



# SANHUA

## 2024 PRODUCT OFFERING



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## Filter-Drier Shells with Replaceable Core



Effective and Efficient: Filters solid particles, absorbs moisture and removes acid

Filter-drier shells with replaceable cores are designed for big system protection. The large capacity models are ideal for new system startups to remove moisture and solid particle contamination from field piping. The replaceable core design also simplifies continued system protection and preventive maintenance initiatives.



### FILTER-DRIER SHELL, LIQUID CAPACITY

| Aftermarket Model | Liquid Capacity ( tons ) <sup>1</sup> |               |        |        |        |      |        | Conn. Solder (inch) |
|-------------------|---------------------------------------|---------------|--------|--------|--------|------|--------|---------------------|
|                   | R-404A/R-507                          | R-448A/R-449A | R-407A | R-134a | R-450a | R-22 | R-410A |                     |
| FDSH-48-5-S       | 13.2                                  | 17.2          | 17.1   | 17.9   | 16.6   | 19.2 | 19.0   | 5/8 ODF             |
| FDSH-48-7-S       | 21.2                                  | 27.6          | 27.5   | 28.8   | 26.7   | 30.8 | 30.5   | 7/8 ODF             |
| FDSH-48-9-S       | 30.2                                  | 39.4          | 39.3   | 41.1   | 38.1   | 44.0 | 43.5   | 1-1/8 ODF           |
| FDSH-48-11-S      | 40.8                                  | 53.2          | 53.0   | 55.5   | 51.4   | 59.5 | 58.8   | 1-3/8 ODF           |
| FDSH-96-7-S       | 21.2                                  | 27.6          | 27.5   | 28.8   | 26.7   | 30.8 | 30.5   | 7/8 ODF             |
| FDSH-96-9-S       | 30.2                                  | 39.4          | 39.3   | 41.1   | 38.1   | 44.0 | 43.5   | 1-1/8 ODF           |
| FDSH-96-11-S      | 40.8                                  | 53.2          | 53.0   | 55.5   | 51.4   | 59.5 | 58.8   | 1-3/8 ODF           |
| FDSH-96-13-S      | 50.1                                  | 65.3          | 65.1   | 68.2   | 63.1   | 73.0 | 72.2   | 1-5/8 ODF           |
| FDSH-144-9-S      | 30.2                                  | 39.4          | 39.3   | 41.1   | 38.1   | 44.0 | 43.5   | 1-1/8 ODF           |
| FDSH-144-11-S     | 40.8                                  | 53.2          | 53.0   | 55.5   | 51.4   | 59.5 | 58.8   | 1-3/8 ODF           |
| FDSH-192-11-S     | 40.8                                  | 53.2          | 53.0   | 55.5   | 51.4   | 59.5 | 58.8   | 1-3/8 ODF           |
| FDSH-192-13-S     | 50.1                                  | 65.3          | 65.1   | 68.2   | 63.1   | 73.0 | 72.2   | 1-5/8 ODF           |
| FDSH-192-17-S     | 71.3                                  | 92.9          | 92.6   | 97.0   | 89.8   | 104  | 103    | 2-1/8 ODF           |

### FDSH 48 5 S

S = Sweat Connections  
 Connection Size in eighths of an inch  
 Internal Volume in cubic inches  
 Type: Filter-Drier Shell

### FD CORES AND ELEMENT

| Aftermarket Model | Description    | Filter Media                |
|-------------------|----------------|-----------------------------|
| FD Core 48Hi      | High Moisture  | 100% Molecular Sieve        |
| FD Filter 48      | Filter Element | pure Wood Pulp Filter Paper |

#### REFRIGERANT

R-22, R-134a, R-404A, R-407C, R-410A, R-507

#### LARGE TEMP SERVICE RANGE

-40°F to +248°F

#### FILTRATION

20 µm  
 OPD MAX  
 580 psig

#### PS

650 psig

### FILTER-DRIER SHELL, SUCTION CAPACITY

| Refrigerant   | Suction Capacity ( tons ) <sup>2</sup> |       |        |       |        |       |        |        |      |       |       |        | Conn. Solder (inch) |
|---------------|--|-------|--------|-------|--------|-------|--------|--------|------|-------|-------|--------|---------------------|
|               | R-404A                                 |       | R-448A |       | R-407A |       | R-134a | R-450A | R-22 |       |       | R-410A |                     |
|               | 20°F                                   | -20°F | 20°F   | -20°F | 20°F   | -20°F | 20°F   | 20°F   | 40°F | 20°F  | -20°F | 40°F   |                     |
|               | 2.0                                    | 1.0   | 2.0    | 1.0   | 2.0    | 1.0   | 1.5    | 1.5    | 3.0  | 2.0   | 1.0   | 3.0    |                     |
| FDSH-48-5-S   | 2.18                                   | 0.93  | 2.35   | 1.01  | 2.30   | 0.98  | 1.69   | 1.52   | 3.87 | 2.47  | 1.11  | 4.81   | 5/8 ODF             |
| FDSH-48-7-S   | 3.49                                   | 1.50  | 3.77   | 1.62  | 3.68   | 1.57  | 2.71   | 2.44   | 6.21 | 3.96  | 1.79  | 7.72   | 7/8 ODF             |
| FDSH-48-9-S   | 5.74                                   | 2.47  | 6.20   | 2.68  | 6.06   | 2.59  | 4.46   | 4.01   | 10.2 | 6.51  | 2.95  | 12.68  | 1-1/8 ODF           |
| FDSH-48-11-S  | 7.90                                   | 3.39  | 8.53   | 3.67  | 8.34   | 3.56  | 6.14   | 5.53   | 14.0 | 8.96  | 4.04  | 17.40  | 1-3/8 ODF           |
| FDSH-96-7-S   | 3.72                                   | 1.60  | 4.02   | 1.73  | 3.93   | 1.68  | 2.89   | 2.60   | 6.61 | 4.22  | 1.91  | 8.22   | 7/8 ODF             |
| FDSH-96-9-S   | 6.10                                   | 2.62  | 6.59   | 2.84  | 6.44   | 2.75  | 4.74   | 4.27   | 10.8 | 6.92  | 3.13  | 13.42  | 1-1/8 ODF           |
| FDSH-96-11-S  | 8.41                                   | 3.61  | 9.08   | 3.91  | 8.87   | 3.79  | 6.53   | 5.88   | 14.9 | 9.54  | 4.31  | 18.52  | 1-3/8 ODF           |
| FDSH-96-13-S  | 10.3                                   | 4.43  | 11.12  | 4.80  | 10.87  | 4.65  | 8.00   | 7.20   | 18.3 | 11.69 | 5.28  | 22.75  | 1-5/8 ODF           |
| FDSH-144-9-S  | 6.31                                   | 2.71  | 6.81   | 2.93  | 6.66   | 2.84  | 4.90   | 4.41   | 11.2 | 7.16  | 3.23  | 13.92  | 1-1/8 ODF           |
| FDSH-144-11-S | 8.72                                   | 3.75  | 9.42   | 4.06  | 9.20   | 3.93  | 6.77   | 6.09   | 15.5 | 9.89  | 4.47  | 19.27  | 1-3/8 ODF           |
| FDSH-192-11-S | 9.23                                   | 3.97  | 9.97   | 4.30  | 9.74   | 4.16  | 7.17   | 6.45   | 16.4 | 10.47 | 4.74  | 20.38  | 1-3/8 ODF           |
| FDSH-192-13-S | 11.3                                   | 4.89  | 12.20  | 5.30  | 11.92  | 5.13  | 8.85   | 7.97   | 20.2 | 12.82 | 5.83  | 25.11  | 1-5/8 ODF           |
| FDSH-192-17-S | 13.8                                   | 5.93  | 14.90  | 6.42  | 14.56  | 6.22  | 10.7   | 9.63   | 24.5 | 15.66 | 7.07  | 30.45  | 2-1/8 ODF           |

Note: 1. Rated in accordance with AHRI Standard 710 (I-P): 5°F Evaporator Temperature, 86°F Liquid Temperature, 1psi Pressure Drop  
 2. Rated in accordance with ANSI/AHRI Standard 730 (I-P): 90°F Liquid Temperature, 25°F Superheated Vapor

# Sealed Model Filter-Drier

## GO WITH THE FLOW

Sanhua Filter-Drier molded cores are engineered with a blend of desiccants to protect systems against moisture and acid. The core is secured in place with fiberglass pads on both ends and a 100 mesh metal support screen at the outlet. The pads and core together provide a large available filtering area to remove solid particle contamination to an extremely low level of 20 microns. Sanhua Filter-Driers are compatible with all common HCFC and HFC refrigerants and are UL Listed to a maximum operating pressure of 700 psig.



### Sealed Model FD Nomenclature

**FD 16 3 S**

- S = Sweat Connections (Omit for SAE Flare Connections)
- Connection Size in eighths of an inch
- Desiccant volume in cubic inches
- Type: Filter-Drier

80% Molecular Sieve  
20% Activated Alumina

500 Hour Salt Spray  
Corrosion Resistance

## Sealed Model Filter-Drier | Molded Core



### SOLDER CONNECTION

| Aftermarket Model | Liquid Capacity (tons) <sup>1</sup> |               |        |        |        |      |        | Conn. Solder (inch) |
|-------------------|-------------------------------------|---------------|--------|--------|--------|------|--------|---------------------|
|                   | R-404A/R-507                        | R-448A/R-449A | R-407A | R-134a | R-450a | R-22 | R-410A |                     |
| FD-032-S          | 1.1                                 | 1.4           | 1.4    | 1.5    | 1.4    | 1.6  | 1.6    | 1/4 ODF             |
| FD-033-S          | 2.4                                 | 3.1           | 3.1    | 3.3    | 3.0    | 3.5  | 3.5    | 3/8 ODF             |
| FD-052-S          | 1.3                                 | 1.7           | 1.7    | 1.8    | 1.6    | 1.9  | 1.9    | 1/4 ODF             |
| FD-053-S          | 3.5                                 | 4.6           | 4.5    | 4.8    | 4.4    | 5.1  | 5.0    | 3/8 ODF             |
| FD-082-S          | 1.3                                 | 1.7           | 1.7    | 1.8    | 1.6    | 1.9  | 1.9    | 1/4 ODF             |
| FD-083-S          | 3.8                                 | 4.9           | 4.9    | 5.2    | 4.8    | 5.5  | 5.5    | 3/8 ODF             |
| FD-084-S          | 5.5                                 | 7.2           | 7.1    | 7.5    | 6.9    | 8.0  | 7.9    | 1/2 ODF             |
| FD-163-S          | 3.9                                 | 5.1           | 5.1    | 5.3    | 4.9    | 5.7  | 5.6    | 3/8 ODF             |
| FD-164-S          | 5.7                                 | 7.4           | 7.4    | 7.8    | 7.2    | 8.3  | 8.2    | 1/2 ODF             |
| FD-165-S          | 7.9                                 | 10.3          | 10.3   | 10.7   | 10.0   | 11.5 | 11.4   | 5/8 ODF             |
| FD-166-S          | 8.4                                 | 10.9          | 10.9   | 11.4   | 10.6   | 12.2 | 12.1   | 3/4 ODF             |
| FD-167-S          | 8.6                                 | 11.2          | 11.2   | 11.7   | 10.8   | 12.5 | 12.4   | 7/8 ODF             |
| FD-303-S          | 3.9                                 | 5.1           | 5.1    | 5.3    | 4.9    | 5.7  | 5.6    | 3/8 ODF             |
| FD-304-S          | 5.8                                 | 7.6           | 7.5    | 7.9    | 7.3    | 8.4  | 8.4    | 1/2 ODF             |
| FD-305-S          | 8.3                                 | 10.8          | 10.8   | 11.3   | 10.5   | 12.1 | 12.0   | 5/8 ODF             |
| FD-306-S          | 11.4                                | 14.8          | 14.8   | 15.5   | 14.4   | 16.6 | 16.4   | 3/4 ODF             |
| FD-307-S          | 11.5                                | 15.0          | 14.9   | 15.6   | 14.5   | 16.7 | 16.6   | 7/8 ODF             |
| FD-309-S          | 13.5                                | 17.6          | 17.5   | 18.4   | 17.0   | 19.7 | 19.4   | 1-1/8 ODF           |
| FD-414-S          | 6.4                                 | 8.3           | 8.3    | 8.7    | 8.1    | 9.3  | 9.2    | 1/2 ODF             |
| FD-415-S          | 10.9                                | 14.2          | 14.2   | 14.8   | 13.7   | 15.9 | 15.7   | 5/8 ODF             |
| FD-417-S          | 14.2                                | 18.5          | 18.4   | 19.3   | 17.9   | 20.7 | 20.5   | 7/8 ODF             |
| FD-419-S          | 15.3                                | 19.9          | 19.9   | 20.8   | 19.3   | 22.3 | 22.0   | 1-1/8 ODF           |
| FD-757-S          | 15.8                                | 20.6          | 20.5   | 21.5   | 19.9   | 23.0 | 22.8   | 7/8 ODF             |
| FD-759-S          | 16.6                                | 21.6          | 21.6   | 22.6   | 20.9   | 24.2 | 23.9   | 1-1/8 ODF           |

### SAE FLARE CONNECTION

| Aftermarket Model | Liquid Capacity (tons) <sup>1</sup> |               |        |        |        |      |        | Conn. Flare (inch) |
|-------------------|-------------------------------------|---------------|--------|--------|--------|------|--------|--------------------|
|                   | R-404A/R-507                        | R-448A/R-449A | R-407A | R-134a | R-450a | R-22 | R-410A |                    |
| FD-032            | 1.1                                 | 1.4           | 1.4    | 1.5    | 1.4    | 1.6  | 1.6    | 1/4 SAE            |
| FD-052            | 1.3                                 | 1.7           | 1.7    | 1.8    | 1.6    | 1.9  | 1.9    | 1/4 SAE            |
| FD-053            | 3.3                                 | 4.3           | 4.3    | 4.5    | 4.2    | 4.8  | 4.8    | 3/8 SAE            |
| FD-082            | 1.3                                 | 1.7           | 1.7    | 1.8    | 1.6    | 1.9  | 1.9    | 1/4 SAE            |
| FD-083            | 3.6                                 | 4.7           | 4.7    | 4.9    | 4.5    | 5.2  | 5.2    | 3/8 SAE            |
| FD-162            | 1.3                                 | 1.7           | 1.7    | 1.8    | 1.6    | 1.9  | 1.9    | 1/4 SAE            |
| FD-163            | 3.7                                 | 4.8           | 4.8    | 5.0    | 4.7    | 5.4  | 5.3    | 3/8 SAE            |
| FD-164            | 5.5                                 | 7.2           | 7.1    | 7.5    | 6.9    | 8.0  | 7.9    | 1/2 SAE            |
| FD-165            | 7.7                                 | 10.0          | 10.0   | 10.5   | 9.7    | 11.2 | 11.1   | 5/8 SAE            |
| FD-303            | 3.7                                 | 4.8           | 4.8    | 5.0    | 4.7    | 5.4  | 5.3    | 3/8 SAE            |
| FD-304            | 5.6                                 | 7.3           | 7.3    | 7.6    | 7.1    | 8.2  | 8.1    | 1/2 SAE            |
| FD-305            | 8.1                                 | 10.5          | 10.5   | 11.0   | 10.2   | 11.8 | 11.7   | 5/8 SAE            |
| FD-414            | 6.2                                 | 8.1           | 8.1    | 8.4    | 7.8    | 9.0  | 8.9    | 1/2 SAE            |
| FD-415            | 10.5                                | 13.7          | 13.6   | 14.3   | 13.2   | 15.3 | 15.1   | 5/8 SAE            |

#### REFRIGERANT

R-22, R-134a, R-290, R-404A, R-407C, R-410A, R-507

#### LARGE TEMP SERVICE RANGE

-22°F to +275°F

#### OPD MAX

580 psig

#### PS

650 psig

#### OPD MAX

580 psig

#### PS

650 psig



#### Note:

1. Rated in accordance with AHRI Standard 710 (I-P): 5°F Evaporator temperature, 86°F Liquid temperature, 1 psi Pressure Drop



# Stops Contaminants, Moisture & Acid



System protector for optimum performance & efficiency



Effective & Efficient: Filters solid particles, adsorbs moisture and removes acid



Corrosion resistant



UL Listed



## Bi-Flow Filter-Drier | Solid Filter Core



### SOLDER CONNECTION

| Aftermarket Model | Capacity ( tons ) <sup>1)</sup> |              |      |        |        | Connection Solder (inch) |
|-------------------|---------------------------------|--------------|------|--------|--------|--------------------------|
|                   | R-134a                          | R-404A/R-507 | R-22 | R-407C | R-410A |                          |
| FDBI-083-S        | 4.2                             | 3.1          | 4.5  | 4.5    | 4.5    | 3/8 ODF                  |
| FDBI-084-S        | 6.4                             | 4.7          | 6.8  | 6.8    | 6.8    | 1/2 ODF                  |
| FDBI-163-S        | 4.8                             | 3.5          | 5.1  | 5.1    | 5.0    | 3/8 ODF                  |
| FDBI-164-S        | 7.5                             | 5.5          | 8.0  | 8.0    | 7.9    | 1/2 ODF                  |
| FDBI-165-S        | 8.4                             | 6.2          | 9.0  | 9.0    | 8.9    | 5/8 ODF                  |
| FDBI-303-S        | 6.1                             | 4.5          | 6.6  | 6.5    | 6.5    | 3/8 ODF                  |
| FDBI-304-S        | 7.6                             | 5.6          | 8.2  | 8.2    | 8.1    | 1/2 ODF                  |
| FDBI-305-S        | 8.8                             | 6.5          | 9.5  | 9.4    | 9.4    | 5/8 ODF                  |
| FDBI-307-S        | 13.2                            | 9.21         | 13.5 | 9.4    | 13.5   | 7/8 ODF                  |

### Bi-Flow FD Nomenclature

**FDBI 16 3 S**

S = Sweat Connections  
(Omit for SAE Flare Conn.)

