***YCVS** SERIES*

# CHECK VALVE PISTON TYPE



Piston 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 so as to prevent backflow. A specific section of the present datasheet is related to the Check Valves models suitable for installation in system using flammable refrigerants HFO (categories A2* and A2L*), and Hydrocarbons HC (category A3*).

*According to ANSI-ASHRAE 34-2016 and EN-378-1 ANNEX EN 378-1:2016 Annex E

## FEATURES

- THIS VALVE CAN ENSURE THE ONLY CORRECT FLOW DIRECTION
- EQUIPPED WITH DAMPING SPRING TO FREELY INSTALL THE VALVE AT POSITIONS WITH PRESSURE PULSE
- AVAILABLE IN 2 LAYOUTS DEPENDING BY SIZE:
  STRAIGHTWAY VALVE AND L-SHAPE VALVE, EASY TO CONNECT.
- SPECIAL VERSION OF CHECK VALVE EQUIPPED WITH REINFORCED SPRING, APPLICABLE TO COMPRESSOR DISCHARGE PIPES IN SINGLE OR MULTI COMPRESSOR SYSTEMS (YCVSH & YCVSH-R SERIES)
- LOW PRESSURE DROP DURING OPERATION
- SOME MODELS ARE CERTIFIED ACCORDING PED CAT.II BY TUV RHEINLAND.

### GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC, HC refrigerants such as: R22, R134a, R404A, R407C, R410A, R507A, R407A/F, R290[1)], R32[1)], R1234yf[1)], R1234ze[1)], R448A/R449A, R452A, R450A/R513A, R744
- Medium temperature TS min./max.:
  -50°C / +140°C or 150°C depending by the model.
- Max. operating pressure PS: 4,6 (46 bar) or 4,9 MPa (49 bar) depending by the model.
- Installation position:
  - Flow direction corresponds to the arrow
  - The suggested positions are described in the installation instructions
- Declaration of Conformity issued in accordance with PED directive (2014/68/EU)
- Certifications: UL/CSA [for models from YCVS(H)2 to YCVS(H)7 not yet available]

# CHECK VALVE PISTON TYPE



## GENERAL CHARACTERISTICS

Section 1: Check Valves suitable for A1 refrigerants (Non-flammable refrigerants)

### *1a. Models with normal piston spring*

| Model | Part Number | Type | Connections Ø d ODF | | Kv | Min. OPD | DN | PS | PED Category [Fluid Group 1] | PED Category [Fluid Group 2] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | [inch] | [mm] | [m³/h] | [kPa] | [mm] | [mm] | | |
| YCVS2H02 | 10162001502 | S | - | 6 | 0,56 | 5 | 5,0 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS2H01 | 10162001602 | S | 1/4 | - | 0,56 | 5 | 5,0 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS3H01 | 10162000402 | S | 3/8 | - | 1,60 | 5 | 7,9 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS3H02 | 10162000502 | S | - | 10 | 1,60 | 5 | 7,9 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS4H02 | 10162000802 | S | - | 12 | 2,64 | 5 | 11,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS4H01 | 10161001302 | S | 1/2 | - | 2,64 | 5 | 11,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS5H03 | 10161001602 | S | 5/8 | 16 | 4,00 | 5 | 13,0 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS6H04 | 10162003702 | S | - | 18 | 6,80 | 5 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS6H03 | 10161001702 | S | 3/4 | - | 6,80 | 5 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS7H03 | 10161001802 | S | 7/8 | 22 | 6,80 | 5 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS 20-77GSHC-1 | 10160030002 | L | 7/8 | 22 | 13,20 | 10 | 19,8 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS 26-88GSHC-1 | 10160037202 | L | - | 28 | 19,02 | 10 | 25,6 | 46 | Not certified | Art. 4.3 |
| YCVS 26-99GSHC-1 | 10160030102 | L | 1 1/8 | - | 19,02 | 10 | 25,6 | 46 | Not certified | Art. 4.3 |
| YCVS 31-BBGSHC-1 | 10160024402 | L | 1 3/8 | 35 | 29,10 | 10 | 31,0 | 46 | Not certified | Art. 4.3 |
| YCVS 31-DDGSHC-1 | 10160037002 | L | 1 5/8 | - | 29,10 | 10 | 31,0 | 46 | Not certified | Art. 4.3 |
| YCVS 31-DDGSHC-2 | 10160032402 | L | - | 42 | 29,10 | 10 | 31,0 | 46 | Not certified | Art. 4.3 |

