

SYJ SERIES**SIGHT GLASS**

Sight glasses are installed after the filter drier in liquid line of refrigerating systems, in order to observe property changes of the refrigerant (liquid/vapor) and to indicate the moisture level by colors.

**FEATURES**

- HIGH PRECISION COLOR INDICATOR
- INDICATOR PASTED CLOSELY TO THE GLASS TO PREVENT SURFACE CONTAMINATION
- SOLID AND CORROSION RESISTANT BRASS MATERIAL
- GOOD READABILITY DUE TO HIGH CLEAR SIGHT GLASS OF WIDE ANGLE
- SEALING OF LOW CREEP PTFE TO ENSURE LEAKAGE FREE PERFORMANCE
- NEW ANNULAR HUMIDITY COLOR INDICATOR. FULL PORT PASSAGE WITH LOW PRESSURE DROP

GENERAL SPECIFICATION

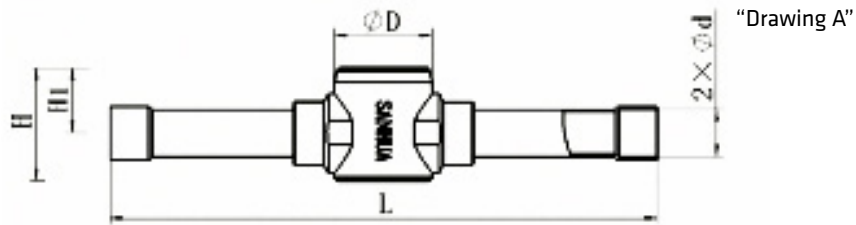
- Applicable for all common HCFC, HFC, HFO refrigerants such as: R22, R134a, R404A, R410A, R507, R407C, R407A/F, R448A/R449A, R452A, R450A/R513A
- Ambient temperature min./max.: -50°C / +80°C
- Medium temperature TS min./max.: -50°C / +80°C
- Max. operating pressure PS: 4,6 MPa (46 bar)
- Installation position:
 - Liquid and suction line
 - Preferably in vertical lines, recommended position for horizontal lines is upwards without inclination in any direction
- Declaration according to PED (all products have been covered by Art.4.3 PED Directive 2014/68/EU)



Version with Solder Connections

| General Characteristics | | | | | | | | | | |
|-------------------------|------------|---|------------------|----------------|------|---------------------|------|------|--------|---------|
| Model Series | Model Name | Part Number (multi package) ¹⁾ | Connection Type | Connecting ODF | | Dimensions & Weight | | | | |
| | | | | Ød | | L | H | H1 | Weight | Drawing |
| | | | | [inch] | [mm] | [mm] | [mm] | [mm] | [g] | |
| SYJ6 | SYJ06H12 | 10285007102 | ODF x ODF solder | - | 6 | 101 | 24 | 14 | 100 | A |
| SYJ6 | SYJ06H11 | 10285007002 | | 1/4 | - | 101 | 24 | 14 | 100 | |
| SYJ10 | SYJ10H11 | 10285007202 | | 3/8 | - | 119 | 24 | 14 | 100 | |
| SYJ10 | SYJ10H12 | 10285007302 | | - | 10 | 119 | 24 | 14 | 100 | |
| SYJ12 | SYJ12H11 | 10285006902 | | 1/2 | - | 146 | 30 | 17 | 200 | |
| SYJ12 | SYJ12H12 | 10285007402 | | - | 12 | 146 | 30 | 17 | 200 | |
| SYJ16 | SYJ16H11 | 10285007502 | | 5/8 | 16 | 146 | 30 | 17 | 200 | |
| SYJ19 | SYJ19H11 | 10285007602 | | 3/4 | - | 173 | 37 | 21 | 300 | |
| SYJ22 | SYJ22H11 | 10285007702 | | 7/8 | 22 | 173 | 37 | 21 | 300 | |