Connection Size  
in eighths of an inch

Desiccant volume in  
cubic inches

Type:  
Filter-Drier Bi-Flow

### SAE FLARE CONNECTION

| Aftermarket Model | Capacity ( tons ) <sup>1)</sup> |              |      |        |        | Connection Solder (inch) |
|-------------------|---------------------------------|--------------|------|--------|--------|--------------------------|
|                   | R-134a                          | R-404A/R-507 | R-22 | R-407C | R-410A |                          |
| FDBI-083          | 4.1                             | 3.0          | 4.4  | 4.4    | 4.3    | 3/8 SAE                  |
| FDBI-084          | 6.3                             | 4.6          | 6.7  | 6.7    | 6.6    | 1/2 SAE                  |
| FDBI-163          | 4.8                             | 3.5          | 5.1  | 5.1    | 5.0    | 3/8 SAE                  |
| FDBI-164          | 7.5                             | 5.5          | 8.0  | 8.0    | 7.9    | 1/2 SAE                  |
| FDBI-165          | 8.4                             | 6.2          | 9.0  | 9.0    | 8.9    | 5/8 SAE                  |
| FDBI-304          | 7.6                             | 5.6          | 8.2  | 8.2    | 8.1    | 1/2 SAE                  |

**Note:** 1. Rated in accordance with AHRI Standard 710 (I-P): 5°F Evaporator temperature, 86°F Liquid temperature, 1 psi Pressure Drop

#### REFRIGERANT

R-22, R-134a, R-404A,  
R-407C, R-410A, R-507

#### LARGE TEMP SERVICE RANGE

-22°F to +248°F  
PS 650 psig

#### FILTRATION

20 µm  
OPD MAX  
580 psig

#### PS

700 psig



## First Line of Protection



Ideal for New Equipment Installation and System Clean-up



Molded Core with High Moisture and Acid Capacity



System Protector for Optimum Efficiency and Performance



### Suction Line FD Nomenclature

**FDSL 16 3 S**

S = Sweat Connections  
(Omit for SAE Flare Conn.)

Connection Size  
in eighths of an inch

Desiccant volume in  
cubic inches

Type:  
Filter-Drier Suction Line

### TECHNICAL DATA

| Model      | Nomial Volume   | Connection Size, "ØD" |
|------------|-----------------|-----------------------|
|            | in <sup>3</sup> | ODF (in)              |
| FDSL-083-S | 8               | 3/8                   |
| FDSL-084-S |                 | 1/2                   |
| FDSL-085-S |                 | 5/8                   |
| FDSL-086-S |                 | 3/4                   |
| FDSL-087-S |                 | 7/8                   |

| Model      | Nomial Volume   | Connection Size, "ØD" |
|------------|-----------------|-----------------------|
|            | in <sup>3</sup> | ODF (in)              |
| FDSL-163-S | 16              | 3/8                   |
| FDSL-164-S |                 | 1/2                   |
| FDSL-165-S |                 | 5/8                   |
| FDSL-166-S |                 | 3/4                   |
| FDSL-167-S |                 | 7/8                   |

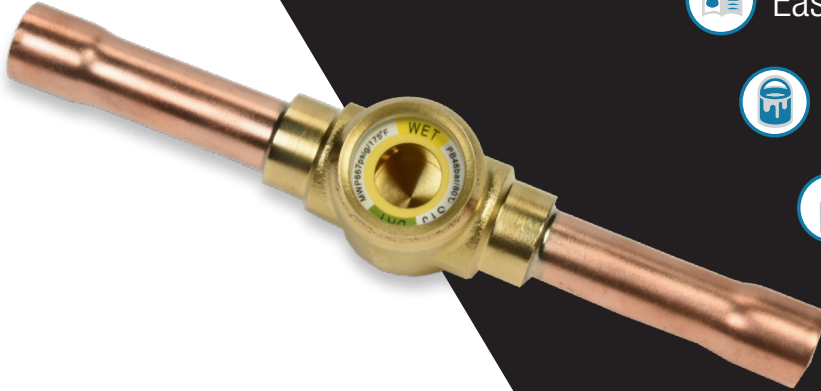
| Model      | Nomial Volume   | Connection Size, "ØD" |
|------------|-----------------|-----------------------|
|            | in <sup>3</sup> | ODF (in)              |
| FDSL-305-S | 30              | 5/8                   |
| FDSL-306-S |                 | 3/4                   |
| FDSL-307-S |                 | 7/8                   |
| FDSL-309-S |                 | 1-1/8                 |

### REFRIGERANT CAPACITY TABLES

| Refrigerant | Suction Capacity (tons) <sup>2</sup> |       |        |       |        |       |        |        |      |      |       |        | Conn. Solder (inch) |
|-------------|--------------------------------------|-------|--------|-------|--------|-------|--------|--------|------|------|-------|--------|---------------------|
|             | R-404A                               |       | R-448A |       | R-407A |       | R-134a | R-450A | R-22 |      |       | R-410A |                     |
|             | 20°F                                 | -20°F | 20°F   | -20°F | 20°F   | -20°F | 20°F   | 20°F   | 40°F | 20°F | -20°F | 40°F   |                     |
|             | Evap. Temp.                          |       |        |       |        |       |        |        |      |      |       |        |                     |
|             | Press. Drop (psi)                    |       |        |       |        |       |        |        |      |      |       |        |                     |
|             | 2.0                                  | 1.0   | 2.0    | 1.0   | 2.0    | 1.0   | 1.5    | 1.5    | 3.0  | 2.0  | 1.0   | 3.0    |                     |
| FDSL-083-S  | 0.80                                 | 0.34  | 0.86   | 0.37  | 0.84   | 0.36  | 0.62   | 0.56   | 1.42 | 0.91 | 0.41  | 1.77   | 3/8 ODF             |
| FDSL-084-S  | 1.17                                 | 0.50  | 1.26   | 0.54  | 1.23   | 0.52  | 0.90   | 0.81   | 2.07 | 1.33 | 0.60  | 2.57   | 1/2 ODF             |
| FDSL-085-S  | 1.56                                 | 0.67  | 1.68   | 0.73  | 1.65   | 0.70  | 1.21   | 1.09   | 2.78 | 1.77 | 0.80  | 3.46   | 5/8 ODF             |
| FDSL-086-S  | 1.68                                 | 0.72  | 1.81   | 0.78  | 1.77   | 0.76  | 1.30   | 1.17   | 2.99 | 1.91 | 0.86  | 3.72   | 3/4 ODF             |
| FDSL-087-S  | 1.72                                 | 0.74  | 1.86   | 0.80  | 1.81   | 0.78  | 1.33   | 1.20   | 3.06 | 1.95 | 0.88  | 3.80   | 7/8 ODF             |
| FDSL-163-S  | 0.82                                 | 0.35  | 0.89   | 0.38  | 0.87   | 0.37  | 0.63   | 0.57   | 1.45 | 0.93 | 0.42  | 1.81   | 3/8 ODF             |
| FDSL-164-S  | 1.20                                 | 0.51  | 1.30   | 0.55  | 1.27   | 0.53  | 0.93   | 0.84   | 2.14 | 1.36 | 0.61  | 2.66   | 1/2 ODF             |
| FDSL-165-S  | 1.66                                 | 0.71  | 1.79   | 0.77  | 1.75   | 0.74  | 1.29   | 1.16   | 2.96 | 1.88 | 0.85  | 3.68   | 5/8 ODF             |
| FDSL-166-S  | 1.77                                 | 0.76  | 1.91   | 0.82  | 1.87   | 0.80  | 1.37   | 1.23   | 3.14 | 2.01 | 0.91  | 3.90   | 3/4 ODF             |
| FDSL-167-S  | 1.82                                 | 0.78  | 1.97   | 0.84  | 1.92   | 0.82  | 1.41   | 1.27   | 3.23 | 2.06 | 0.93  | 4.01   | 7/8 ODF             |
| FDSL-305-S  | 1.74                                 | 0.75  | 1.88   | 0.81  | 1.84   | 0.79  | 1.35   | 1.22   | 3.10 | 1.97 | 0.89  | 3.85   | 5/8 ODF             |
| FDSL-306-S  | 2.40                                 | 1.03  | 2.59   | 1.12  | 2.53   | 1.08  | 1.87   | 1.68   | 4.27 | 2.72 | 1.23  | 5.31   | 3/4 ODF             |
| FDSL-307-S  | 2.41                                 | 1.03  | 2.60   | 1.12  | 2.54   | 1.08  | 1.87   | 1.68   | 4.29 | 2.73 | 1.23  | 5.33   | 7/8 ODF             |
| FDSL-309-S  | 2.84                                 | 1.22  | 3.07   | 1.32  | 3.00   | 1.28  | 2.20   | 1.98   | 5.05 | 3.22 | 1.46  | 6.28   | 1-1/8 ODF           |

Note: <sup>2</sup>Rated in accordance with ANSI/AHRI Standard 730 (I-P): 90°F Liquid Temperature, 25°F Superheated Vapor

## Detects Liquid and Moisture Level



-  Easy to read Wide Angle Sight Glass
-  High Precision Color Indicator
-  Compatible with all common HCFC and HFC refrigerants
-  100% Factory Leak Tested

### REFRIGERANT

R-22, R-134a, R-290,  
R-404A, R-407C, R-410A,  
R-507, R-744, R-407A/F,  
R-1234ze

### LARGE TEMPERATURE SERVICE RANGE

-58°F to +176°F

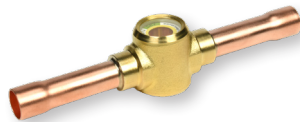
### PS

667 psig



### SAE FLARE: MALE x FEMALE

| Aftermarket Model | Connection Type | SAE Flare |
|-------------------|-----------------|-----------|
|                   |                 | (inch)    |
| SG-2-FM           | Flare F x M     | 1/4       |
| SG-3-FM           | Flare F x M     | 3/8       |
| SG-4-FM           | Flare F x M     | 1/2       |



### ODF SOLDER: FEMALE x FEMALE

| Aftermarket Model | Connection Type Solder | Connection ODF |
|-------------------|------------------------|----------------|
|                   |                        | (inch)         |
| SG-2-S            | ODF x ODF              | 1/4            |
| SG-3-S            | ODF x ODF              | 3/8            |
| SG-4-S            | ODF x ODF              | 1/2            |
| SG-5-S            | ODF x ODF              | 5/8            |
| SG-7-S            | ODF x ODF              | 7/8            |







### SAE FLARE: MALE x MALE

| Aftermarket Model | Connection Type | SAE Flare |
|-------------------|-----------------|-----------|
|                   |                 | (inch)    |
| SG-2              | Flare M x M     | 1/4       |
| SG-3              | Flare M x M     | 3/8       |
| SG-4              | Flare M x M     | 1/2       |



## Less Truck Stock, Fewer Tools Faster Installation

-  Wide refrigerant temperature range
-  High maximum operating pressure differential (MOPD)
-  Low energy consumption coil
-  Coils are double sealed water tight and safe



With a few components on the truck, contractors can replace thousands of TXV variations they encounter.

One control kit and five EEVs replace thousands of refrigeration TXVs!



The Sanhua Superheat Control Kit contains:

- One SEC13 EEV controller
- One Temperature Sensor w/16-foot cable
- One Pressure Transducer w/16-foot cable
- One 5-wire Stator for LPF/DPF EEV w/20-foot cable

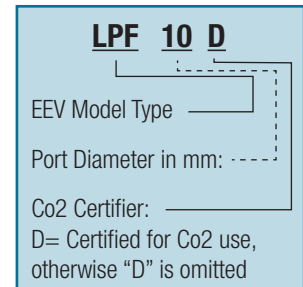
| SEC Superheat Control Kit |                  |                         |
|---------------------------|------------------|-------------------------|
| Aftermarket Model         | Description      |                         |
| SEC613-R4 Kit-LPF-AM      | SEC613-R4        | Controller              |
|                           | NTC5A1           | Temperature Sensor      |
|                           | YCQB02L28-1      | Pressure Transducer     |
|                           | PQ-M24012-000009 | EEV Stator              |
| Not included in Kit       | PQ-M03012-000001 | EEV Stator for DPF(SO3) |



Sanhua Superheat Control Kit - The Next Generation of Refrigeration!



# Sanhua offers 5 models of LPF EEVs to pair with the SEC Superheat Control Kit



NOMINAL FLOW CAPACITY, TONS

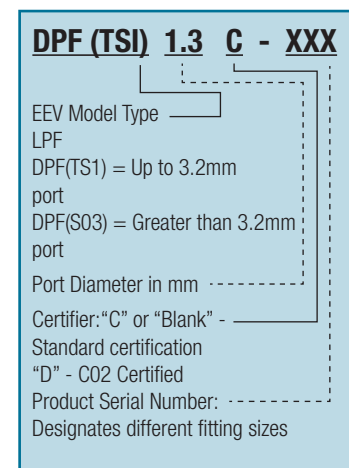
LPF IS FOR REFRIGERATION AND AC (COOLING DUTY ONLY)

| Sanhua EEV   | TXV Cross - Reference: Solder Connections: 3/8" ODF x 1/2" ODF |              |                |            |            |            |            | Sporlan TXV<br>Balanced Port |
|--------------|--|--------------|----------------|------------|------------|------------|------------|------------------------------|
|              | R-134a   | R-448A       | R-404A         | R-407A     | R-407F     | R-22       | R-410A     | All Refrigerants             |
| LPF08-001-AM | 1/8 to 1/6   | 1/5 to 1/3   | 1/8 to 1/6     | 1/5 to 1/3 | 1/5 to 1/3 | 1/5 to 1/3 | 1/5 to 1/3 | AAA                          |
| LPF10-002-AM | 1/4  | 1/2          | 1/4            | 1/2 to 3/4 | 1/2 to 3/4 | 1/2 to 3/4 | 1/2 to 3/4 | AA                           |
| LPF14-002-AM | 1/2 to 1   | 3/4 to 1-1/2 | 1/2 to 1       | 1 to 1-1/2 | 1 to 1-1/2 | 1 to 1-1/2 | 1 to 1-1/2 | A                            |
| LPF18-002-AM | 1-1/2 to 1-3/4   | 2            | 1-1/4 to 1-1/2 | 2 to 2-1/2 | 2 to 2-1/2 | 2 to 2-1/2 | 2 to 2-1/2 | B                            |
| LPF24-002-AM | 2 to 3   | 1-1/2 to 4   | 2 to 3         | 3 to 5     | 3 to 5     | 3 to 5     | 3 to 5     | C                            |

NOMINAL FLOW CAPACITY, TONS

DPF IS FOR AC AND HEAT PUMP SYSTEMS (SUPPORTS BI-FLOW OPERATION)

- Real-time display of system metrics including temperature & pressure
- Configure for different system refrigerants with the touch of a button
- No more turning TXV adjusting stems, set the superheat with a button press





## The EASY Cartridge Style TXV

- Easy component selection
- Easy to stock with fewer parts
- Easy on-the-spot assembly

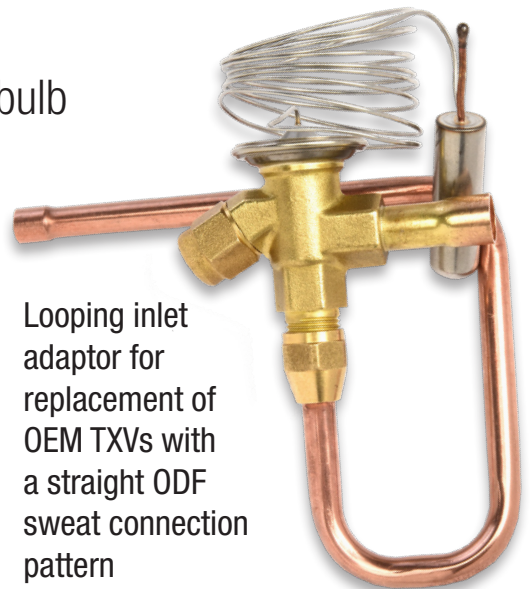
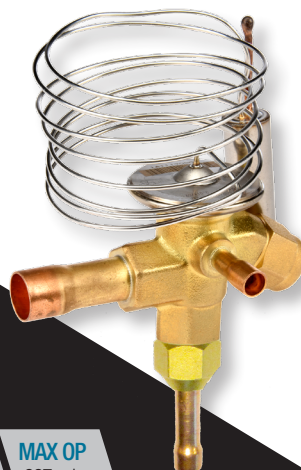
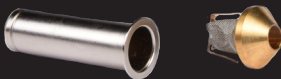
Universal Replacement for over 95% of installed refrigeration TXVs!

Control superheat with confidence. The Sanhua model TXVH is designed with world-class engineering and manufacturing technology combined with premium materials for superior performance.