### *1b. Models with reinforced piston spring*

| Model | Part Number | Type | Connections Ø d ODF | | Kv | Min. OPD | DN | PS | PED Category [Fluid Group 1] | PED Category [Fluid Group 2] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | [inch] | [mm] | [m³/h] | [kPa] | [mm] | [mm] | | |
| YCVSH3H01 | 10162000602 | S | 3/8 | - | 1,60 | 15 | 7,9 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH3H02 | 10162000702 | S | - | 10 | 1,60 | 15 | 7,9 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH4H02 | 10162001302 | S | - | 12 | 2,64 | 15 | 11,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH4H01 | 10162001202 | S | 1/2 | - | 2,64 | 15 | 11,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH5H03 | 10162001102 | S | 5/8 | 16 | 4,00 | 15 | 13,0 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH6H04 | 10162003802 | S | - | 18 | 6,80 | 15 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH6H03 | 10162001002 | S | 3/4 | - | 6,80 | 15 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH7H03 | 10162000902 | S | 7/8 | 22 | 6,80 | 15 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH 20-77GSHC-1 | 10160034602 | L | 7/8 | 22 | 13,20 | 30 | 19,8 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH 26-88GSHC-1 | 10160023702 | L | - | 28 | 19,02 | 30 | 25,6 | 46 | Not certified | Art. 4.3 |
| YCVSH 26-99GSHC-1 | 10160034702 | L | 1 1/8 | - | 19,02 | 30 | 25,6 | 46 | Not certified | Art. 4.3 |
| YCVSH 31-BBGSHC-1 | 10160037402 | L | 1 3/8 | 35 | 29,10 | 30 | 31,0 | 46 | Not certified | Art. 4.3 |
| YCVSH 31-DDGSHC-1 | 10160037102 | L | 1 5/8 | - | 29,10 | 30 | 31,0 | 46 | Not certified | Art. 4.3 |
| YCVSH 31-DDGSHC-2 | 10160042302 | L | - | 42 | 29,10 | 10 | 31,0 | 46 | Not certified | Art. 4.3 |

# CHECK VALVE PISTON TYPE



Section 2: Check Valves suitable for A2L & A3 refrigerants (flammable refr.s)

## *2a. Models with normal piston spring*

| Model | Part Number | Type | Connections Ø d ODF | | Kv | Min. OPD | DN | PS | PED Category [Fluid Group 1] | PED Category [Fluid Group 2] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | [inch] | [mm] | [m³/h] | [kPa] | [mm] | [mm] | | |
| YCVS2H02 | 10162001502 | S | - | 6 | 0,56 | 5 | 5,0 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS2H01 | 10162001602 | S | 1/4 | - | 0,56 | 5 | 5,0 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS3H01 | 10162000402 | S | 3/8 | - | 1,60 | 5 | 7,9 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS3H02 | 10162000502 | S | - | 10 | 1,60 | 5 | 7,9 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS4H02 | 10162000802 | S | - | 12 | 2,64 | 5 | 11,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS4H01 | 10161001302 | S | 1/2 | - | 2,64 | 5 | 11,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS5H03 | 10161001602 | S | 5/8 | 16 | 4,00 | 5 | 13,0 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS6H04 | 10162003702 | S | - | 18 | 6,80 | 5 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS6H03 | 10161001702 | S | 3/4 | - | 6,80 | 5 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS7H03 | 10161001802 | S | 7/8 | 22 | 6,80 | 5 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS 20-77GSHC-1 | 10160030002 | L | 7/8 | 22 | 13,20 | 10 | 19,8 | 46 | Art. 4.3 | Art. 4.3 |
| YCVS 26-88GSHC-1R | 10160055602 | L | - | 28 | 19,02 | 10 | 25,6 | 49 | Cat.II | Art. 4.3 |
| YCVS 26-99GSHC-1R | 10160055802 | L | 1 1/8 | - | 19,02 | 10 | 25,6 | 49 | Cat.II | Art. 4.3 |
| YCVS 31-BBGSHC-1R | 10160056002 | L | 1 3/8 | 35 | 29,10 | 10 | 31,0 | 49 | Cat.II | Art. 4.3 |
| YCVS 31-DDGSHC-1R | 10160056202 | L | 1 5/8 | - | 29,10 | 10 | 31,0 | 49 | Cat.II | Art. 4.3 |
| YCVS 31-DDGSHC-2R | 10160053602 | L | - | 42 | 29,10 | 10 | 31,0 | 49 | Cat.II | Art. 4.3 |

