 1.35 | 1.28 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-410A | 1.45 | 1.38 | 1.30 | 1.23 | 1.15 | 1.08 | 1.00 | 0.92 | 0.83 | 0.74 | 0.64 |
| R-507 | 1.54 | 1.45 | 1.36 | 1.27 | 1.18 | 1.09 | 1.00 | 0.90 | 0.80 | 0.69 | 0.56 |

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