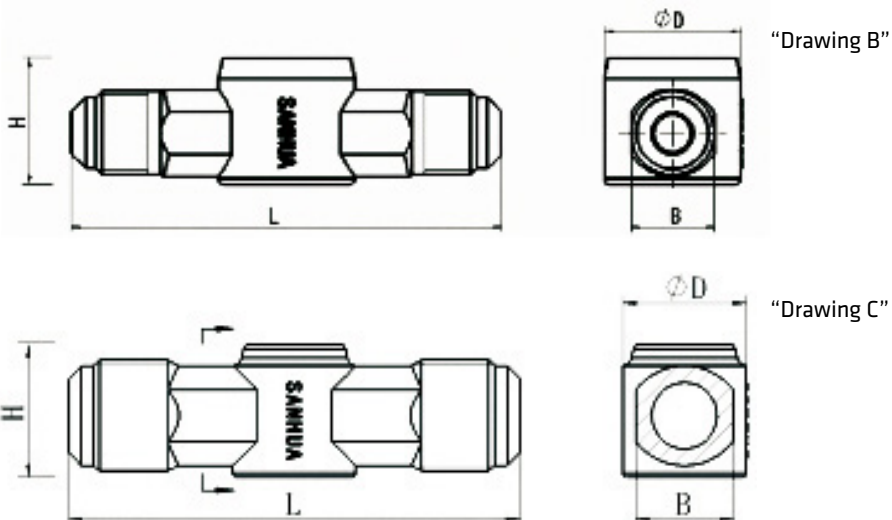
Note: 1) Available also as industrial package. Contact Sanhua for more details.



Version with male/male Flare Connections

| General Characteristics | | | | | | | | | | |
|-------------------------|------------|---|-----------------|-----------|---------------------|------|------|--------|---------|--|
| Model Series | Model Name | Part Number (multi package) ¹⁾ | Connection Type | SAE Flare | Dimensions & Weight | | | | | |
| | | | | Ød | L | H | H1 | Weight | Drawing | |
| | | | | [inch] | [mm] | [mm] | [mm] | [g] | | |
| SYJ6 | SYJ06L11 | 10285007902 | Flare M x M | 1/4 | 67 | 24 | 14 | 110 | B | |
| SYJ10 | SYJ10L11 | 10285008102 | | 3/8 | 82 | 24 | 14 | 240 | | |
| SYJ12 | SYJ12L11 | 10285008302 | | 1/2 | 88 | 30 | 17 | 250 | | |
| SYJ16 | SYJ16L11 | 10285008502 | | 5/8 | 104 | 32 | 17 | 320 | C | |
| SYJ19 | SYJ19L11 | 10285008702 | | 3/4 | 110 | 32 | 15 | 340 | | |

Note: 1) Available also as industrial package. Contact Sanhua for more details.