## *2b. Models with reinforced piston spring*

| Model | Part Number | Type | Connections Ø d ODF | | Kv | Min. OPD | DN | PS | PED Category [Fluid Group 1] | PED Category [Fluid Group 2] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | [inch] | [mm] | [m³/h] | [kPa] | [mm] | [mm] | | |
| YCVSH3H01 | 10162000602 | S | 3/8 | - | 1,60 | 15 | 7,9 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH3H02 | 10162000702 | S | - | 10 | 1,60 | 15 | 7,9 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH4H02 | 10162001302 | S | - | 12 | 2,64 | 15 | 11,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH4H01 | 10162001202 | S | 1/2 | - | 2,64 | 15 | 11,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH5H03 | 10162001102 | S | 5/8 | 16 | 4,00 | 15 | 13,0 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH6H04 | 10162003802 | S | - | 18 | 6,80 | 15 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH6H03 | 10162001002 | S | 3/4 | - | 6,80 | 15 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH7H03 | 10162000902 | S | 7/8 | 22 | 6,80 | 15 | 17,1 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH 20-77GSHC-1 | 10160034602 | L | 7/8 | 22 | 13,20 | 30 | 19,8 | 46 | Art. 4.3 | Art. 4.3 |
| YCVSH 26-88GSHC-1R | 10160055702 | L | - | 28 | 19,02 | 30 | 25,6 | 49 | Cat.II | Art. 4.3 |
| YCVSH 26-99GSHC-1R | 10160055902 | L | 1 1/8 | - | 19,02 | 30 | 25,6 | 46 | Cat.II | Art. 4.3 |
| YCVSH 31-BBGSHC-1R | 10160056102 | L | 1 3/8 | 35 | 29,10 | 30 | 31,0 | 49 | Cat.II | Art. 4.3 |
| YCVSH 31-DDGSHC-1R | 10160056302 | L | 1 5/8 | - | 29,10 | 30 | 31,0 | 49 | Cat.II | Art. 4.3 |
| YCVSH 31-DDGSHC-2R | 10160056502 | L | - | 42 | 29,10 | 30 | 31,0 | 49 | Cat.II | Art. 4.3 |

**Note on layout type:** S = straight-way shape; L = angle shape

**Note:** For the simulation of the performance, please refer to the Sanhua selection tool "Quickfinder" or ask your local support.

# CHECK VALVE PISTON TYPE



## DIMENSIONS AND WEIGHTS

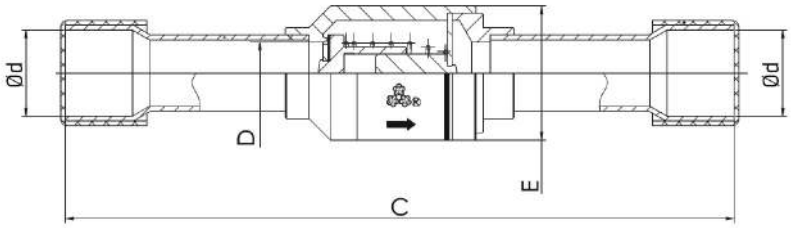
| Models (tables 1a, 2a) | Models (tables 1b, 2b) | Type | Dimensions | | | Weight [kg] |
|---|---|---|---|---|---|---|
| | | | ØD | C | E | |
| | | | [mm] | [mm] | [mm] | |
| YCVS2H02 | - | S | 5 | 90 | 18 | 0,046 |
| YCVS2H01 | - | S | 5 | 90 | 18 | 0,046 |
| YCVS3H01 | YCVSH3H01 | S | 8 | 110 | 17 | 0,046 |
| YCVS3H02 | YCVSH3H02 | S | 8 | 110 | 17 | 0,046 |
| YCVS4H02 | YCVSH4H02 | S | 10 | 130 | 21 | 0,069 |
| YCVS4H01 | YCVSH4H01 | S | 10 | 130 | 21 | 0,069 |
| YCVS5H03 | YCVSH5H03 | S | 13 | 140 | 23.5 | 0,107 |
| YCVS6H04 | YCVSH6H04 | S | 17 | 165 | 30 | 0,168 |
| YCVS6H03 | YCVSH6H03 | S | 17 | 165 | 30 | 0,169 |
| YCVS7H03 | YCVSH7H03 | S | 17 | 165 | 30 | 0,174 |
| YCVS 20-77GSHC-1 (R) | YCVSH 20-77GSHC-1 (R) | L | 20 | 132 | 87 | 0,427 |
| YCVS 26-88GSHC-1 (R) | YCVSH 26-88GSHC-1 (R) | L | 26 | 196 | 123 | 1,050 |
| YCVS 26-99GSHC-1 (R) | YCVSH 26-99GSHC-1 (R) | L | 26 | 196 | 123 | 1,132 |
| YCVS 31-BBGSHC-1 (R) | YCVSH 31-BBGSHC-1 (R) | L | 31 | 196 | 123 | 1,154 |
| YCVS 31-DDGSHC-1 (R) | YCVSH 31-DDGSHC-1 (R) | L | 31 | 196 | 123 | 1,182 |
| YCVS 31-DDGSHC-2 (R) | YCVSH 31-DDGSHC-2 (R) | L | 31 | 196 | 123 | 1,184 |

# CHECK VALVE PISTON TYPE



## GENERAL CHARACTERISTICS

*Straight-way*




*L-shape*