- Wide evaporator temperature range thermostatic charge
- Utilizes cross-charge technology
- Available with MOP function to protect compressor from excessive suction pressure during operation
- Stainless steel power head, capillary, and sensing bulb  
Fixed and welded power head improves assembly integrity and simplifies component selections



Eight inlet cartridges available for precise capacity selection



Looping inlet adaptor for replacement of OEM TXVs with a straight ODF sweat connection pattern

Adaptor for ODF sweat inlet connection



### REFRIGERANT

R-22, R-134a, R-404A,  
R-407C, R-407F, R-410A,  
R-507

### LARGE TEMP SERVICE RANGE

-30°F to +130°F  
OPD MAX 580 psig  
PS 650 psig

### FLUID TEMP RANGE

-40°F to +158°F

### MAX OP

667 psig



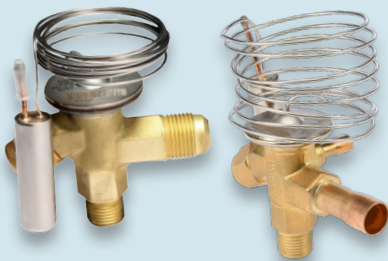
## Step 1:

Select orifice size based on nominal capacity



## Step 2:

Select body to match refrigerant and connection style desired

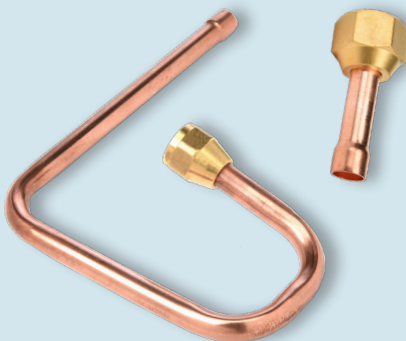


## Step 3:

### SOLDER ADAPTERS

| Aftermarket Model | Solder Connection |
|-------------------|-------------------|
| TXVH-3S-IN        | 3/8"              |
| TXVH-2S-IN        | 1/4"              |
| TXVH-3Loop-IN     | 3/8"              |
| TXVH-2S-EXTEQ     | 1/4"              |

Note: 1. Copper tube and flare nut are included



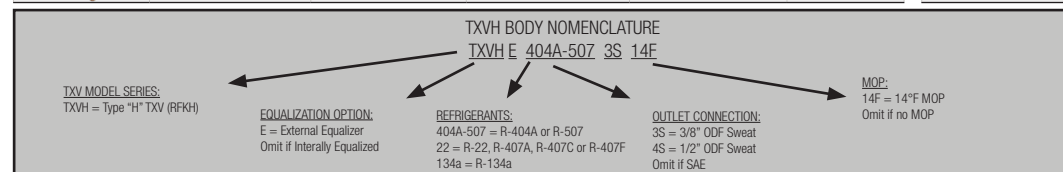
## STEP 1: ORIFICE SELECTION CRITERIA

| Orifice Model | Nominal Capacity                   |               |                 |               |        |               |
|---------------|------------------------------------|---------------|-----------------|---------------|--------|---------------|
|               | R-22<br>R-407A<br>R-407C<br>R-407F |               | R-404A<br>R-507 |               | R-134a |               |
|               | Tons                               | Balanced Port | Tons            | Balanced Port | Tons   | Balanced Port |
| TXVH-0X       | 1/5                                | -             | 1/8             | -             | 1/8    | -             |
| TXVH-00       | 1/3                                | AAA           | 1/4             | AAA           | 1/5    | AAA           |
| TXVH-01       | 3/4                                | AA            | 1/2             | AA            | 1/3    | -             |
| TXVH-02       | 1                                  | -             | 3/4             | -             | 1/2    | AA            |
| TXVH-03       | 1-1/2                              | A             | 1-1/4           | A             | 3/4    | -             |
| TXVH-04       | 2-1/2                              | B             | 2               | B             | 1      | A             |
| TXVH-05       | 3-1/2                              | -             | 2-1/2           | -             | 1-3/4  | B             |
| TXVH-06       | 5                                  | C             | 3               | C             | 2-1/2  | C             |

## STEP 2: SELECT BODY TO MATCH REFRIGERANT AND CONNECTION

## STEP 3

| Valve Body Configuration   | R-22<br>R-407A<br>R-407C<br>R-407F | R-404A<br>R-507   | R-407A<br>R-507<br>Low Temp<br>(with MOP) | R-134a        | Inlet Adaptor |
|--|------------------------------------|-------------------|---|---------------|---------------|
|  3/8 x 1/2 SAE Flare (Internally Equalized)  | TXVH-22                            | TXVH-404A-507     | TXVH-404A-507-14F                         | TXVH-134a     | Not Required  |
|  3/8 x 1/2 x 1/4 SAE Flare                  | TXVHE-22                           | TXVHE-404A-507    | TXVHE-404A-507-14F                        | TXVHE-134a    | Not Required  |
|  1/4 x 3/8 ODF Sweat (Internally Equalized) | TXVH-22-3S                         | TXVH-404A-507-3S  | TXVH-404A-507-3S-14F                      | TXVH-134a-3S  | TXVH-2S-IN    |
|  1/4 x 3/8 x 1/4 ODF Sweat                  | TXVHE-22-3S                        | TXVHE-404A-507-3S | TXVHE-404A-507-3S-14F                     | TXVHE-134a-3S | TXVH-2S-IN    |
|  3/8 x 1/2 ODF Sweat (Internally Equalized) | TXVH-22-4S                         | TXVH-404A-507-4S  | TXVH-404A-507-4S-14F                      | TXVH-134a-4S  | TXVH-3S-IN    |
|  3/8 x 1/2 x 1/4 ODF Sweat                  | TXVHE-22-4S                        | TXVHE-404A-507-4S | TXVHE-404A-507-4S-14F                     | TXVHE-134a-4S | TXVH-3S-IN    |



## Versatility Defined: Universal AC/HP TXV Kit

for R-410A and R-22 Air Conditioning and Heat Pump



- Three outlet connection options:
  - 1/2" ODF Sweat
  - Aeroquip adaptor
  - Chatleff adaptor
- Built-in check valve, use either on heat pump or straight cooling applications
- Balanced port design ideal to handle a capacity range
- External superheat adjustment
- Fewer SKUs for more applications

### UNIVERSAL AC/HP TXV KIT

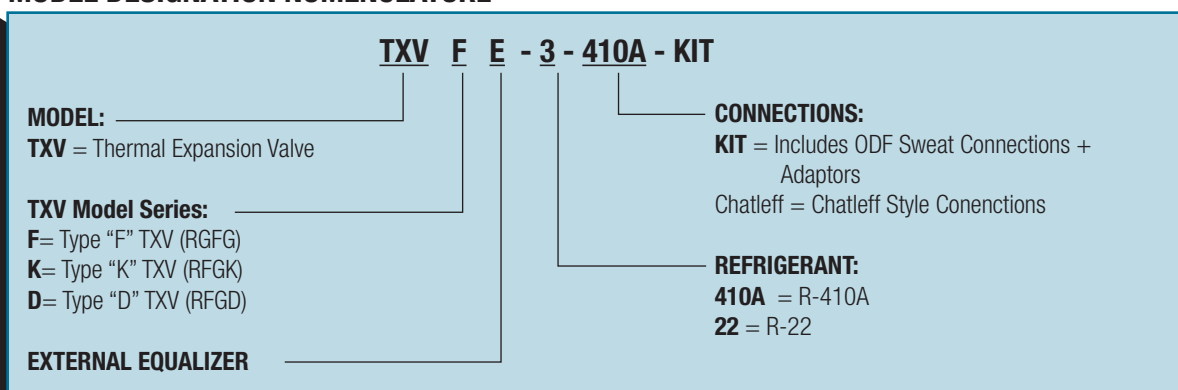
| Aftermarket Model | Capacity Range | Refrigerant |
|-------------------|----------------|-------------|
| TXVFE-2-22-Kit    | 1 to 2 Tons    | R-22        |
| TXVFE-3-22-Kit    | 2.25 to 3 Tons | R-22        |
| TXVFE-4-22-Kit    | 3.25 to 4 Tons | R-22        |
| TXVFE-6-22-Kit    | 4.25 to 6 Tons | R-22        |

| Aftermarket Model | Capacity Range | Refrigerant |
|-------------------|----------------|-------------|
| TXVFE-2-410A-Kit  | 1 to 2 Tons    | R-410A      |
| TXVFE-3-410A-Kit  | 2.25 to 3 Tons | R-410A      |
| TXVFE-4-410A-Kit  | 3.25 to 4 Tons | R-410A      |
| TXVFE-5-410A-Kit  | 4.25 to 5 Tons | R-410A      |

**Note:** Connections: 3/8" ODF inch, 1/2" ODF Out Aeroquip and Chetleff adaptors, Equalizer 1/8" OD x 24" with 1/4"SAE flare nut

The Sanhua Universal AC/HP TXV Kit is designed with world-class engineering and manufacturing technology combined with premium materials for superior performance.

### MODEL DESIGNATION NOMENCLATURE



**REFRIGERANT**  
R-22, R-410A

**LARGE TEMPERATURE SERVICE RANGE**  
-22°F to +275°F

**OPD MAX PS**  
580 psig 650 psig

**MRP**  
670 psig



# Additional Larger AC TXV Models for R-410A

| Aftermarket Model | Connection, ODF Solder |        |           | Capacity Range   | Refrigerant |
|-------------------|------------------------|--------|-----------|------------------|-------------|
|                   | Inlet                  | Outlet | Equalizer |                  |             |
| TXVKE-8-410A      | 5/8"                   | 7/8"   | 1/4"      | 5.5 to 8 tons    | R-410A      |
| TXVDE-11.5-410A   |                        |        |           | 8.5 to 11.5 tons |             |
| TXVDE-15-410A     |                        |        |           | 12 to 15 tons    |             |



- 5/8" x 7/8" x 1/4" ODF sweat connections
- External superheat adjustment
- Larger capacities for air conditioning applications

## Chatleff TXV Connections

- Built-in check valve, use on heat pump or straight cooling applications
- External superheat adjustment
- Drop-in replacement for Chatleff x Chatleff connections

| Aftermarket Model     | Capacity Range | Refrigerant |
|-----------------------|----------------|-------------|
| TXVFE-2-410A-CHATLEFF | 1 to 2 tons    | R-410A      |
| TXVFE-3-410A-CHATLEFF | 2.25 to 3 tons | R-410A      |
| TXVFE-4-410A-CHATLEFF | 3.25 to 4 tons | R-410A      |
| TXVFE-5-410A-CHATLEFF | 4.25 to 5 tons | R-410A      |
| TXVFE-6-410A-CHATLEFF | 5.25 to 6 tons | R-410A      |

**Note:** Connections: Inlet Male Chatleff, Outlet Female Chatleff, Equalizer 1/8" ODX24" with 1/4" Female SAE Flare



**REFRIGERANT**  
R-410A

**LARGE TEMPERATURE SERVICE RANGE**  
-22°F to +275°F  
**OPD MAX** 580 psig **PS** 650 psig

**MRP** 670 psig  
**PS** 650 psig



# 4-Way Reversing Valve

OVER 50 MILLION UNITS PER YEAR

## SANHUA IS THE LEADER IN MANUFACTURING THE WORLD'S MOST RELIABLE REVERSING VALVE

REVERSING VALVE CAPACITY SELECTION TABLE

| Aftermarket Model   | Nominal Cooling Capacity (tons*) |       |        |       |        |       |              |       |
|---------------------|----------------------------------|-------|--------|-------|--------|-------|--------------|-------|
|                     | R-407C                           |       | R-410A |       | R-134a |       | R-404A/R-507 |       |
|                     | Pressure Drop (PSI)              |       |        |       |        |       |              |       |
|                     | 1.5                              | 3.0   | 1.5    | 3.0   | 1.5    | 3.0   | 1.5          | 3.0   |
| SHF-L-4H-23U-AM     | 0.91                             | 1.31  | 1.08   | 1.54  | 0.74   | 1.05  | 0.74         | 1.05  |
| SHF-L-7H-34-AM      | 1.68                             | 2.36  | 1.96   | 2.76  | 1.34   | 1.88  | 1.34         | 1.88  |
| SHF-L-7H-34U-AM     | 1.68                             | 2.36  | 1.96   | 2.76  | 1.34   | 1.88  | 1.34         | 1.88  |
| SHF-L-7H-35-AM      | 1.68                             | 2.36  | 1.96   | 2.76  | 1.34   | 1.88  | 1.34         | 1.88  |
| SHF-L-7H-45-AM      | 1.68                             | 2.36  | 1.96   | 2.76  | 1.34   | 1.88  | 1.34         | 1.88  |
| SHF-L-9H-45D1-L1-AM | 2.10                             | 2.90  | 2.40   | 3.40  | 1.60   | 2.30  | 1.60         | 2.30  |
| SHF-L-11H-46D1-AM   | 2.59                             | 3.67  | 3.04   | 4.29  | 2.08   | 2.93  | 2.08         | 2.93  |
| SHF-14-46-AM        | 3.81                             | 5.37  | 4.46   | 6.31  | 3.04   | 4.29  | 3.04         | 4.29  |
| SHF-14-47-AM        | 3.81                             | 5.37  | 4.46   | 6.31  | 3.04   | 4.29  | 3.04         | 4.29  |
| SHF-14-56D1-AM      | 3.81                             | 5.37  | 4.46   | 6.31  | 3.04   | 4.29  | 3.04         | 4.29  |
| SHF-20A-45-J-AM     | 5.49                             | 7.76  | 6.4    | 9.07  | 4.38   | 6.17  | 4.38         | 6.17  |
| SHF-20A-56D1-AM     | 5.49                             | 7.76  | 6.4    | 9.07  | 4.38   | 6.17  | 4.38         | 6.17  |
| SHF-20A-57D1-AM     | 5.49                             | 7.76  | 6.4    | 9.07  | 4.38   | 6.17  | 4.38         | 6.17  |
| SHF-20D-46-02-AM    | 5.49                             | 7.76  | 6.4    | 9.07  | 4.38   | 6.17  | 4.38         | 6.17  |
| SHF-20D-47-02-AM    | 5.49                             | 7.76  | 6.4    | 9.07  | 4.38   | 6.17  | 4.38         | 6.17  |
| SHF-35B-47-04-AM    | 8.47                             | 12.0  | 9.92   | 14.0  | 8.47   | 9.58  | 6.77         | 9.55  |
| SHF-50-911-D2-AM    | 9.72                             | 13.70 | 14.60  | 20.60 | 7.59   | 10.70 | 8.31         | 11.80 |
| SHF-L-100-1012-01   | 21.30                            | 30.10 | 31.90  | 45.10 | 16.60  | 23.50 | 18.20        | 25.70 |

\*Condensing temperature 130°F; evaporating temperature +45°F; Superheat and Subcooling temperature 9°F



### Reversing Valve Nomenclature

**SHF L 11 H 46 D1 02**

Valve Series

Valve Body and Pilot Materials  
 L = Brass Valve Body and SS Pilot Body  
 Omit = Brass Valve and Pilot Bodies

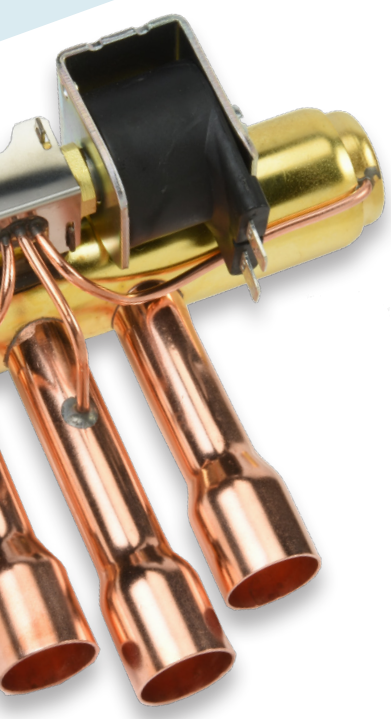
Refrigerant Code  
 "E", "S", and "C" connection size  
 "D" connection size  
 Nominal Capacity in kW




Slide Material and Use

Blank = Standard  
 L1 = Alternate Slide Material  
 01 = PPS/Fixed speed  
 02 = PPS/Variable speed  
 04 = PPS/Variable speed

Valve Style

Blank = D tube straight in center location  
 U = U shape D tube in center location  
 D1 = D tube straight and in line with E  
 D2 = D tube straight and in line with C

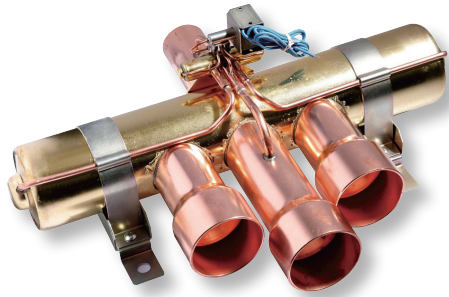


-  Solder connection pilot tube and valve for increased reliability
-  Suitable for capacities from 1-120 tons
-  Compatible with all common HCFC and HFC refrigerants

### REVERSING VALVE COIL CHARACTERISTICS

| Aftermarket Model | Electrical Connection | Rated Voltage | Power Consumption |  |
|-------------------|-----------------------|---------------|-------------------|--|
|                   |                       |               | AC                |  |
|                   |                       |               | 60Hz              |  |
|                   |                       |               | (W)               |  |
| Coil-SHF-FA2      | Spade <sup>1</sup>    | 120 VAC       | 5                 |  |
| Coil-SHF-FA4      | Spade <sup>1</sup>    | 24 VAC        | 5                 |  |
| Coil-SHF-FA5      | Spade <sup>1</sup>    | 220-240 VAC   | 5                 |  |

**Note:** 1. Wire harness for coil with Faston connector SQ-000000-090028



**REFRIGERANT**  
R-22, R-134a, R-290, R-404A,  
R-407C, R-410A, R-507  
**LARGE TEMPERATURE**


**OPD MAX**  
580 psig

**SERVICE RANGE**  
-22°F to +275°F  
**OPD MAX** **PS**  
580 psig 650 psig

**PS**  
650 psig



## Systems Requiring a Pressure Control Function

 Single Pole, Double Throw (SDPT) Switch

 Auto or Manual Reset Models

 Durable Bronze Bellows and 1/4" flare connections

 Installation Bracket Supplied with all Models



### MODEL DESIGNATION NOMENCLATURE

|   |                          |  |
|---|--------------------------|--|
|   | <b>PS 15 AA L - S 01</b> |  |
| <b>MODEL:</b> _____   |                          | <b>CONNECTION UNIT:</b>  |
| <b>PS</b> = Pressure Control  |                          | <b>01</b> = Certified by TÜV, Rheinland acc. to PED 2014 68/EU, EN12263. The high pressure side is designed with double bellows, providing fail-safe function. |
| <b>PRESSURE REGULATING RANGE:</b>   |                          | <b>DESIGN TYPE:</b>  |
| <b>01</b> =LP: 15 inHg 100 psig   |                          | <b>S</b> = Standard  |
| <b>50</b> =HP: 85 465 psig  |                          | <b>C</b> = Custom  |
| <b>60</b> =HP:85 610 psig   |                          | <b>CONNECTION TYPE:</b>  |
| <b>15</b> =DUAL (LP/HP): LP: 15 inHg 100 psig<br>HP: 85 465 psig                    |                          | <b>L</b> = 1/4" SAE Flare (male)   |
| <b>RESET TYPE:</b> _____  |                          | <b>H</b> = 1/4" ODF Sweat  |
| <b>A</b> = Automatic <b>M</b> = Manual <b>C</b> = Convertible                       |                          | <b>M</b> = Capillary Tube with 1/4" SAE Flare Nut  |
| <b>AA</b> = Auto LP/Auto HP <b>AC</b> = Auto LP/Convertible<br>Am/Ma/MM/MC/CA/CM/CC |                          |  |

#### REFRIGERANT

R-22, R-134a, R-404A, R-407C,  
R-507, R-744, R-407A

**LARGE TEMPERATURE  
SERVICE RANGE**  
-40°F to +250°F

#### PS

HP: 500 psig  
LP: 240 psig





PS01/50/15 series pressure controls are used in refrigeration and air conditioning systems to protect the systems from extremely low suction pressure or extremely high discharge pressure.