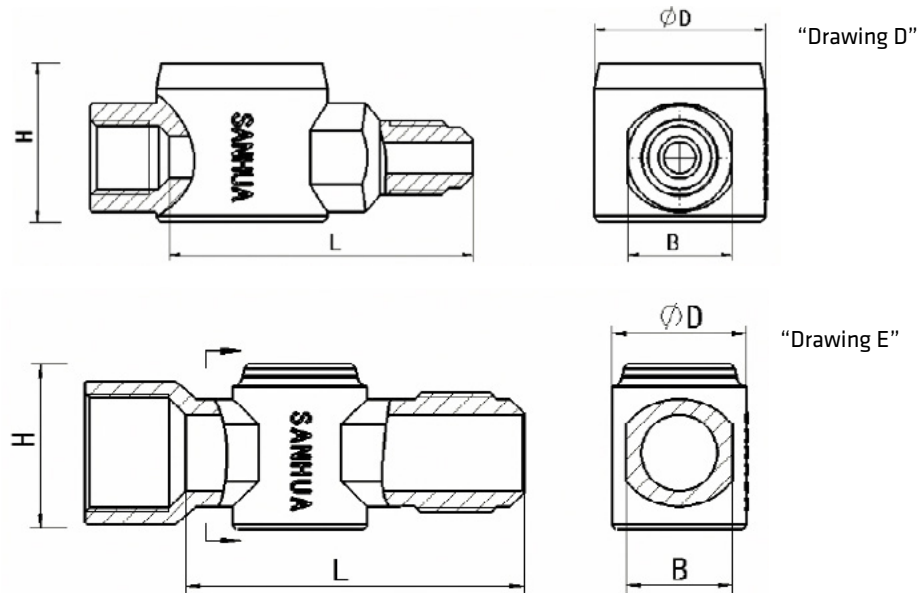




Version with male/female Flare connections

| General Characteristics | | | | | | | | | |
|-------------------------|------------|---|-----------------|-----------|---------------------|------|------|--------|---------|
| Model Series | Model Name | Part Number (multi package) ¹⁾ | Connection Type | SAE Flare | Dimensions & Weight | | | | |
| | | | | Ød | H | φD | B | Weight | Drawing |
| | | | | [inch] | [mm] | [mm] | [mm] | [g] | |
| SYJ6 | SYJ06L41 | 10285008002 | Flare F x M | 1/4 | 30 | 32 | 22 | 200 | D |
| SYJ10 | SYJ10L41 | 10285008202 | | 3/8 | 30 | 32 | 22 | 240 | |
| SYJ12 | SYJ12L41 | 10285008402 | | 1/2 | 32 | 30 | 24 | 250 | |
| SYJ16 | SYJ16L41 | 10285008602 | | 5/8 | 37 | 30 | 24 | 320 | E |
| SYJ19 | SYJ19L41 | 10285008802 | | 3/4 | 37 | 30 | 24 | 330 | |

Note: 1) Available also as industrial package. Contact Sanhua for more details.





Moisture Indication Limits

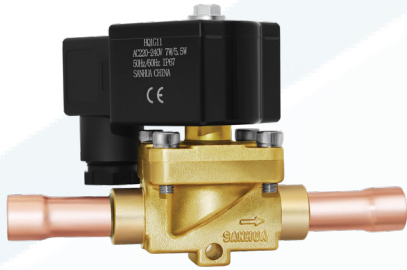
| Refrigerant | Moisture Content 25°C: PPM | | |
|---------------------|----------------------------|--------------|------------|
| | Green/Dry | Middle Color | Yellow/Wet |
| R22 | <100 | 100~200 | >200 |
| R134a | <90 | 90~180 | >180 |
| R404A | <40 | 40~100 | >100 |
| R410A | <90 | 90~300 | >300 |
| R507A | <15 | 15~90 | >90 |
| R407C | <120 | 120~280 | >280 |
| R407A | <180 | 180~340 | >340 |
| R448A | <220 | 220~440 | >440 |
| R449A | <180 | 180~380 | >380 |
| R452A ¹⁾ | <50 | 50~120 | >120 |
| R450A ¹⁾ | <45 | 45~260 | >260 |
| R513A | <180 | 180~280 | >280 |

Note: 1) Calculated data based on refrigerant properties

| Refrigerant | Moisture Content 40°C: PPM | | |
|-----------------------|----------------------------|--------------|------------|
| | Green/Dry | Middle Color | Yellow/Wet |
| R22 | <140 | 140~350 | >350 |
| R134a | <120 | 120~330 | >335 |
| R404A | <80 | 80~160 | >160 |
| R410A | <200 | 200~580 | >580 |
| R507A | <80 | 80~170 | >170 |
| R407C | <100 | 100~260 | >260 |
| R407A | <200 | 200~560 | >560 |
| R448A | <220 | 220~480 | >480 |
| R449A | <200 | 200~450 | >450 |
| R452A ¹⁾ □ | <90 | 90~170 | >170 |
| R450A ¹⁾ □ | <110 | 110~420 | >420 |
| R513A | <200 | 200~380 | >380 |

Note: 1) Calculated data based on refrigerant properties

Solenoid Valves



Solenoid Valve – MDF (DC Voltage)

Maximum operation pressure: 45bar

Flow direction: uni-directional

IP class: 67

Normally closed (NC)

Medium Temperature: -30°C/+105°C (MDF2H...22H)

Ambient Temperature: -30°C/+55°C

El. Connection: Coil with DIN-plug

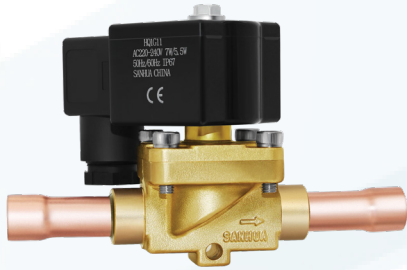
Certificates: PED Art. 4.3, LVD (VDE)

TECHNICAL PARAMETERS OF SOLENOID VALVES

| Valve Body | Kv | Max. OPD | Min. OPD | Solder Connection metric | | Solder Connection imperial | |
|-------------|---------------------|----------|----------|--------------------------|-------------|----------------------------|-------------|
| | [m ³ /h] | [bar] | [bar] | [mm] | U11 | [Inch] | U11 |
| MDF-A03-2H | 0,16 | 31 | 0 | 6 | 10125028502 | 1/4 | 10125031102 |
| MDF-A03-3H | 0,26 | 31 | 0 | 6 | 10125028602 | 1/4 | 10125031402 |
| MDF-D03-6H | 0,8 | 28 | 0,05 | 10 | 10125028702 | 3/8 | 10125020602 |
| MDF-D03-10H | 1,9 | 28 | 0,05 | 12 | 10125020102 | 1/2 | 10125020702 |
| MDF-D03-15H | 2,3 | 28 | 0,05 | 16 | 10125020802 | 5/8 | 10125020802 |
| MDF-A03-20H | 5 | 31 | 0,02 | 22 | 10125030202 | 7/8 | 10125030202 |
| MDF-A03-22H | 5,9 | 31 | 0,2 | 28 | 10125030802 | 1-1/8 | 10125030902 |

TECHNICAL PARAMETERS OF COIL

| Model | U11 | Type | Power Supply | Power [W] |
|------------------|-------------|------------------------|--------------|-----------|
| MQ-D03012-000002 | 10820001302 | DIN ²⁾ Plug | 12V DC | 15 |
| MQ-D03024-000002 | 10820001002 | DIN ²⁾ Plug | 24V DC | 15 |



Solenoid Valve – MDF (AC Voltage)

Maximum operation pressure: 45bar

Flow direction: uni-directional

IP class: 67

Normally closed (NC)

Medium Temperature: -30°C/+105°C (MDF2H...22H)

Ambient Temperature: -30°C/+55°C

El. Connection: Coil with DIN-plug

Certificates: PED Art. 4.3, LVD (VDE)

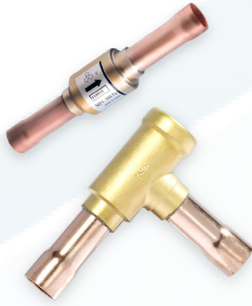
TECHNICAL PARAMETERS OF SOLENOID VALVES

| Valve Body | Kv | Max. OPD | Min. OPD | Solder Connection metric | | Solder Connection imperial | |
|------------|---------------------|----------|----------|--------------------------|-------------|----------------------------|-------------|
| | [m ³ /h] | [bar] | [bar] | [mm] | U11 | [Inch] | U11 |
| MDF2 | 0,16 | 31 | 0 | 6 | 10125028502 | 1/4 | 10125031102 |
| MDF3 | 0,26 | 31 | 0,07 | 6 | 10125028602 | 1/4 | 10125031402 |
| MDF6 | 0,8 | 31 | 0,07 | 10 | 10125028702 | 3/8 | 10125020602 |
| MDF10 | 1,9 | 31 | 0,05 | 12 | 10125020102 | 1/2 | 10125020702 |
| MDF15 | 2,6 | 31 | 0,05 | 16 | 10125020802 | 5/8 | 10125020802 |
| MDF16 | 3,3 | 31 | 0,05 | 22 | 10125030202 | 7/8 | 10125030202 |
| MDF20 | 5 | 31 | 0,2 | 28 | 10125030802 | 1-1/8 | 10125030902 |
| MDF22 | 6 | 31 | 0,2 | 35 | 10125030402 | 1-3/8 | 10125030402 |

TECHNICAL PARAMETERS OF COIL

| Model | U11 | Type | Power Supply | Power [W] [50Hz/ 60Hz] |
|--------|-------------|------------------------|--------------|------------------------|
| HQ1G11 | 10780000402 | DIN ²⁾ Plug | 220~240V AC | 7/5.5 |
| HQ1D11 | 10780000602 | | 120V AC | 5-Jun |
| HQ1K11 | 10780000702 | | 24V AC | 5-Jun |