- MULTIPLE PRESSURE REGULATING RANGES AVAILABLE
- CONVENIENT CAP TUBE/FLARE NUT CONNECTION AVAILABLE

#### MODELS AVAILABLE

| Aftermarket Model | Pressure                                     | Connections                               |
|-------------------|--|---|
| PS01AM-S0-AM      | Low pressure, auto reset                     | Capillary with 1/4" Flare nut             |
| PS01MM-S0-AM      | Low pressure, manual reset                   | Capillary with 1/4" Flare nut             |
| PS50AM-S0-AM      | High pressure/Fan control, auto reset        | Capillary with 1/4" Flare nut             |
| PS50MM-S0-AM      | High pressure, manual reset                  | Capillary with 1/4" Flare nut             |
| PS15AAM-S0-AM     | Dual pressure/Fan control, auto + auto reset | Capillary with 1/4" Flare nut             |
| PS15AMM-S0-AM     | Dual pressure, auto + manual reset           | Capillary with 1/4" Flare nut             |
| PS01AL-C05-AM     | LP, auto reset, 1/4" flare                   | Flare Connection 7/16-20UNF (1/4in & 6mm) |
| PS50AL-C05-AM     | High pressure/Fan control, auto reset        | Flare Connection 7/16-20UNF (1/4in & 6mm) |
| PS50ML-C05-AM     | High pressure, manual reset                  | Flare Connection 7/16-20UNF (1/4in & 6mm) |
| PS15AAL-C05-AM    | Dual pressure/Fan control, auto + auto reset | Flare Connection 7/16-20UNF (1/4in & 6mm) |
| PS15AML-C05-AM    | Dual pressure, auto + manual reset           | Flare Connection 7/16-20UNF (1/4in & 6mm) |

## Stop Refrigerant Flow

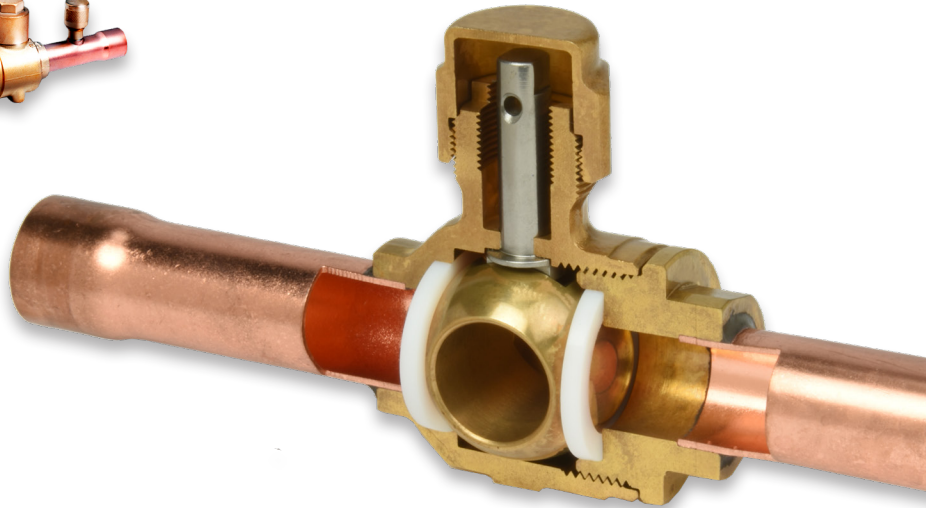
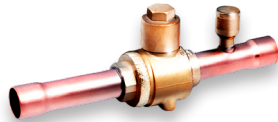
Access the system with minimal pressure drop

- ALL BALL VALVES ARE FULLY PORTED
- EASY TO OPERATE WITH 1/4 TURN TO OPEN & CLOSE

Sanhua Ball Valves easily and efficiently shut off refrigerant flow and allow for the refrigerant to be isolated when servicing. The Ball Valves are compatible with all common HCFC and HFC refrigerants and are UL listed with a maximum operating pressure of 700 psig.

### WITH ACCESS FITTING

| Aftermarket Model   | Connection | Cv    |
|---------------------|------------|-------|
|                     | (inch)     |       |
| With access fitting |            |       |
| BV-3-S-T            | 3/8        | 4.35  |
| BV-4-S-T            | 1/2        | 7.74  |
| BV-5-S-T            | 5/8        | 9.02  |
| BV-6-S-T            | 3/4        | 14.6  |
| BV-7-S-T            | 7/8        | 18.9  |
| BV-9-S-T            | 1-1/8      | 34.9  |
| BV-11-S-T           | 1-3/8      | 54    |
| BV-13-S-T           | 2-5/8      | 77.6  |
| BV-17-S-T           | 2-1/8      | 174.8 |
| BV-21-S-T           | 2-5/8      | 295.7 |
| BV-25-S-T           | 3-1/8      | 362   |



Sanhua ball valves are approved under CRN # 0C23590.5 for all jurisdictions.

### WITHOUT ACCESS FITTING

| Aftermarket Model   | Connection | Cv    |
|---------------------|------------|-------|
|                     | (inch)     |       |
| With access fitting |            |       |
| BV-3-S              | 3/8        | 4.35  |
| BV-4-S              | 1/2        | 7.74  |
| BV-5-S              | 5/8        | 9.02  |
| BV-6-S              | 3/4        | 14.6  |
| BV-7-S              | 7/8        | 18.9  |
| BV-9-S              | 1-1/8      | 34.9  |
| BV-11-S             | 1-3/8      | 54    |
| BV-13-S             | 2-5/8      | 77.6  |
| BV-17-S             | 2-1/8      | 174.8 |
| BV-21-S             | 2-5/8      | 295.7 |

**BV 3 S T**

**Ball Valve Model:** \_\_\_\_\_

BV = Ball Valve

**Connection Diameter Size:** \_\_\_\_\_

**Connection Type:** \_\_\_\_\_

S = ODF Solder  
FM = Female Flare x Male Flare Connection

**System Code:**

Blank = No access Valve  
T = Access Valve  
TC = Access Valve & Insulation

**REFRIGERANT**  
R-22, R-134a, R-290, R-404A,  
R-407C, R-410A, R-507 Bi-  
directional,  
full port

**LARGE TEMPERATURE  
SERVICE RANGE**  
-40°F to +248°F

**PS**  
700 psig



## Isolate the evaporators with Sanhua Ball Valves.

- Saves time & easier on you and your customer when service is needed
- Faster to bring system back to peak performance when there is less guessing about the refrigerant charge
- Isolate on single and multi-evaporator systems
- Male flare x female flare swivel designed to match the connections on line sets and evaporators

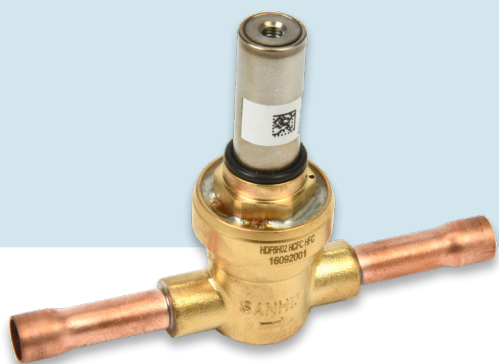


Male Flare x Female Flare Swivel Design

| Aftermarket Model | Connection Type      | SAE Flare $\varnothing$ (inch) |
|-------------------|----------------------|--------------------------------|
| BV-2-FM-TC        | Flare M x Swivel Nut | 1/4                            |
| BV-3-FM-TC        | Flare M x Swivel Nut | 3/8                            |
| BV-4-FM-TC        | Flare M x Swivel Nut | 1/2                            |
| BV-5-FM-TC        | Flare M x Swivel Nut | 5/8                            |

Sanhua ball valves are approved under CRN # OC23590.5 for all jurisdictions.

## Hermetic Body Designed to Eliminate Leak Sources



Wide refrigerant temperature range



High maximum opening pressure differential (MOPD)



Low energy consumption coil

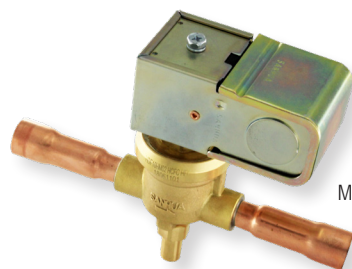


Coils are double sealed water tight and safe

### SELECTION CRITERIA

| Size   | Liquid Capacity (tons) <sup>1)</sup> |                   |                   |                   |                   |                 |                   |
|--|--------------------------------------|-------------------|-------------------|-------------------|-------------------|-----------------|-------------------|
|  | R-404A<br>3 psi P                    | R-448A<br>3 psi P | R-407A<br>3 psi P | R-134a<br>2 psi P | R-450A<br>2 psi P | R-22<br>3 psi P | R-410A<br>3 psi P |
| SoV2   | 0.54                                 | 0.70              | 0.70              | 0.61              | 0.57              | 0.78            | 0.75              |
| SoV3   | 1.16                                 | 1.51              | 1.51              | 1.32              | 1.23              | 1.70            | 1.63              |
| SoV5   | 2.23                                 | 2.91              | 2.91              | 2.54              | 2.37              | 3.27            | 3.14              |
| SoV6   | 3.57                                 | 4.66              | 4.65              | 4.06              | 3.79              | 5.23            | 5.02              |
| Suction Vapor Capacity (tons) @ 1 psi P <sup>2</sup> |                                      |                   |                   |                   |                   |                 |                   |
| Size   | R-404A                               | R-448A            | R-407A            | R-134a            | R-450A            | R-22            | R-410A            |
| SoV2   | 0.06                                 | 0.06              | 0.06              | 0.05              | 0.05              | 0.06            | 0.08              |
| SoV3   | 0.12                                 | 0.13              | 0.13              | 0.11              | 0.10              | 0.14            | 0.17              |
| SoV5   | 0.23                                 | 0.26              | 0.25              | 0.21              | 0.19              | 0.27            | 0.33              |

Sanhua solenoid valves are approved under CRN # 0C22908.2 for all jurisdictions.



Manual Lift Stem

| Size  | Discharge Vapor Capacity (tons) @ 2 psi P <sup>2</sup> |                   |                   |                   |                   |                 |                   |
|-------|--|-------------------|-------------------|-------------------|-------------------|-----------------|-------------------|
|       | R-404A<br>3 psi P                                      | R-448A<br>3 psi P | R-407A<br>3 psi P | R-134a<br>2 psi P | R-450A<br>2 psi P | R-22<br>3 psi P | R-410A<br>3 psi P |
| SoV2  | 0.12   | 0.14              | 0.14              | 0.12              | 0.11              | 0.14            | 0.17              |
| SoV3  | 0.27   | 0.30              | 0.29              | 0.25              | 0.23              | 0.30            | 0.36              |
| SoV5  | 0.51   | 0.57              | 0.57              | 0.49              | 0.45              | 0.57            | 0.69              |
| SoV6  | 0.82   | 0.91              | 0.90              | 0.78              | 0.71              | 0.91            | 1.11              |
| SoV9  | 1.34   | 1.49              | 1.47              | 1.27              | 1.16              | 1.49            | 1.80              |
| SoV10 | 1.96   | 2.17              | 2.15              | 1.85              | 1.70              | 2.17            | 2.64              |
| SoV15 | 2.57   | 2.86              | 2.83              | 2.44              | 2.23              | 2.86            | 3.47              |
| SoV19 | 4.12   | 4.57              | 4.52              | 3.90              | 3.57              | 4.57            | 5.55              |
| SoV25 | 6.17   | 6.86              | 6.78              | 5.86              | 5.35              | 6.86            | 8.33              |
| SoV35 | 11.9   | 13.3              | 13.1              | 11.3              | 10.3              | 13.3            | 16.1              |
| SoV43 | 17.3   | 19.2              | 19.0              | 16.4              | 15.0              | 19.2            | 23.3              |

**Note:** Rated in accordance with ANSI/AHRI Standard 760 (I-P)

- 40°F Evaporator Temperature, 110°F Condenser Temperature, 100°F Liquid Temp.
- 40°F Evaporator Temperature, 65°F Suction Gas Temperature, 110°F Condenser Temp., Isentropic Compression plus 50°F





# Pilot Operated Performance

Direct acting and piston type solenoid valves designed to operate at low pressure differentials on air conditioning and refrigeration systems. In addition to liquid and suction line, they are suitable for discharge application and can tolerate temperatures to 285°F.



## Normally Closed w/Manual Lift Stem

| Size  | Aftermarket Model | Solder Connection ODF (in) |
|-------|-------------------|----------------------------|
| SoV6  | SoV6-3-S-M        | 3/8" ODF                   |
|       | SoV6-4-S-M        | 1/2" ODF                   |
| SoV9  | SoV9-3-S-M        | 3/8" ODF                   |
|       | SoV9-4-S-M        | 1/2" ODF                   |
|       | SoV9-5-S-M        | 5/8" ODF                   |
| SoV10 | SoV10-5-S-M       | 5/8" ODF                   |
| SoV15 | SoV15-5-S-M       | 5/8" ODF                   |
|       | SoV15-7-S-M       | 7/8" ODF                   |
| SoV19 | SoV19-7-S-M       | 7/8" ODF                   |
| SoV25 | SoV25-9-S-M       | 1-1/8" ODF                 |

## Normally Open

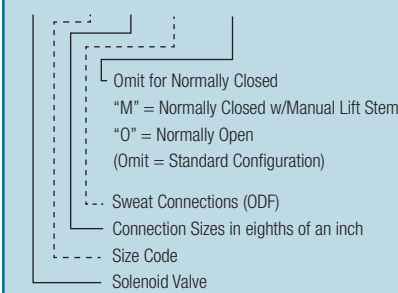
| Size  | Aftermarket Model <sup>1)</sup> | Solder Connection ODF (in) |
|-------|---------------------------------|----------------------------|
| SoV9  | SoV9-3-S-0                      | 3/8" ODF                   |
| SoV10 | SoV10-5-S-0                     | 5/8" ODF                   |
| SoV15 | SoV15-5-S-0                     | 5/8" ODF                   |
| SoV19 | SoV19-7-S-0                     | 7/8" ODF                   |
| SoV25 | SoV25-9-S-0                     | 1-1/8" ODF                 |
| SoV35 | SoV35-11-S-0                    | 1-3/8" ODF                 |
|       | SoV43-13-S-0                    | 1-5/8" ODF                 |
| SoV43 | SoV43-17-S-0                    | 2-1/8" ODF                 |

Sanhua solenoid valves are approved under CRN # OC22908.2 for all jurisdictions.

## Normally Closed

| Size | Aftermarket Model | Solder Connection ODF (in) |
|------|-------------------|----------------------------|
| SoV3 | SoV3-2-S          | 1/4" ODF                   |
|      | SoV3-3-S          | 3/8" ODF                   |
| SoV5 | SoV5-2-S          | 1/4" ODF                   |
| SoV6 | SoV6-3-S          | 3/8" ODF                   |
|      | SoV6-4-S          | 1/2" ODF                   |

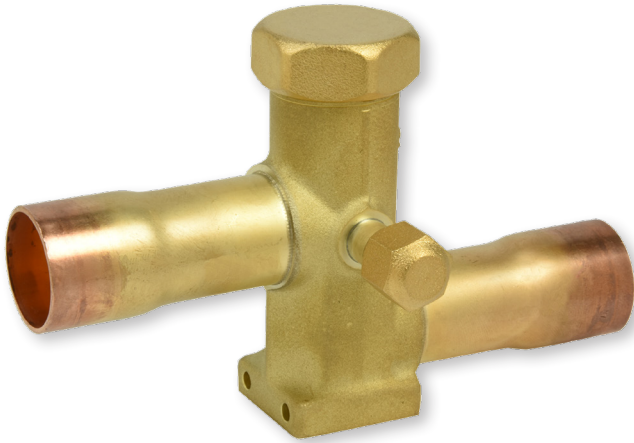
## SoV 6 - 3 - S - M





## Coils with Junction Box

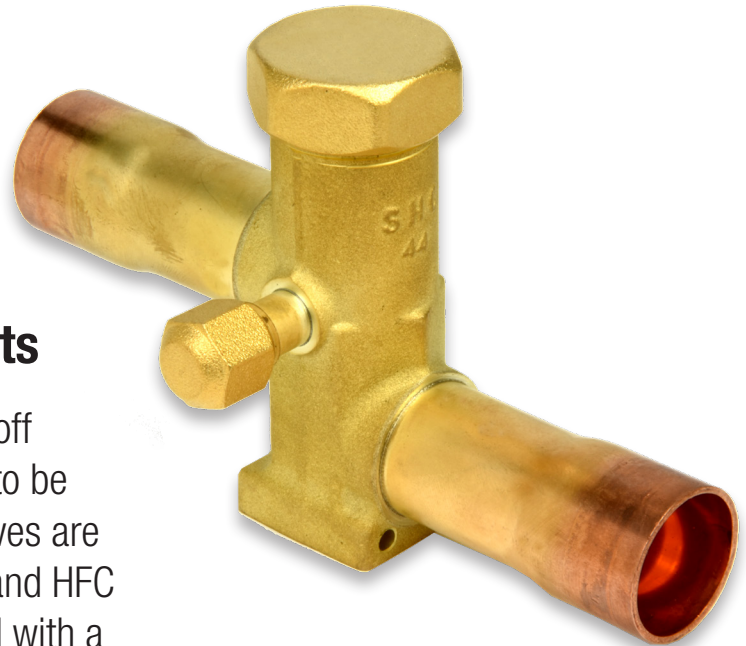
| Operation       | Aftermarket Model <sup>1)</sup> | Rated Voltage    | Supply | Power (W)                | Frequency (Hz) | Voltage Tolerance | Insulation Class | Protection Class (w/plug) | Wiring type |
|-----------------|---------------------------------|------------------|--------|--------------------------|----------------|-------------------|------------------|---------------------------|-------------|
| Normally Closed | Coil-SoV-024                    | 24               | AC     | 9.0 (50Hz)<br>8.0 (60Hz) | 50/60          | -15% to +10%      | F                | IP67                      | Lead Wires  |
|                 | Coil-SoV-120                    | 120              |        |                          |                |                   |                  |                           |             |
|                 | Coil-SoV-208-240                | 208 - 240        |        |                          |                |                   |                  |                           |             |
|                 | Coil-SoV-DUAL                   | 120V - 208 - 240 |        |                          |                |                   |                  |                           |             |

# The Main Connection



-  Ability to handle low pressure drops and environmental conditions
-  Compatible with all common HCFC and HFC refrigerants
-  100% Factory Leak Tested

## Your Trusted Access Point



## Engineered to withstand the elements

Sanhua Service Valves easily and efficiently shut off refrigerant flow and allow for the refrigerant to be isolated when servicing. The Service Valves are compatible with all common HCFC and HFC refrigerants and are UL certified with a maximum operating pressure of 650 psig.

### PRODUCT INFORMATION

| Aftermarket Model | Charge Port SAE Flare (inch) |
|-------------------|------------------------------|
| Service-Bar-3-S-T | 3/8                          |
| Service-Bar-4-S-T | 1/2                          |
| Service-Bar-5-S-T | 5/8                          |
| Service-Bar-6-S-T | 3/4                          |
| Service-Bar-7-S-T | 7/8                          |

**Machined with high quality C360  
allow brass for high tensile strength**

**REFRIGERANT**  
R-134a, R-404A, R-407C,  
R-410A, R-507

**LARGE TEMPERATURE  
SERVICE RANGE**  
-22°F to +275°F

**PS**  
650 psig



## Replaceable Core Filter-Drier



### cross-reference

As the largest producer of Service Valves, Reversing Valves, Electronic Expansion Valves and Microchannel (HVACR) in the world, Sanhua has earned the trust of major HVACR brands globally. Quality is the foundation for every product manufactured resulting in world class parts per million numbers. When you want the best, you want Sanhua.

| Connections<br>ODF (in.) | Sanhua        | Danfoss       | Emerson*    | Mueller | Sporlan*  |
|--------------------------|---------------|---------------|-------------|---------|-----------|
|                          |               | Steel<br>Conn |             |         |           |
| 5/8"                     | FDSH-48-5-S   | DCR 0485      | STAS-485T   | A 18583 | C-485-G   |
| 7/8"                     | FDSH-48-7-S   | DCR 0487      | STAS-487T   | A 18584 | C-487-G   |
|                          | FDSH-96-7-S   | DCR 0967      | STAS-967T   | A 18589 | C-967-G   |
| 1-1/8"                   | FDSH-48-9-S   | DCR 0489      | STAS-489T   | A 18585 | C-489-G   |
|                          | FDSH-96-9-S   | DCR 0969      | STAS-969T   | A 18590 | C-969-G   |
|                          | FDSH-144-9-S  | DCR 1449      | STAS-1449T  | A 18604 | C-1449-G  |
| 1-3/8"                   | FDSH-48-11-S  | DCR<br>04811  | STAS-4811T  | A 18586 | C-4811-G  |
|                          | FDSH-96-11-S  | DCR<br>09611  | STAS-9611T  | A 18591 | C-9611-G  |
|                          | FDSH-144-11-S | DCR<br>14411  | STAS-14411T | A 18605 | C-14411-G |
|                          | FDSH-192-11-S | DCR<br>19211  | STAS-19211T | A 18608 | C-19211-G |
| 1-5/8"                   | FDSH-96-13-S  | DCR<br>09613  | STAS-9613T  | A 18592 | C-9613-G  |
|                          | FDSH-192-13-S | DCR<br>19213  | STAS-19213T | A 18609 | C-19213-G |
| 2-1/8"                   | FDSH-192-17-S | DCR19217      | STAS-19217T | A 18610 | C-19217-G |

## Replaceable Cores

\* The Sanhua core is a general-purpose core and can be used for all applications. The competitor models with the "HH" indicate a charcoal material is blended in the molded core. The charcoal material was designed into cores many years ago to remove wax contamination, common in systems with R-12 and R-502. Wax is no longer a common contaminant found in systems. The addition of charcoal consumes core area therefore reducing the amount of molecular sieve and activated alumina, which are more important for the reduction of contaminants found in systems today.

|  | Sanhua       | Danfoss        | Emerson*                | Mueller | Sporlan*              |
|--|--------------|----------------|-------------------------|---------|-----------------------|
|  | FD-Core-48   | 48-DA<br>48-DC | D-48<br>H-48<br>W-48-HH | P 36818 | RC-4864<br>RC-4864-HH |
|  | FD-Core-48HI | 48-DM          | HX-48<br>UK-48          | P 36819 | RCW-48                |

# Sealed Model Filter-Drier cross-reference



| Connection<br>(in.) | Sanhua     | Danfoss       |                  | Emerson   |           | Emerson    |                  |               | Parker            | Sporlan   |               |            |
|---------------------|------------|---------------|------------------|-----------|-----------|------------|------------------|---------------|-------------------|-----------|---------------|------------|
|                     | Core Type* | Standard Core | Hi Moisture Core | Bead Type | Core Type | Loose Bead | Hi Moisture Core | Burnout Core* | Bead or Core Type | Core Type | Burnout Core* |            |
| 1/4"                | SAE Flare  | FD-032        | DCL 032          | DML 032   | EK 032    | ADK 032    |                  |               |                   | 032       | C-032         |            |
|                     |            | FD-052        | DCL 052          | DML 052   | EK 052    | ADK 052    |                  |               |                   | 052       | C-052         | C-052-HH   |
|                     |            | FD-082        | DCL 082          | DML 082   | EK 082    | ADK 082    |                  |               | BOK 082-HH        | 082       | C-082         | C-082-HH   |
|                     |            | FD-162        | DCL 162          | DML 162   | EK 162    | ADK 162    |                  |               |                   | 162       | C-162         |            |
|                     | ODF Solder | FD-032-S      | DCL 032S         | DML 032S  | EK 032S   | ADK 032S   | EKZ 032S         |               |                   | 032S      | C-032-S       |            |
|                     |            | FD-052-S      | DCL 052S         | DML 052S  | EK 052S   | ADK 052S   | EKZ 052S         |               |                   | 052S      | C-052-S       | C-052-S-HH |
| FD-082-S            |            | DCL 082S      | DML 082S         | EK 082S   | ADK 082S  | EKZ 082S   |                  | BOK 082S-HH   | 082S              | C-082-S   |               |            |
| 3/8"                | SAE Flare  | FD-053        | DCL 053          | DML 053   | EK 053    | ADK 053    |                  |               |                   | 053       | C-053         |            |
|                     |            | FD-083        | DCL 083          | DML 083   | EK 083    | ADK 083    |                  |               | BOK 083-HH        | 083       | C-083         | C-083-HH   |
|                     |            | FD-163        | DCL 163          | DML 163   | EK 163    | ADK 163    |                  |               | BOK 163-HH        | 163       | C-163         | C-163-HH   |
|                     |            | FD-303        | DCL 303          | DML 303   | EK 303    | ADK 303    |                  |               | BOK 303-HH        | 303       | C-303         | C-303-HH   |
|                     | ODF Solder | FD-033-S      | DCL 033S         | DML 033S  | EK 033S   | ADK 033S   | EKZ 033S         |               |                   | 033S      | C-033-S       |            |
|                     |            | FD-053-S      | DCL 053S         | DML 053S  | EK 053S   | ADK 053S   | EKZ 053S         |               |                   | 053S      | C-053-S       |            |
|                     |            | FD-083-S      | DCL 083S         | DML 083S  | EK 083S   | ADK 083S   | EKZ 083S         |               | BOK 083S-HH       | 083S      | C-083-S       | C-083-S-HH |
|                     |            | FD-163-S      | DCL 163S         | DML 163S  | EK 163S   | ADK 163S   | EKZ 163S         |               | BOK 163S-HH       | 163S(-XF) | C-163-S       | C-163-S-HH |
|                     |            | FD-303-S      | DCL 303S         | DML 303S  | EK 303S   | ADK 303S   |                  |               | BOK 303S-HH       | 163S      | C-303-S       |            |

\* The Sanhua core is a general-purpose core and can be used for all applications. The competitor models with the "HH" indicate a charcoal material is blended in the molded core. The charcoal material was designed into cores many years ago to remove wax contamination, common in systems with R-12 and R-502. Wax is no longer a common contaminant found in systems. The addition of charcoal consumes core area therefore reducing the amount of molecular sieve and activated alumina, which are more important for the reduction of contaminants found in systems today.

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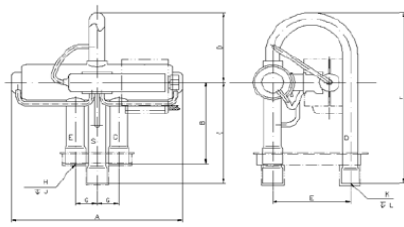
# Sealed Model Filter-Drier | Continued

| Connection (in.)     |            | Sanhua     | Danfoss       |                  | Emerson   |           | Emerson    |                  |               | Parker            | Sporlan   |               |
|----------------------|------------|------------|---------------|------------------|-----------|-----------|------------|------------------|---------------|-------------------|-----------|---------------|
|                      |            | Core Type* | Standard Core | Hi Moisture Core | Bead Type | Core Type | Loose Bead | Hi Moisture Core | Burnout Core* | Bead or Core Type | Core Type | Burnout Core* |
| 1/2"                 | SAE Flare  | FD-164     | DCL 164       | DML 164          | EK 164    | ADK 164   |            |                  | BOK 164-HH    | 164               | C-164     | C-164-HH      |
|                      |            | FD-304     | DCL 304       | DML 304          | EK 304    | ADK 304   |            |                  | BOK 304-HH    | 304               | C-304     | C-304-HH      |
|                      |            | FD-414     | DCL 414       | DML 414          | EK 414    | ADK 414   |            |                  | BOK 414-HH    |                   | C-414     |               |
|                      | ODF Solder | FD-084-S   | DCL 084S      | DML 084S         | EK 084S   | ADK 084S  | EKZ 084S   |                  |               | 084S              | C-084-S   |               |
|                      |            | FD-164-S   | DCL 164S      | DML 164S         | EK 164S   | ADK 164S  | EKZ 164S   |                  | BOK 164S-HH   | 164S              | C-164-S   | C-164-S-HH    |
|                      |            | FD-304-S   | DCL 304S      | DML 304S         | EK 304S   | ADK 304S  |            |                  | BOK 304S-HH   | 304S              | C-304-S   | C-304-S-HH    |
|                      |            | FD-414-S   | DCL 414S      | DML 414S         | EK 414S   | ADK 414S  |            |                  | BOK 414S-HH   |                   | C-414-S   |               |
|                      | 5/8"       | SAE Flare  | FD-165        | DCL 165          | DML 165   | EK 165    | ADK 165    |                  |               | BOK 165-HH        | 165       | C-165         |
| FD-305               |            |            | DCL 305       | DML 305          | EK 305    | ADK 305   |            |                  | BOK 305-HH    | 305               | C-305     | C-305-HH      |
| FD-415               |            |            | DCL 415       | DML 415          | EK 415    | ADK 415   |            |                  | BOK 415-HH    | 415               | C-415     | C-415-HH      |
| ODF Solder           |            | FD-165-S   | DCL 165S      | DML 165S         | EK 165S   | ADK 165S  | EKZ 165S   |                  | BOK 165S-HH   | 165S              | C-165-S   | C-165-S-HH    |
|                      |            | FD-305-S   | DCL 305S      | DML 305S         | EK 305S   | ADK 305S  | EKZ 305S   |                  | BOK 305S-HH   | 305S              | C-305-S   | C-305-S-HH    |
|                      |            | FD-415-S   | DCL 415S      | DML 415S         | EK 415S   | ADK 415S  |            |                  | BOK 415S-HH   | 415S              | C-415-S   |               |
| 7/8"                 | ODF Solder | FD-417-S   | DCL 417S      | DML 417S         | EK 417S   | ADK 417S  | EKZ 417S   |                  | BOK 417S-HH   | 417S              | C-417-S   | C-417-S-HH    |
|                      |            | FD-757-S   | DCL 757S      | DML 757S         | EK 757S   | ADK 757S  |            |                  |               | 757S              | C-607-S   |               |
| 1-1/8"               | ODF Solder | FD-759-S   | DCL 759S      | DML 759S         | EK 759S   | ADK 759S  |            |                  |               | 759S              | C-609-S   |               |
| Bidirectional Models |            |            |               |                  |           |           |            |                  |               |                   |           |               |
| 3/8"                 | SAE Flare  | FDBI-083   | DCB 083       | DMB 083          |           | BFK 083   |            | BFKZ 083         |               | BF083             | HPC-083   |               |
|                      |            | FDBI-163   | DCB 163       | DMB 163          |           | BFK 163   |            | BFKZ 163         |               | BF163             |           | HPC-163-HH    |
|                      | ODF Solder | FDBI-083-S | DCB 083S      | DMB 083S         |           | BFK 083S  |            | BFKZ 083S        |               | BF083S            | HPC-083-S |               |
|                      |            | FDBI-163-S | DCB 163S      | DMB 163S         |           | BFK 163S  |            | BFKZ 163S        |               | BF163S            |           | HPC-163-S-HH  |
|                      |            | FDBI-303-S |               |                  |           | BFK 303S  |            | BFKZ 303S        |               |                   |           | HPC-303-S-HH  |
|                      |            |            |               |                  |           |           |            |                  |               |                   |           |               |

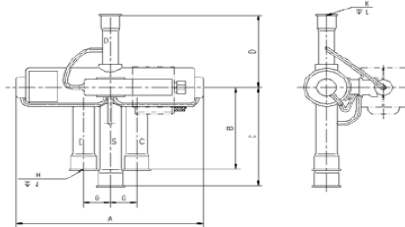
# Sealed Model Filter-Drier | Continued

| Connection<br>(in.)         | Sanhua     | Danfoss       |                  | Emerson   |           | Emerson    |                  |               | Parker            | Sporlan   |               |              |
|-----------------------------|------------|---------------|------------------|-----------|-----------|------------|------------------|---------------|-------------------|-----------|---------------|--------------|
|                             | Core Type* | Standard Core | Hi Moisture Core | Bead Type | Core Type | Loose Bead | Hi Moisture Core | Burnout Core* | Bead or Core Type | Core Type | Burnout Core* |              |
| <b>Bidirectional Models</b> |            |               |                  |           |           |            |                  |               |                   |           |               |              |
| 1/2"                        | SAE Flare  | FDBI-084      | DCB 084          | DMB 084   |           | BFK 084    |                  | BFKZ 084      |                   | BF084     |               |              |
|                             |            | FDBI-164      | DCB 164          | DMB 164   |           | BFK 164    |                  | BFKZ 164      |                   | BF164     |               | HPC-164-HH   |
|                             |            | FDBI-304      | DCB 304          | DMB 304   |           | BFK 304    |                  |               |                   |           |               | HPC-304-HH   |
|                             | ODF Solder | FDBI-084-S    | DCB 084S         | DMB 084S  |           | BFK 084S   |                  | BFKZ 084S     |                   | BF084S    |               |              |
|                             |            | FDBI-164-S    | DCB 164S         | DMB 164S  |           | BFK 164S   |                  | BFKZ 164S     |                   | BF164S    |               | HPC-164-S-HH |
|                             |            | FDBI-304-S    | DCB 304S         | DMB 304S  |           | BFK 304S   |                  | BFKZ 304S     |                   |           |               | HPC-304-S-HH |
| 5/8"                        | SAE Flare  | FDBI-165      | DCB 165          | DMB 165   |           | BFK 165    |                  | BFKZ 165      |                   | BF165     |               | HPC-165-HH   |
|                             |            | FDBI-165-S    | DCB 165S         | DMB 165S  |           | BFK 165S   |                  | BFKZ 165S     |                   | BF165S    |               | HPC-165-S-HH |
|                             | ODF Solder | FDBI-305-S    | DCB 305S         | DMB 305S  |           | BFK 305S   |                  | BFKZ 305S     |                   |           |               | HPC-305-S-HH |
| 7/8"                        | ODF Solder | FDBI-307-S    | DCB 307S         | DMB 307S  |           | BFK 307S   |                  | BFKZ 307S     |                   |           |               | HPC-307-S-HH |

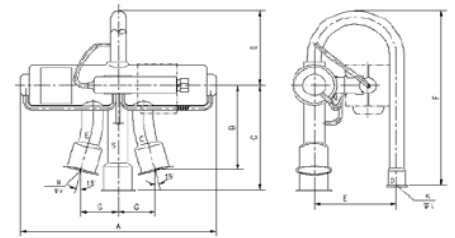
# Reversing Valve | Ranco to Sanhua Cross-Reference