Check valves



Check valves – YCVS / CCV

Forced: by Spring

Maximum operation pressure: 46bar

Medium Temperature: -50°C/+140°C

Certificates: PED Art. 4.3, LVD (VDE)

Bigger valve sizes and reinforced types available on request

TECHNICAL PARAMETERS OF PISTON CHECK VALVES

| Model | Connections Ø d ODF | | | | Kv [m ³ /h] | Min. OPD [kPa] |
|--------|---------------------|-------------|------|-------------|---------------------------|-------------------|
| | [inch] | U11 | [mm] | U11 | | |
| YCVS2H | 1/4 | 10162001602 | 6 | 10162001502 | 0,56 | 5 |
| YCVS3H | 3/8 | 10162000402 | 10 | 10162000502 | 1,6 | 5 |
| YCVS4H | 1/2 | 10161001302 | 12 | 10162000802 | 2,64 | 5 |
| YCVS5H | 5/8 | 10161001602 | 16 | 10161001602 | 4 | 5 |
| YCVS6H | 3/4 | 10161001702 | 18 | 10162003702 | 6,8 | 5 |
| YCVS7H | 7/8 | 10161001802 | 22 | 10161001802 | 6,8 | 5 |

In case not the right connectors or voltage mentioned please contact the local Sanhua representative.



Check valves – CCV

Forced: by Magnets

Maximum operation pressure: 49bar

Medium Temperature: -40°C/+160°C

Certificates: PED Art. 4.3, LVD (VDE)

TECHNICAL PARAMETERS OF MAGNETIC CHECK VALVES

| Model | Product Number | Connections Ø d ODF | | Kv | Min. OPD |
|-----------|----------------|------------------------|------|---------------------|-------------|
| | | [inch] | [mm] | [m ³ /h] | [kPa] |
| CCV10-021 | 10160047202 | 1/4 | - | 0,8 | 10 |
| CCV10-019 | 10160045902 | 3/8 | - | 1,2 | 10 |
| CCV17-001 | 10160040902 | 1/2 | - | 2,7 | 10 |
| CCV17-017 | 10160043502 | 5/8 | 16 | 2,9 | 10 |
| CCV17-018 | 10160051302 | 3/4 | - | 2,9 | 10 |
| CCV25-020 | 10160047102 | 7/8 | 22 | 6,5 | 10 |
| CCV32-001 | 10160050102 | 1 1/8 | - | 11,4 | 10 |
| CCV38-001 | 10160050202 | 1 3/8 | 35 | 16,2 | 10 |

Filter Driers



Filter Driers - DTG / STG

Medium Temperature: -30°C/+120°C

Ambient Temperature: -30°C/+55°C

Max. Operation pressure: 48,3bar

Filter volume = 1,5in³

Housing: Stainless steel

Flow Direction: single flow direction

Certificates: PED Art. 4.3, LVD (VDE)

TECHNICAL PARAMETERS OF DTG FILTER DRIER

| Filter | Model | U11 | Solder connection | Capacity [kW] | Moisture Absorption (gram H ₂ O) | |
|----------|----------------|-------------|-------------------|---------------|---|--------|
| | | | | | R290 | |
| | | | [inch] | R290 | 23,9°C | 51,7°C |
| DTGM022s | DTG-M02020-901 | 10230041401 | 1/4 | 2,54 | 3,00 | 2,20 |
| DTGM023s | DTG-M02030-901 | 10230039601 | 3/8 | 3,85 | 3,00 | 2,20 |
| DTGM024s | DTG-M02040-901 | 10230041501 | 1/2 | 5,13 | 3,00 | 2,20 |



Filter Driers - STG

Medium Temperature: -30°C/+120°C

Ambient Temperature: -30°C/+55°C

Operation pressure: 48,3bar

With Acid binding or w/o available

Flow Direction: bi-flow direction

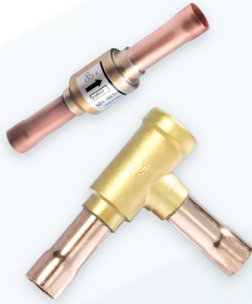
Certificates: PED Art. 4.3, LVD (VDE)