Sketch 1

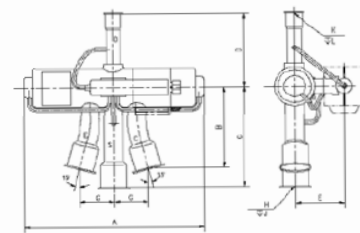


Sketch 2

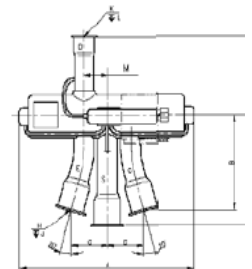


Sketch 3

| Brand and Model |                   | Sketch (1 - 5) | Dimensions (in) |      |      |      |      |      |      |      |      |      |      |      |  |
|-----------------|-------------------|----------------|-----------------|------|------|------|------|------|------|------|------|------|------|------|--|
|                 |                   |                | A               | B    | C    | D    | E    | F    | G    | H    | J    | K    | L    | M    |  |
| RANCO           | V0-406050-1xx     | 1              | 4.06            | 1.97 | 2.44 | 1.59 | 1.65 | -    | 0.47 | 0.38 | 0.38 | 0.32 | 0.33 | -    |  |
| SAN-HUA         | SHF-L-4H-23U-L1   |                | 3.72            | 1.97 | 2.44 | 1.69 | 1.69 | 4.13 | 0.47 | 0.38 | 0.37 | 0.32 | 0.33 | -    |  |
| RANCO           | V1-406060-2xx     | 1              | 5.04            | 2.32 | 2.81 | 2.05 | 2.07 | -    | 0.63 | 0.38 | 0.38 | 0.38 | 0.38 | -    |  |
| SAN-HUA         | SHF-L-4H-23U-L1   |                | 3.72            | 1.97 | 2.44 | 1.69 | 1.69 | 4.13 | 0.47 | 0.38 | 0.37 | 0.32 | 0.33 | -    |  |
| RANCO           | V2-408060-1xx     | 2              | 5.04            | 2.32 | 2.81 | 1.94 | -    | -    | 0.63 | 0.51 | 0.38 | 0.38 | 0.38 | -    |  |
| SAN-HUA         | SHF-L-7H-34-L1    |                | 4.45            | 2.32 | 2.80 | 2.05 | -    | -    | 0.63 | 0.50 | 0.37 | 0.38 | 0.39 | -    |  |
| RANCO           | V2-408060-2xx     | 1              | 5.04            | 2.32 | 2.81 | 2.05 | 2.07 | -    | 0.63 | 0.51 | 0.38 | 0.38 | 0.38 | -    |  |
| SAN-HUA         | SHF-L-7H-34U-L1   |                | 4.45            | 2.32 | 2.80 | 2.01 | 2.05 | 4.69 | 0.63 | 0.50 | 0.37 | 0.38 | 0.37 | -    |  |
| RANCO           | V2-410060-3xx     | 4              | 5.04            | 2.26 | 2.81 | 1.94 | 1.46 | -    | 0.93 | 0.63 | 0.63 | 0.38 | 0.38 | -    |  |
| SAN-HUA         | SHF-L-7H-35-L1    |                | 4.45            | 2.24 | 2.83 | 2.05 | 1.34 | -    | 0.93 | 0.63 | 0.63 | 0.38 | 0.39 | -    |  |
| RANCO           | V2-410060-4xx     | 3              | 5.04            | 2.26 | 2.81 | 2.05 | 2.07 | -    | 0.93 | 0.63 | 0.63 | 0.38 | 0.38 | -    |  |
| SAN-HUA         | SHF-L-7H-35U-L1   |                | 4.45            | 2.24 | 2.83 | 2.01 | 2.65 | 4.69 | 0.93 | 0.63 | 0.63 | 0.38 | 0.37 | -    |  |
| RANCO           | V2-410080-3xx     | 4              | 5.04            | 2.26 | 2.81 | 1.94 | 1.46 | -    | 0.93 | 0.63 | 0.63 | 0.51 | 0.38 | -    |  |
| SAN-HUA         | SHF-L-7H-45-L1    |                | 4.45            | 2.24 | 2.83 | 2.05 | 1.34 | -    | 0.93 | 0.63 | 0.63 | 0.50 | 0.39 | -    |  |
| RANCO           | V3-410080-7xx     | 5              | 5.04            | 2.38 | 2.82 | 1.94 | 1.46 | -    | 0.95 | 0.63 | 0.62 | 0.51 | 0.38 | 0.63 |  |
| SAN-HUA         | SHF-L-11H-45D1-01 |                | 4.61            | 2.44 | 2.83 | 2.05 | 1.34 | -    | 0.98 | 0.63 | 0.67 | 0.50 | 0.39 | 0.63 |  |
| RANCO           | V3-412080-8xx     | 5              | 5.04            | 3.25 | 3.45 | 1.94 | 1.46 | -    | 1.28 | 0.76 | 0.75 | 0.51 | 0.38 | 0.63 |  |
| SAN-HUA         | SHF-L-11H-46D1-01 |                | 4.61            | 3.23 | 3.43 | 2.05 | 1.34 | -    | 1.28 | 0.76 | 0.75 | 0.50 | 0.39 | 0.63 |  |

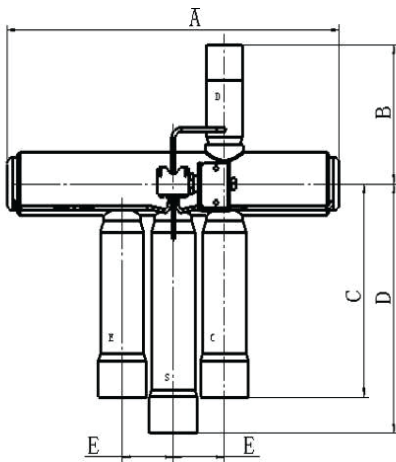
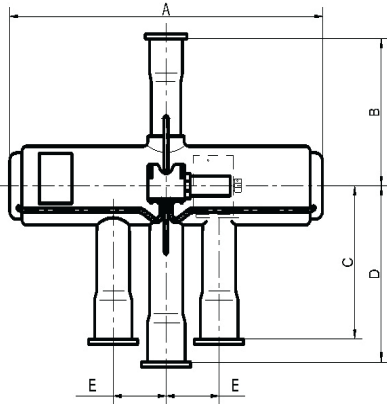
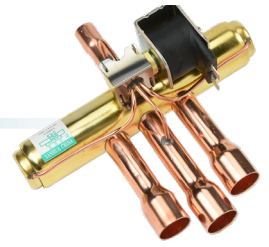


Sketch 4



Sketch 5

# Reversing Valve | Ranco to Sanhua Cross-Reference



| Brand and Model |                | Sketch<br>(1 or 2) | Dimensions (in) |      |      |      |      |
|-----------------|----------------|--------------------|-----------------|------|------|------|------|
|                 |                |                    | A               | B    | C    | D    | E    |
| RANCO           | V6-412080-1xx  | 1                  | 7.83            | 2.63 | 3.25 | 3.75 | 1.12 |
| SANHUA          | SHF-20D-46     |                    | 7.23            | 2.64 | 3.27 | 3.74 | 1.13 |
| RANCO           | V6-414080-1xx  | 1                  | 7.83            | 2.63 | 3.25 | 3.75 | 1.12 |
| SANHUA          | SHF-20D-47     |                    | 7.23            | 2.64 | 3.27 | 3.74 | 1.13 |
| RANCO           | V6-414120-1xx  | 1                  | 7.83            | 2.63 | 3.25 | 3.75 | 1.12 |
| SANHUA          | SHF-20D-67     |                    | 7.23            | 2.64 | 3.27 | 3.74 | 1.13 |
| RANCO           | V6-4140K1-1TC  | 1                  | 7.83            | 2.63 | 3.25 | 3.75 | 1.12 |
| SANHUA          | SHF-20D-57     |                    | 7.23            | 2.64 | 3.27 | 3.74 | 1.13 |
| RANCO           | V10-414080-1xx | 1                  | 8.30            | 3.22 | 3.38 | 3.88 | 1.32 |
| SANHUA          | SHF-35B-47     |                    | 8.35            | 3.23 | 3.43 | 3.94 | 1.30 |
| RANCO           | V10-414101-2xx | 1                  | 8.30            | 3.22 | 3.38 | 3.88 | 1.32 |
| SANHUA          | SHF-35B-57     |                    | 8.35            | 3.23 | 3.43 | 3.94 | 1.30 |
| RANCO           | V10-414120-1xx | 1                  | 8.30            | 3.22 | 3.38 | 3.88 | 1.32 |
| SANHUA          | SHF-35B-67     |                    | 8.35            | 3.23 | 3.43 | 3.94 | 1.30 |
| RANCO           | V10-414140-4xx | 1                  | 8.30            | 3.22 | 3.38 | 3.88 | 1.32 |
| SANHUA          | SHF-35B-77     |                    | 8.35            | 3.23 | 3.43 | 3.94 | 1.30 |
| RANCO           | V10-418101-1xx | 1                  | 8.30            | 3.22 | 3.38 | 3.88 | 1.32 |
| SANHUA          | SHF-35B-59     |                    | 8.35            | 3.23 | 3.43 | 3.94 | 1.30 |
| RANCO           | V10-418101-2xx | 1                  | 8.30            | 3.22 | 3.38 | 3.88 | 1.32 |
| SANHUA          | SHF-35B-59     |                    | 8.35            | 3.23 | 3.43 | 3.94 | 1.30 |
| RANCO           | V10-418140-1xx | 1                  | 8.30            | 3.22 | 3.38 | 3.88 | 1.32 |
| SANHUA          | SHF-35B-79     |                    | 8.35            | 3.23 | 3.43 | 3.94 | 1.30 |
| RANCO           | V10-418140-1xx | 1                  | 8.30            | 3.22 | 3.38 | 3.88 | 1.32 |
| SANHUA          | SHF-35B-79     |                    | 8.35            | 3.23 | 3.43 | 3.94 | 1.30 |
| RANCO           | V12-4220T0-2xx | 2                  | 10.6            | 3.81 | 5.90 | 6.90 | 1.63 |
| SANHUA          | SHF-50-911D2   |                    | 10.6            | 3.82 | 5.87 | 6.85 | 1.63 |



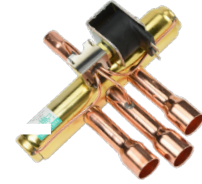
# Reversing Valve | Cross-Reference



| Connections<br>ODF (in.) |           | Sanhua            | Sanhua OEM   | Sanhua/Ranco                                    | Danfoss                | DunAn                    | Wilspec                  |
|--------------------------|-----------|-------------------|--|---|------------------------|--------------------------|--------------------------|
| Dis-charge               | E - S - C |                   |  |   | Saginomiya             |                          |                          |
| 1/4"                     | 3/8"      | SHF-L-4H-23       | SHF-L-4H-23  | V1-408060-1xx<br>V1-408061-100                  | STF-0101G<br>STF-0104G |                          |                          |
|                          |           | SHF-L-4H-23U      | SHF-4H-23U-xx<br>SHF-L-4H-23U-xx                   | V0-406050-1xx<br>V0-406060-2xx<br>V1-406063-200 |                        |                          |                          |
| 3/8"                     | 1/2"      | SHF-L-7H-34       | SHF-7H-34-xx<br>SHF-L-7H-34-xx                     | V2-408060-1xx<br>V2-408060-2xx<br>V2-408061-1xx |                        |                          | RV101A34AA               |
|                          |           | SHF-L-7H-34U      | SHF-7H-34U-xx<br>SHF-L-7H-34U                      | V2-406060-200                                   |                        |                          |                          |
| 3/8"                     | 5/8"      | SHF-L-7H-35       | SHF-7H-35-xx<br>SHF-L-7H-35-xx                     | V2-410060-3xx<br>V2-410061-3xx                  |                        | DSF-9R-00                |                          |
|                          |           | SHF-L-7H-35U      | SHF-L-7H-35U                                       | V2-410060-4xx                                   |                        |                          |                          |
|                          |           | SHF-L-9H-35       | SHF-9H-35  |   |                        |                          |                          |
|                          |           | SHF-L-9H-35U      | SHF-L-9H-35U                                       |   |                        |                          |                          |
| 1/2"                     | 1/2"      | SHF-L-11H-44      | SHF-11H-44-xx                                      |   |                        |                          | RV102A44AZ               |
| 1/2"                     | 5/8"      | SHF-7H-45         | SHF-7H-45-xx                                       |   |                        |                          |                          |
|                          |           | SHF-7H-45D1       | SHF-7H-45D1-xx                                     |   |                        |                          |                          |
|                          |           | SHF-L-9H-45D1-L1  | SHF-9H-45D1<br>SHF-L-9H-45D1-xx                    |   |                        |                          |                          |
|                          |           | SHF-L-11H-45D1-L1 | SHF-L-11H-45D1-xx                                  | V3-410080-7xx<br>V3-410081-7xx                  | STF-0214G<br>STF-0306G | DSF-11B-00               |                          |
| 1/2"                     | 3/4"      | SHF-L-11H-46D1    | SHF-11H-46D1<br>SHF-L-11H-46-xx                    | V3-412080-8xx<br>V3-412081-8xx<br>V3-41208A-1xx |                        | DSF-11M-00               | RV103A46EA               |
|                          |           | SHF-14-46         | SHF-14-46  |   |                        |                          |                          |
|                          |           | SHF-20D-46-02     | SHF-20A-46-xx<br>SHF-20D-46-02-xx                  | V6-412080-1xx<br>V6-412081-1xx<br>V6-41208A-1xx | STF-0401G<br>STF-0404G | DSF-20-00                | RV104B46AZ               |
| 1/2"                     | 7/8"      | SHF-14-47         | SHF-14-47  |   |                        |                          |                          |
|                          |           | SHF-20D-47-02     | SHF-20A-47-xx<br>SHF-20D-47-02-xx<br>SHF-20D-47-04 | V6-414080-1xx<br>V6-414081-1xx<br>V6-41408A-1xx | STF-0409G<br>STF-0420G | DSF-20K-00<br>DSF-20Q-00 | RV104B47AZ<br>RV106A47AA |
|                          |           | SHF-35B-47-04     | SHF-35A-47-xx<br>SHF-35B-47-04-xx                  | V10-414080-1xx<br>V10-414081-1xx                |                        | DSF-34S-00               |                          |

Note: "xx" indicates a 1 or 2 digit code may follow the model number.  
Continued on next page

# Reversing Valve | Continued



| Connections<br>ODF (in.) |           | Sanhua            | Sanhua OEM                       | Sanhua/Ranco   | Danfoss        | DunAn          | Wilspec        |
|--------------------------|-----------|-------------------|----------------------------------|--|----------------|----------------|----------------|
| Dis-charge               | E - S - C |                   |                                  |  | Saginomiya     |                |                |
| 1/2"                     | 1-1/8"    | SHF-35B-49-04     | SHF-35A-49                       |  |                |                |                |
| 5/8"                     | 3/4"      | SHF-20D-56        |                                  | V6-4120K0-2xx  |                |                |                |
| 5/8"                     | 7/8"      | SHF-14-57         | SHF-14-57                        |  |                |                |                |
|                          |           | SHF-20A-57        | SHF-20A-57                       |  |                |                |                |
|                          |           | SHF-20D-57        | SHF-20D-57                       | V6-4140K1-1xx<br>V6-414100-1xx<br>V6-414101-1xx                      | STF-0413G      |                |                |
|                          |           | SHF-35B-57-04     | SHF-35A-57                       | V10-414100-1xx<br>V10-414101-2xx<br>V10-41410A-1xx                   |                |                |                |
| 5/8"                     | 1-1/8"    | SHF-35B-59-04     | SHF-35A-59-xx                    | V10-418100-1xx<br>V10-418101-2xx                                     |                |                |                |
| 3/4"                     | 1-1/8"    | SHF-35B-69-04     | SHF-35A-69                       | V10-418120-1xx<br>V10-418121-1xx                                     |                |                | RV110A69AA     |
| 7/8"                     | 7/8"      | SHF-35B-77        |                                  | V10-414140-4xx<br>V10-414141-5xx                                     |                |                |                |
| 7/8"                     | 1-1/8"    | SHF-35B-79-04     | SHF-35A-79-xx<br>SHF-35B-79-04   | V10-418140-1xx<br>V10-418140-2xx<br>V10-418141-1xx<br>V10-418141-2xx | STF-0715G      |                |                |
| 7/8"                     | 1-3/8"    | SHF-50-711        | SHF-50-711                       |  |                |                |                |
| 1-1/8"                   | 1-3/8"    | SHF-50-911D2      | SHF-50-911D2<br>SHF-50S-911D2-01 | V12-4220T0-2xx<br>V12-4220T1-2xx                                     | STF-2017G      |                | RV112A911JZ-11 |
| 1-1/8"                   | 1-5/8"    | SHF-L-70-913-03   | SHF-L-70-913-03                  |  |                |                |                |
| 1-3/8"                   | 1-5/8"    | SHF-L-100-1113-01 | N30C18G                          |  |                |                |                |
|                          |           | SHF-L-100-1113-03 |                                  |  |                |                |                |
| 1-1/2"                   | 2-1/8"    | SHF-L-175-1217    | N50C13G                          |  |                |                |                |
| 1-5/8"                   | 2-5/8"    | SHF-L-350-1721    |                                  | VH32087a   |                |                |                |
| Coil Voltage             |           | Sanhua            | Sanhua OEM                       | Sanhua/Ranco   |                |                |                |
| 24/50-60 volt AC         |           | Coil- SHF-FA4     | SHF-4-10FA4                      | SHF-4-10L5   | LDK-11xxxx-xxx | LDL-11xxxx-xxx |                |
| 120/50-60 volt AC        |           | Coil- SHF-FA2     | SHF-4-10FA2                      | SHF-4-10L4   | LDK-31xxxx-xxx | LDL-31xxxx-xxx |                |
| 208-240/50-60 volt AC    |           | Coil- SHF-FA5     | SHF-4-10FA5                      | SHF-4-10L3   | LDK-41xxxx-xxx | LDL-41xxxx-xxx |                |

# TXV Kits | R-410A and R-22 AC/HP



## Universal AC/HP TXV Kit

for R-410A and R-22 Air Conditioning and Heat Pump

- Three outlet connection options:  
1/2" ODF Sweat  
Aeroquip adaptor  
Chatleff adaptor
- Balanced port design ideal to handle a capacity range
- External superheat adjustment
- Fewer SKUs for more applications
- Built-in check valve, use either on heat pump or straight cooling applications

The Sanhua Universal AC/HP TXV Kit is designed with world-class engineering and manufacturing technology combined with premium materials for superior performance.

### TECHNICAL DATA

| Part Number      | Capacity Range | Refrigerant |
|------------------|----------------|-------------|
| TXVFE-2-22-Kit   | 1.00 to 2 Tons | R-22        |
| TXVFE-3-22-Kit   | 2.25 to 3 Tons | R-22        |
| TXVFE-4-22-Kit   | 3.25 to 4 Tons | R-22        |
| TXVFE-6-22-Kit   | 4.25 to 6 Tons | R-22        |
| TXVFE-2-410A-Kit | 1.00 to 2 Tons | R-410A      |
| TXVFE-3-410A-Kit | 2.25 to 3 Tons | R-410A      |
| TXVFE-4-410A-Kit | 3.25 to 4 Tons | R-410A      |
| TXVFE-5-410A-Kit | 4.25 to 5 Tons | R-410A      |

**Note:** Connections:  
3/8" ODF In  
1/2" ODF Out, plus Aeroquip and Chatleff adaptors  
Equalizer 1/8" OD x 24" with 1/4" SAE flare nut



**REFRIGERANT**  
R-22, R-410A

**LARGE TEMPERATURE SERVICE RANGE**

-22°F to +275°F  
OPD MAX PS  
580 psig 650 psig

**MAX WORKING PRESSURE**  
650 psig  
PS 650 psig

# TXVH Valve

## Step 1:

Select orifice size based on nominal capacity



## Step 2:

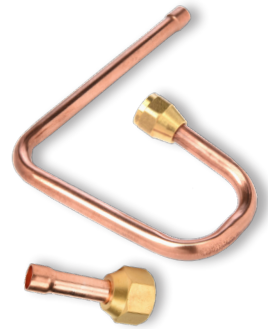
Select body to match refrigerant & connection style desired



## Step 3:

### SOLDER ADAPTERS

| Aftermarket Model | Solder Connection |
|-------------------|-------------------|
| TXVH-3S-IN        | 3/8"              |
| TXVH-2S-IN        | 1/4"              |
| TXVH-3 Loop-IN    | 3/8"              |

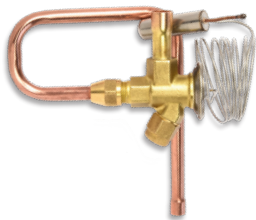


#### Note:

1. Copper tube and flare nut are included

### STEP 1: ORIFICE SELECTION CRITERIA

| Orifice Model | Nominal Capacity                   |           |                 |           |        |               |
|---------------|------------------------------------|-----------|-----------------|-----------|--------|---------------|
|               | R-22<br>R-407A<br>R-407C<br>R-407F |           | R-404A<br>R-507 |           | R-134a |               |
|               | Tons                               | Bal. Port | Tons            | Bal. Port | Tons   | Bal. Port     |
| TX-VH-0X      | 1/5                                |           | 1/8             |           | 1/8    |               |
| TXVH-00       | 1/3                                | AAA       | 1/4             | AAA       | 1/5    | AAA<br>AAAAAA |
| TXVH-01       | 3/4                                | AA        | 1/2             | AA        | 1/3    |               |
| TXVH-02       | 1                                  |           | 3/4             |           | 1/2    | AA            |




### STEP 2: SELECT BODY TO MATCH REFRIGERANT AND CONNECTION

| Valve Body Configuration<br>Inlet x Outlet x Equalizer | R-22<br>R-407A<br>R-407C<br>R-407F | R-404A<br>R-507   | R-407A<br>R-507<br>Low Temp<br>(with MOP) | R-134a        | Inlet Adaptor |
|--|------------------------------------|-------------------|---|---------------|---------------|
| 3/8 x 1/2 SAE Flare (Internally Equalized)             | TXVH-22                            | TXVH-404A-507     | TXVH-404A-507-14F                         | TX-VH-134a    | Not Required  |
| 3/8 x 1/2 x 1/4 SAE Flare                              | TXVHE-22                           | TXVHE-404A-507    | TXVHE-404A-507-14F                        | TX-VHE-134a   | Not Required  |
| 1/4 x 3/8 ODF Sweat (Internally Equalized)             | TXVH-22-3S                         | TXVH-404A-507-3S  | TXVH-404A-507-3S-14F                      | TXVH-134a-3S  | TXVH-2S-IN    |
| 1/4 x 3/8 x 1/4 ODF Sweat                              | TXVHE-22-3S                        | TXVHE-404A-507-3S | TXVHE-404A-507-3S-14F                     | TXVHE-134a-3S | TXVH-2S-IN    |
| 3/8 x 1/2 ODF Sweat (Internally Equalized)             | TXVH-22-4S                         | TXVH-404A-507-4S  | TXVH-404A-507-4S-14F                      | TXVH-134a-4S  | TXVH-3S-IN    |
| 3/8 x 1/2 x 1/4 ODF Sweat                              | TXVHE-22-4S                        | TXVHE-404A-507-4S | TXVHE-404A-507-4S-14F                     | TXVHE-134a-4S | TXVH-3S-IN    |






# TXV - Removable Inlet Strainer | Cross-Reference




| Ref.            | Inlet (in) | Out-let (in) | Ext. Eq. (in)         | Sanhua            |               |               |   | Sporlan                |               |              |
|-----------------|------------|--------------|-----------------------|-------------------|---------------|---------------|---|------------------------|---------------|--------------|
|                 |            |              |                       | Valve Body        | Cartridge     | Inlet Adaptor | Components  | EG                     | SBF           | SR           |
| R-404A<br>R-507 | 3/8" ODF   | 1/2" ODF     | ---                   | TXVH-404A-507-4S  | TXVH-0X       | TXVH-3S-IN    | <br>TXVH Sweat Body<br>(3 combinations) | EGS-1/8-C              |               |              |
|                 |            |              |                       |                   | TXVH-00       |               |   | EGS-1/6-C<br>EGS-1/4-C | SBFS-AAA-C    |              |
|                 |            |              |                       |                   | TXVH-01       |               |   | EGS-1/2-C              | SBFS-AA-C     |              |
|                 |            |              |                       | TXVHE-404A-507-4S | TXVH-00       |               |   | EGSE-1/6-C             | SBF-SE-AAA-C  | SRSE-1/6-C   |
|                 |            |              |                       |                   |               |               |   | EGSE-1/4-C             |               | SRSE-1/4-C   |
|                 |            |              |                       |                   |               |               |   | EGSE-1/6-Z             | SBF-SE-AAA-Z  | SRSE-1/6-Z   |
|                 |            |              |                       |                   | TXVH-01       |               |   | EGSE-1/4-Z             |               | SRSE-1/4-Z   |
|                 |            |              |                       |                   |               |               |   | EGSE-1/2-C             | SBFSE-AA-C    | SRSE-1/2-C   |
|                 |            |              |                       |                   |               |               |   | EGSE-1/2-Z             | SBFSE-AA-Z    | SRSE-1/2-Z   |
|                 |            |              | TXVH-03               |                   | EGSE-1-C      |               |   | SBFSE-A-C              | SRSE-1-C      |              |
|                 |            |              |                       |                   | EGSE-1-Z      |               |   | SBFSE-A-Z              | SRSE-1-Z      |              |
|                 |            |              |                       |                   | TXVH-04       |               |   | EGSE-1-1/2-C           | SBFSE-B-C     | SRSE-1-1/2-C |
|                 |            |              | EGSE-1-1/2-Z          | SBFSE-B-Z         |               |               |   | SRSE-1-1/2-Z           |               |              |
|                 |            |              | TXVH-05               | EGSE-2-C          |               |               |   |                        | SRSE-2-C      |              |
|                 |            |              |                       | EGSE-2-Z          |               |               |   | SRSE-2-Z               |               |              |
|                 |            |              |                       | TXVH-06           |               |               |   | SBFSE-C-C              | SRSE-3-C      |              |
|                 |            |              |                       |                   | SBFSE-C-Z     |               |   | SRSE-3-Z               |               |              |
|                 |            |              | TXVHE-404A-507-4S-14F |                   | TXVH-00       |               |   | EGSE-1/6-ZP            | SBF-SE-AAA-ZP | SRSE-1/6-ZP  |
|                 |            |              |                       | EGSE-1/4-ZP       |               |               |   |                        | SRSE-1/4-ZP   |              |
|                 |            |              |                       | TXVH-01           | EGSE-1/2-ZP   |               |   | SBF-SE-AA-ZP           | SRSE-1/2-ZP   |              |
|                 |            |              |                       |                   | EGSE-1-ZP     |               |   | SBFSE-A-ZP             | SRSE-1-Z      |              |
|                 |            |              |                       | TXVH-03           | EGSE-1-1/2-ZP |               |   | SBFSE-B-ZP             | SRSE-1-1/2-ZP |              |
|                 |            |              |                       |                   | EGSE-2-ZP     |               |   |                        | SRSE-2-ZP     |              |
|                 |            |              | TXVH-06               |                   | SBFSE-C-ZP    |               |   | SRSE-3-ZP              |               |              |

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# TXV - Removable Inlet Strainer | continued

| Ref.    | Inlet (in.)                | Outlet (in.) | Ext. Eq. (in.)  | Sanhua     |                          |   |  | Sporlan                |  |                          |
|---------|----------------------------|--------------|-----------------|------------|--------------------------|---|--|------------------------|--|--------------------------|
|         |                            |              |                 | Valve Body | Cartridge                | Inlet Adaptor   | Components   | EG                     | SBF  | SR                       |
| R-22    | 3/8" ODF                   | 1/2" ODF     | ---             | TXVH-22-4S | TXVH-00                  | TXVH-3S-IN  |  <p>TXVH Sweat Body<br/>(4 combinations)</p> | EGV-1/3-C              | SBFV-AAA-C   | SRV-1/3-C                |
|         |                            |              |                 |            | TXVH-01                  |   |  | EGV-1/3-Z              | SBFV-AAA-Z   | SRV-1/3-Z                |
|         |                            |              |                 |            | TXVH-02                  |   |  | EGV-1/2-C<br>EGV-3/4-C | SBFV-AA-C  | SRV-1/2-C                |
|         |                            |              |                 | TXVH-00    | EGV-1/2-Z<br>EGV-3/4-Z   |   |  | SBFV-AA-Z              | SRV-1/2-Z  |                          |
|         |                            |              |                 | TXVH-01    | EGV-1-C                  |   |  |                        | SRV-1-C  |                          |
|         |                            |              |                 | TXVH-02    | EGV-1-Z                  |   |  |                        | SRV-1-Z  |                          |
|         |                            |              |                 | TXVH-00    | EGV-1/3-ZP               |   |  | SBFV-AAA-ZP            | SRV-1/3-ZP   |                          |
|         |                            |              |                 | TXVH-01    | EGV-1/2-ZP<br>EGV-3/4-ZP |   |  | SBFV-AA-ZP             | SRV-1/2-ZP   |                          |
|         |                            |              |                 | TXVH-02    | EGV-1-ZP                 |   |  |                        | SRV-1-ZP   |                          |
|         |                            |              |                 | 1/4" ODF   | TXVHE-22-4S              |   |  | TXVH-01                |  <p>Cartridge with<br/>Removeable Strainer<br/>(5 orifice sizes)</p> | EGVE-1/2-C<br>EGVE-3/4-C |
|         |                            |              | TXVH-02         |            |                          |  <p>Inlet Sweat Adaptor<br/>(1 sizes)</p> | EGVE-1/2-Z<br>EGVE-3/4-Z   | SBFVE-AA-Z             | SRVE-1/2-Z   |                          |
|         |                            |              | TXVH-03         |            |                          | EGVE-1-C  |  | SRVE-1-C               |  |                          |
|         |                            |              | TXVH-04         |            |                          | EGVE-1-Z  |  | SRVE-1-Z               |  |                          |
|         |                            |              | TXVH-01         |            |                          | EGVE-1-1/2-C  | SBFVE-A-C  |                        |  |                          |
|         |                            |              | TXVH-02         |            | EGVE-1-1/2-Z             | SBFVE-A-Z   |  |                        |  |                          |
|         |                            |              | TXVHE-22-4S-14F |            | TXVH-01                  | EGVE-2-C<br>EGVE-2-1/2-C  | SBFVE-B-C  | SRVE-2-C               |  |                          |
|         |                            |              |                 |            | TXVH-02                  | EGVE-2-Z<br>EGVE-2-1/2-Z  | SBFVE-B-Z  | SRVE-2-Z               |  |                          |
|         |                            |              |                 |            | TXVH-03                  | EGVE-1/2-ZP<br>EGVE-3/4-ZP  | SBFVE-AA-ZP  | SRVE-1/2-ZP            |  |                          |
|         |                            |              |                 |            | TXVH-04                  | EGVE-1-ZP   |  | SRVE-1-ZP              |  |                          |
|         |                            |              |                 | TXVH-01    | EGVE-1-1/2-ZP            | SBFVE-A-ZP  |  |                        |  |                          |
| TXVH-02 | EGVE-2-ZP<br>EGVE-2-1/2-ZP | SBFVE-B-ZP   | SRVE-2-ZP       |            |                          |   |  |                        |  |                          |

# TXV - Removable Inlet Strainer | continued

| Ref.   | Inlet (in.) | Outlet (in.) | Ext. Eq. (in.) | Sanhua        |                      |               |   | Sporlan                  |                          |                        |
|--------|-------------|--------------|----------------|---------------|----------------------|---------------|---|--------------------------|--------------------------|------------------------|
|        |             |              |                | Valve Body    | Cartridge            | Inlet Adaptor | Components  | EG                       | SBF                      | SR                     |
| R-134a | 3/8" ODF    | 1/2" ODF     | ---            | TXVH-134a-4S  | TXVH-01              | TXVH-3S-IN    | <p>TXVH Sweat Body (2 combinations)</p>  <p>Cartridge with Removeable Strainer (3 orifice sizes)</p>  <p>Inlet Sweat Adaptor (1 sizes)</p>  |                          |                          | SRJ-1/4-C<br>SRJ-1/4-Z |
|        |             |              |                |               | TXVH-02              |               |   |                          | SBFF-AA-C<br>SBFJ-AA-C   |                        |
|        |             |              |                | TXVH-02       |                      |               |   | SBFF-AA-Z<br>SBFJ-AA-Z   |                          |                        |
|        |             |              |                | TXVH-02       |                      |               |   | SBFFE-AA-C<br>SBFJE-AA-C |                          |                        |
|        |             |              | 1/4" ODF       | TXVHE-134a-4S | TXVH-02              |               |   |                          | SBFFE-AA-Z<br>SBFJE-AA-Z |                        |
|        |             |              |                |               | TXVH-04              |               |   | EGFE-1-C<br>EGJE-1-C     | SBFFE-A-C<br>SBFJE-A-C   | SRJE-1-C               |
|        |             |              |                | TXVH-04       | EGFE-1-Z<br>EGJE-1-Z |               |   | SBFFE-A-Z<br>SBFJE-A-Z   | SRJE-1-Z                 |                        |
|        |             |              |                | TXVH-04       |                      |               |   |                          |                          |                        |

# TXV - ODF Sweat Connections | Cross-Reference




| Ref.            | Inlet (in.) | Outlet (in.)  | Ext. Eq. (in.) | Sanhua                |                       |               |   | Sporlan      |             |              |
|-----------------|-------------|---------------|----------------|-----------------------|-----------------------|---------------|---|--------------|-------------|--------------|
|                 |             |               |                | Valve Body            | Cartridge             | Inlet Adaptor | Components  | EF           | EBF         | ER           |
| R-404A<br>R-507 | 1/4" ODF    | 3/8" ODF      | ---            | TXVH-404A-507-3S      | TXVH-00               | TXVH-2S-IN    | TXVH Sweat Body<br>(7 combinations)<br><br><br><br>Cartridge<br>(6 orifice sizes)<br><br><br><br>Inlet Sweat Adaptor<br>(2 sizes)<br><br> | EFS-1/4-C    |             | ERS-1/4-C    |
|                 |             |               |                |                       | TXVH-01               |               |   |              | EBFS-AA-C   |              |
|                 |             |               |                |                       | TXVH-03               |               |   | EFS-1-C      | EBFS-A-C    | ERS-1-C      |
|                 |             | 1/2" ODF      | ---            | TXVH-404A-507-4S      | TXVH-00               |               |   | EFS-1/4-C    |             | ERS-1/4-C    |
|                 |             |               |                |                       | TXVH-01               |               |   |              | EBFS-AA-C   |              |
|                 |             |               |                |                       | TXVHE-404A-507-4S     |               |   | TXVH-01      | EFSE-1/2-C  |              |
|                 | 1/2" ODF    | 1/4" ODF      |                | TXVHE-404A-507-4S-14F | TXVH-01               | EFSE-1/2-Z    |   |              | ERSE-1/2-Z  |              |
|                 |             |               |                |                       |                       | EFSE-1/2-ZP   |   |              | ERSE-1/2-ZP |              |
|                 | 3/8" ODF    | 1/2" ODF      | 1/4" ODF       |                       | TXVHE-404A-507-4S     | TXVH-01       |   | EFSE-1/2-C   |             | ERSE-1/2-C   |
|                 |             |               |                |                       |                       | TXVH-03       |   | EFSE-1/2-Z   |             | ERSE-1/2-Z   |
|                 |             |               |                |                       |                       | TXVH-04       |   | EFSE-1-C     | EBFSE-A-C   | ERSE-1-C     |
|                 |             |               |                |                       | TXVHE-404A-507-4S-14F | TXVH-01       |   | EFSE-1-Z     | EBFSE-A-Z   | ERSE-1-Z     |
|                 |             |               |                |                       |                       | TXVH-03       |   | EFSE-1-1/2-C | EBFSE-B-C   | ERSE-1-1/2-C |
|                 |             |               |                |                       |                       | TXVH-04       |   | EFSE-1-1/2-Z | EBFSE-B-Z   | ERSE-1-1/2-Z |
|                 |             |               | EFSE-1/2-ZP    |                       | ERSE-1/2-ZP           |               |   |              |             |              |
|                 |             |               | EFSE-1-ZP      | EBFSE-A-ZP            | ERSE-1-ZP             |               |   |              |             |              |
|                 |             | EFSE-1-1/2-ZP | EBFSE-B-ZP     | ERSE-1-1/2-ZP         |                       |               |   |              |             |              |