TECHNICAL PARAMETERS OF STG FILTER DRIER

| Filter | General Characteristics of STG-B Filter | | | | | | | | |
|----------|---|--------------------|-----------------|---|--------|------------------|-------------|------|-------------|
| | Model | Nominal Volume | Capacity (R290) | Moisture Absorption (gram H ₂ O) with R290 | | Mech. Connection | | | |
| | [inch ³] | [cm ³] | [kW] | 23,9°C | 51,7°C | Inch | U11 | [mm] | U11 |
| STGB053s | 5 | 82 | 9-30 | 4,45 | 3,2 | 3/8 | 10235006002 | 10 | 10235007802 |
| STGB08x | 8 | 131 | 10-31 | 8,5 | 6,2 | 1/2 | 10235006402 | 12 | 10235008102 |
| STGB16x | 16 | 262 | 24-51 | 15,3 | 11,2 | 5/8 | 10235006702 | 16 | 10235006702 |
| STGB30x | 30 | 492 | 30-66 | 36 | 26,4 | 7/8 | 10235007302 | 22 | 10235007302 |

*Check catalogue or datasheet for more types with right port sizes and order code

Strainers



Strainer KGQ

Body Material: Copper

Port material: Copper / solder connections

Medium Temperature = -30°C/+120°C

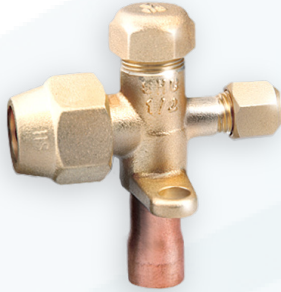
Ambient Temperature = -35°C/+55°C

Operation pressure = 42bar

Certificates: CE/PED

| Model | U11 | Mesh size | Strainer length (G) | Port size |
|----------------|-------------|-----------|---------------------|-----------|
| | | [mesh/in] | [mm] | [mm ID] |
| KGQ-W11331-701 | on request | 100 | 50 | 4,86 |
| KGQ-W11441-701 | 10240013502 | 100 | 50 | 6,45 |
| KGQ-W11442-701 | 10240014702 | 100 | 60 | 6,45 |
| KGQ-W11551-701 | 10240013602 | 100 | 70 | 8,1 |
| KGQ-W11661-701 | 10240013402 | 100 | 50 | 9,62 |
| KGQ-W11881-701 | 10240018002 | 100 | 50 | 12,8 |
| KGQ-W11882-701 | 10240013002 | 100 | 60 | 12,8 |
| KGQ-W11000-176 | on request | 120 | 75 | 9,52 |
| KGQ-W11000-082 | on request | 100 | 75 | 12,7 |
| KGQ-W11000-059 | on request | 100 | 80 | 18 |

Service valves



Service Valve - FSV

Medium Temperature = -30°C/+120°C

Ambient Temperature = -35°C/+55°C

Operation pressure = 45bar

With or w/o charge port

Certificates: CE/PED declaration

GENERAL CHARACTERISTICS

| Model | Product Number ¹⁾ | Connections | | | | Nominal Capacity | PED Category |
|-------------------|------------------------------|--------------|--------|----------------------|-------------------------|------------------|--------------|
| | | ØA Flare | Ød ODF | ØI | Charge Port Flare (SAE) | | |
| | | [inch] | [inch] | [mm] | [inch] | [kW] | |
| FSV-A2GSHC-51 | 10165423102 | 7/16-20UNF | 1/4 | 4,8 | - | - | Art. 4.3 |
| FSV(S)-JA3GSHC-28 | 10165258902 | 5/8-18UNF | 3/8 | 7 | 1/2-20 UNF | 4 | Art. 4.3 |
| FSV-JA4GSHC-52 | 10165423302 | 3/4-16UNF | 1/2 | 10 | 1/2-20 UNF | 7 | Art. 4.3 |
| FSV-JA5GSHC-45 | 10165423402 | 7/8-14UNF | 5/8 | 12,5 | 1/2-20 UNF | 11 | Art. 4.3 |
| FSV(A)-JA6GSHC-68 | On request | 1 1/16-14UNS | 3/4 | Inner 16 Outer 17 | 1/2-20 UNF | 16 | Art. 4.3 |

Note: 1) Extent of delivery:

FSV-JA valve body with schrader valve, cap charge port, cap shut-off valve, nut pipe connection

FSV-A valve body, cap shut-off valve, nut pipe connection, without charge port

CCV SERIES

CHECK VALVE – MAGNETIC TYPE



Magnetic type check valves are designed for installation in commercial refrigerating systems and in residential or industrial air conditioning plants. They are used to control the unidirectional flow of refrigerant to prevent backflow; the magnetic actuator guarantees a high reliability standard. The Design Pressure (PS) of the versions CCV [49 bars] and the allowed refrigerant temperatures range [from -40°C to +160°C], permits a safe and reliable installation in R32 systems without liquid injection and high discharge temperatures.



FEATURES

- THIS VALVE CAN ENSURE THE ONLY CORRECT FLOW DIRECTION
- MAGNETIC CLOSURE ELEMENT FOR HIGH RELIABILITY STANDARDS
- COMPACT AND SEALED DESIGN WITH NO RISK OF EXTERNAL LEAKAGE: HIGHLY SUGGESTED FOR APPLICATIONS WITH FLAMMABLE REFRIGERANTS
- LOW PRESSURE DROPS DURING OPERATION
- CERTIFIED ACCORDING PED CAT.II BY TUV RHEINLAND

GENERAL SPECIFICATION

- Applicable for all common HCFC and HFC refrigerants such as: R22, R134a, R404A, R407A/ C/F, R410A, R507A, R448A, R449A, R450A, R452A, R513A, R32, R1234yf, R1234ze, R454A/ B/C, R455A, R290, R1270, R600a
- Medium temperature TS min./max.: -40°C / +160°C
- Max. operating pressure PS: 4,9 MPa (49 bar)
- Installation position:
 - Flow direction corresponds to the arrow
 - CCV can be installed in any position and direction in the system
- Declaration according to PED



GENERAL CHARACTERISTICS

| Model | Product Number | Connections Ø d ODF | | Kv [m ³ /h] | Min. OPD [kPa] | Dimensions | | Weight [kg] | PED Category [Fluid Group 1] | PED Category [Fluid Group 2] |
|------------|----------------|------------------------|-------------|---------------------------|----------------------|------------|-----------|----------------|---------------------------------------|---------------------------------------|
| | | [inch] | [mm] | | | ØD [mm] | C [mm] | | | |
| | | CCV10-021 | 10160047202 | | | 1/4 | - | | | |
| CCV10-019 | 10160045902 | 3/8 | - | 1,2 | 0,1 | 19,8 | 101,6 | 0.087 | Art. 4.3 | Art. 4.3 |
| CCV17-001 | 10160040902 | 1/2 | - | 2,7 | 0,1 | 25,6 | 127,0 | 0.160 | Cat.II | Art. 4.3 |
| CCV17-017 | 10160043502 | 5/8 | 16 | 2,9 | 0,1 | 25,6 | 127,0 | 0.164 | Cat.II | Art. 4.3 |
| CCV17-018 | 10160051302 | 3/4 | - | 2,9 | 0,1 | 25,6 | 127,0 | 0.172 | Cat.II | Cat.I |
| CCV25-020 | 10160047102 | 7/8 | 22 | 6,5 | 0,1 | 39,0 | 177,5 | 0.304 | Cat.II | Cat.I |
| CCV32-001 | 10160050102 | 1 1/8 | - | 11,4 | 0,1 | 48,6 | 212,5 | 0.412 | Cat.II | Cat.I |
| CCV38-001 | 10160050202 | 1 3/8 | 35 | 16,2 | 0,1 | 63,5 | 239,0 | 0.738 | Cat.II | Cat.I |
| CCV50-001* | 10160050602 | 1 5/8 | - | 24,0 | 0,1 | 76,1 | 270,0 | 0.98 | N.A. | Cat.I |

Note: * model CCV50-001 is not covered by certificate PED cat.II, so it cannot be used in combination with Fluids 1 (e.g. A2L and A3 refrigerants). Please contact your Sanhua referent to verify the possibility to extend the certification for flammable refrigerants.

DIMENSIONAL DRAWING