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# TXV - ODF Sweat Connections | continued



| Ref. | Inlet (in.) | Outlet (in.) | Ext. Eq. (in.) | Sanhua      |             |               |  | Sporlan      |            |              |
|------|-------------|--------------|----------------|-------------|-------------|---------------|--|--------------|------------|--------------|
|      |             |              |                | Valve Body  | Cartridge   | Inlet Adaptor | Components   | EF           | EBF        | ER           |
| R-22 | 1/4" ODF    | 3/8" ODF     | ---            | TXVH-22-3S  | TXVH-00     | TXVH-2S-IN    | TXVH Sweat Body (7 combinations)   | EFV-1/4-C    | EBFV-AAA-C | ERV-1/3      |
|      |             | 1/2" ODF     | ---            | TXVH-22-4S  | TXVH-00     |               |    | EFV-1/4-C    | EBFV-AAA-C | ERV-1/3      |
|      |             |              | 1/4" ODF       | 1/4" ODF    | TXVHE-22-4S |               |  | TXVH-01      | EFVE-1/2-C | EBFVE-AA-C   |
|      |             | TXVH-02      |                |             |             |               | EFVE-1-C   |              | ERVE-1-C   |              |
|      | 3/8" ODF    | 1/2" ODF     | ---            | TXVH-22-4S  | TXVH-00     | TXVH-3S-IN    |    | EFV-1/4-C    | EBFV-AAA-C | ERV-1/3      |
|      |             |              |                |             | TXVH-01     |               |  | EFV-1/2-C    | EBFV-AA-C  | ERV-1/2      |
|      |             |              |                |             | TXVH-01     |               |  | EFVE-1/2-C   | EBFVE-AA-C | ERVE-1/2-C   |
|      |             |              |                |             | TXVH-02     |               |  | EFVE-1-C     |            | ERVE-1-C     |
|      |             |              |                |             | TXVH-03     |               |  | EFVE-1-1/2-C | EBFVE-A-C  | ERVE-1-1/2-C |
|      |             |              |                |             | TXVH-04     |               |  | EFVE-2-C     | EBFVE-B-C  | ERVE-2-C     |
|      | 3/8" ODF    | 1/2" ODF     | 1/4" ODF       | TXVHE-22-4S | TXVH-05     |               |  | EFVE-3-C     |            | ERVE-3-C     |
|      |             |              |                |             |             |               |  |              |            |              |

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# TXV - ODF Sweat Connections | continued



| Ref.   | Inlet (in.) | Outlet (in.) | Ext. Eq. (in.) | Sanhua       |                                   |               |                                     | Sporlan                          |                      |                        |          |
|--------|-------------|--------------|----------------|--------------|-----------------------------------|---------------|-------------------------------------|----------------------------------|----------------------|------------------------|----------|
|        |             |              |                | Valve Body   | Cartridge                         | Inlet Adaptor | Components                          | EF                               | EBF                  | ER                     |          |
| R-134a | 1/4" ODF    | 1/2" ODF     | ---            | TXVH-134a-4S | TXVH-00                           | TXVH-2S-IN    | TXVH Sweat Body<br>(2 combinations) |                                  |                      | ERJ-1/6-C              |          |
|        |             |              |                |              | TXVH-01                           |               |                                     | EFF-1/4-C<br>EFJ-1/4-C           |                      |                        |          |
|        |             |              |                |              | TXVH-02                           |               |                                     | EFF-1/2-C<br>EFJ-1/2-C           |                      | ERJ-1/2-C              |          |
|        |             |              | TXVHE-134a-4S  | TXVH-02      | EF-<br>FE-1/2-C<br>EFJE-<br>1/2-C |               |                                     |                                  | ERJE-1/2-C           |                        |          |
|        | ---         | TXVH-134a-4S | TXVH-01        | TXVH-02      | Cartridge<br>(4 orifice sizes)    |               |                                     |                                  | ERJ-1/4-C            |                        |          |
|        |             |              | TXVH-02        |              |                                   |               | EBFF-AA-C<br>EBFJ-AA-C              |                                  |                      |                        |          |
|        | 1/4" ODF    | 3/8" ODF     | 1/2" ODF       | 1/4" ODF     | TXVHE-134a-4S                     | TXVH-04       | TXVH-3S-IN                          | Inlet Sweat Adaptor<br>(2 sizes) |                      |                        |          |
|        |             |              |                |              |                                   |               |                                     |                                  | EFJE-1-C<br>EFJE-1-C | EBFFE-A-C<br>EBFJE-A-C | ERJE-1-C |

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# TXV - SAE Flare Connections | Cross-Reference

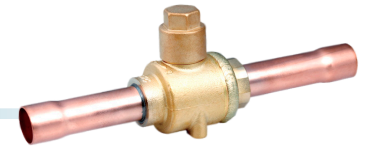
| Ref.            | Inlet (in)   | Outlet (in) | Ext. Eq. (in)                      | Sanhua                                 |           |  | Sporlan     |             |             |             |
|-----------------|--------------|-------------|------------------------------------|--|-----------|--|-------------|-------------|-------------|-------------|
|                 |              |             |                                    | Valve Body                             | Cartridge | Components                                 | G           | F           | BF          | R           |
| R-404A<br>R-507 | 1/4" SAE     | 1/2" SAE    | ---                                | TXVH-404A-507<br>(3/8" SAE Inlet)      | TXVH-00   | TXVH SAE<br>Flare Body<br>(6 combinations) | GS-1/4-C    | FS-1/4-C    |             | RS-1/4-C    |
|                 |              |             |                                    |  | TXVH-01   |  | GS-1/4-Z    | FS-1/4-Z    |             | RS-1/4-Z    |
|                 |              |             |                                    | TXVH-404A-507-14F<br>(3/8" SAE Inlet)  | TXVH-00   |  | GS-1/2-C    | FS-1/2-C    | BFSA-AA-C   | RS-1/2-C    |
|                 |              |             | TXVH-01                            | GS-1/2-Z                               | FS-1/2-Z  |  | BFSA-AA-Z   | RS-1/2-Z    |             |             |
|                 |              |             | TXVHE-404A-507<br>(3/8" SAE Inlet) | TXVH-01                                | GSE-1/2-C |  | FSE-1/2-C   | BFSE-AA-C   | RSE-1/2-C   |             |
|                 |              |             | TXVH-01                            | GSE-1/2-Z                              | FSE-1/2-Z |  | BFSE-AA-Z   | RSE-1/2-Z   |             |             |
|                 | 3/8" SAE     | 1/2" SAE    | 1/4" SAE                           | TXVHE-404A-507-14F<br>(3/8" SAE Inlet) | TXVH-01   | Cartridge<br>(5 orifice sizes)             | GSE-1/2-ZP  | FSE-1/2-ZP  | BFSE-AA-ZP  | RSE-1/2-ZP  |
|                 |              |             |                                    |  | TXVH-03   |  | GSE-1-C     | FSE-1-C     | BFSE-A-C    | RSE-1-C     |
|                 |              |             |                                    | TXVH-04                                | GSE-1-Z   |  | FSE-1-Z     | BFSE-A-Z    | RSE-1-Z     |             |
|                 |              |             |                                    | TXVHE-404A-507-14F                     | TXVH-03   |  | GSE-1-1/2-C | FSE-1-1/2-C | BFSE-B-C    | RSE-1-1/2-C |
|                 |              |             |                                    |  | TXVH-04   |  | GSE-1-1/2-Z | FSE-1-1/2-Z | BFSE-B-Z    | RSE-1-1/2-Z |
|                 |              |             |                                    | GSE-1-ZP                               | FSE-1-ZP  |  | BFSE-A-ZP   | RSE-1-ZP    |             |             |
| GSE-1-1/2-ZP    | FSE-1-1/2-ZP | BFSE-B-ZP   | RSE-1-1/2-ZP                       |  |           |  |             |             |             |             |
| R-22            | 1/4" SAE     | 1/2" SAE    | ---                                | TXVH-22<br>(3/8" SAE Inlet)            | TXVH-00   |  | GV-1/4-C    | FV-1/4-C    | BFV-AAA-C   | RV-1/3-C    |
|                 |              |             |                                    |  | TXVH-01   |  | GV-1/2-C    | FV-1/2-C    | BFV-AA-C    | RV-1/2-C    |
|                 |              |             |                                    | TXVHE-22<br>(3/8" SAE Inlet)           | TXVH-01   |  | GVE-1/2-C   | FVE-1/2-C   | BFVE-AA-C   | RVE-1/2-C   |
|                 |              |             | TXVH-02                            | GVE-1-C                                | FVE-1-C   |  |             | RVE-1-C     |             |             |
|                 |              |             | TXVH-22                            | TXVH-01                                | GV-1/2-C  |  | FV-1/2-C    | BFV-AA-C    | RV-1/2-C    |             |
|                 |              |             |                                    | TXVH-02                                | GV-1-C    | FV-1-C                                     |             | RV-1-C      |             |             |
|                 | TXVH-03      | GV-1-1/2-C  |                                    | FV-1-1/2-C                             | BFV-A-C   | RV-1-1/2-C                                 |             |             |             |             |
|                 | 3/8" SAE     | 1/2" SAE    | 1/4" SAE                           | TXVHE-22                               | TXVH-01   | GVE-1/2-C                                  | FVE-1/2-C   | BFVE-AA-C   | RVE-1/2-C   |             |
|                 |              |             |                                    |  | TXVH-02   | GVE-1-C                                    | FVE-1-C     |             | RVE-1-C     |             |
|                 |              |             |                                    |  | TXVH-03   | GVE-1-1/2-C                                | FVE-1-1/2-C | BFVE-A-C    | RVE-1-1/2-C |             |
|                 |              |             |                                    |  | TXVH-04   | GVE-2-C                                    | FVE-2-C     | BFVE-B-C    | RVE-2-C     |             |

# TXV - SAE Flare Connections | continued



| Ref.   | Inlet (in) | Outlet (in)                | Ext. Eq. (in) | Sanhua                       |           |                        | Sporlan                    |                        |                        |                        |           |
|--------|------------|----------------------------|---------------|------------------------------|-----------|------------------------|----------------------------|------------------------|------------------------|------------------------|-----------|
|        |            |                            |               | Valve Body                   | Cartridge | Components             | G                          | F                      | BF                     | R                      |           |
| R-134a | 1/4 SAE    | 1/2 SAE                    | --            | TXVH-134a<br>(3/8 SAE Inlet) | TXVH-02   |                        |                            |                        |                        |                        |           |
|        |            |                            |               |                              | TXVH-03   | GF-1/2-C<br>GJ-1/2-C   | FF-1/2-C<br>FJ-1/2-C       | BFFE-AA-C<br>BFJE-AA-C | RJ-1/2-C               |                        |           |
|        |            |                            | 1/4 SAE       | TXVHE-134a                   | TXVH-03   | GFE-1/2-C<br>GJE-1/2-C | FFE-1/2-C<br>FJE-1/2-C     | BFF-AA-C<br>BFJ-AA-C   | RJE-1/2-C              |                        |           |
|        |            |                            | --            | TXVH-134a                    | TXVH-03   | GF-1/2-C<br>GJ-1/2-C   | FF-1/2-C<br>FJ-1/2-C       | BFF-AA-C<br>BFJ-AA-C   | RJ-1/2-C               |                        |           |
|        |            |                            |               |                              | TXVH-04   | GF-1-C<br>GJ-1-C       | FF-1-C<br>FJ-1-C           | BFF-A-C<br>BFJ-A-C     | RJ-1-C                 |                        |           |
|        |            |                            | 3/8 SAE       | 1/2 SAE                      | 1/4 SAE   | TXVHE-134a             | TXVH-03                    | GFE-1/2-C<br>GJE-1/2-C | FFE-1/2-C<br>FJE-1/2-C | BFFE-AA-C<br>BFJE-AA-C | RJE-1/2-C |
|        | TXVH-04    | GFE-1-C<br>GJE-1-C         |               |                              |           |                        | FFE-1-C<br>FJE-1-C         | BFFE-A-C<br>BFJE-A-C   | RJE-1-C                |                        |           |
|        | TXVH-05    | GFE-1-1/2-C<br>GJE-1-1/2-C |               |                              |           |                        | FFE-1-1/2-C<br>FJE-1-1/2-C |                        | RJE-1-1/2-C            |                        |           |
|        |            |                            |               |                              |           |                        |                            |                        |                        |                        |           |

# Ball Valve | Cross-Reference



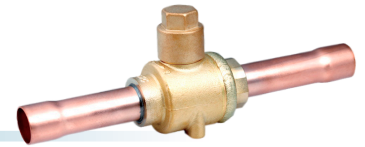
| Connection ODF (in.) | Access Valve | Sanhua    | JB Industries |        | Apollo    | Emerson | Henry  | Mueller  | Sporlan   | Superior    |
|----------------------|--------------|-----------|---------------|--------|-----------|---------|--------|----------|-----------|-------------|
|                      |              |           | Standard      | E-Line |           |         |        |          |           |             |
| 3/8                  | No           | BV-3-S    | V34200        | V34300 | 79-701-01 | BVE 038 | 907203 | AP17860C | EBV-1030  | 586WA-6ST   |
|                      | Yes          | BV-3-S-T  | V34400        | V34500 |           | BVS 038 | 937203 | AQ17860C | EBVT-1030 | 586WAS-6ST  |
| 1/2                  | No           | BV-4-S    | V34201        | V34301 | 79-702-01 | BVE 012 | 907204 | AP17861C | EBV-1040  | 586WA-8ST   |
|                      | Yes          | BV-4-S-T  | V34401        | V34501 |           | BVS 012 | 937204 | AQ17861C | EBVT-1040 | 586WAS-8ST  |
| 5/8                  | No           | BV-5-S    | V34202        | V34302 | 79-703-01 | BVE 058 | 907205 | AP17862C | EBV-1050  | 586WA-10ST  |
|                      | Yes          | BV-5-S-T  | V34402        | V34502 |           | BVS 058 | 937205 | AQ17862C | EBVT-1050 | 586WAS-10ST |
| 3/4                  | No           | BV-6-S    | V34203        | V34303 |           | BVE 034 | 907306 | AP17863  | EBV-1060  | 587WA-12ST  |
|                      | Yes          | BV-6-S-T  |               | V34503 |           | BVS 034 | 937306 | AQ17863  | EBVT-1060 |             |
| 7/8                  | No           | BV-7-S    | V34204        | V34304 | 79-704-01 | BVE 078 | 907307 | AP17864C | EBV-1070  | 587WA-14ST  |
|                      | Yes          | BV-7-S-T  | V34404        | V34504 |           | BVS 078 | 937307 | AQ17864C | EBVT-1070 | 587WAS-14ST |
| 1 1/8                | No           | BV-9-S    | V34206        | V34306 | 79-705-01 | BVE 118 | 907409 | AP17865  | EBV-1090  | 591WA-11ST  |
|                      | Yes          | BV-9-S-T  | V34406        | V34506 |           | BVS 118 | 937409 | AQ17865  | EBVT-1090 | 591WAS-11ST |
| 1 3/8                | No           | BV-11-S   | V34207        | V34307 | 79-706-01 | BVE 138 | 907511 | A17866   | EBV-1110  | 592WA-13ST  |
|                      | Yes          | BV-11-S-T | V34407        | V34507 |           | BVS 138 | 937511 | AC17866  | EBVT-1110 | 592WAS-13ST |
| 1 5/8                | No           | BV-13-S   | V34208        | V34308 | 79-707-01 | BVE 158 | 907613 | A17867   | EBV-1130  | 593WA-15ST  |
|                      | Yes          | BV-13-S-T | V34408        | V34508 |           | BVS 158 | 937613 | AC17867  | EBVT-1130 | 593WAS-15ST |

\* Reduced Port

Sanhua ball valves are approved under CRN # OC23590.5 for all jurisdictions



# Ball Valve | continued

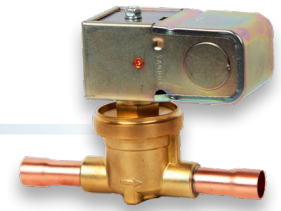


| Conn. ODF (in.) | Access Valve | Sanhua    | JB Industries |          | Apollo      | Emerson   | Henry    | Mueller  | Sporlan   | Superior     |
|-----------------|--------------|-----------|---------------|----------|-------------|-----------|----------|----------|-----------|--------------|
|                 |              |           | Standard      | E-Line   |             |           |          |          |           |              |
| 2 1/8           | No           | BV-17-S   | V34209        | V34309   | 79-708-01   | BVE 218   | 907617   | A17868   | EBV-1170  | 594WA-21ST   |
|                 | Yes          | BV-17-S-T | V34409        | V34509   |             | BVS 218   | 937617   | AC17868  | EBVT-1170 | 594WAS-21ST  |
| 2 5/8           | No           | BV-21-S   | V34210        | V34310   | 79-709-01   | BVE 258 * |          | A17869   | EBV-1210  | 594WA-25ST * |
|                 | Yes          | BV-21-S-T |               | V34510   |             | BVS 258 * | 937721 * | AC17869  | EBVT-1210 | 595WA-25ST   |
| 3 1/8           | No           | BV-25-S   | V34211 *      | V34311 * | 79-600-01 * | BVE 318 * | 907825FP | A17870   | EBV-1250  | 594WA-31ST * |
|                 | Yes          | BV-25-S-T |               | V34511 * |             | BVS 318 * | 937725 * | AC17870  | EBVT-1250 | 596WA-31ST   |
| 3 5/8           | No           |           |               |          |             |           |          |          |           | 596WA-35ST * |
|                 | Yes          | BV-29-S-T |               |          |             |           |          | B34909 * |           |              |
| 4 1/8           | No           |           |               |          |             |           |          |          |           | 596WA-41ST * |
|                 | Yes          | BV-33-S-T |               |          |             |           |          | B34910 * |           |              |

\* Reduced Port

Sanhua ball valves are approved under CRN # 0C23590.5 for all jurisdictions

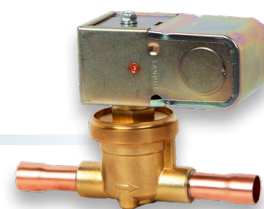
# Solenoid Valves | Cross-Reference



| Conn. ODF (in.) | Sanhua    | Sporlan  |                          | Emerson              |                      | Parker | Danfoss             |  |  |
|-----------------|-----------|----------|--------------------------|----------------------|----------------------|--------|---------------------|--|--|
|                 |           | Standard | R-410A                   | Standard             | R-410A               |        |                     |  |  |
| 1/4"            | SoV3-2-S  | E3S120   |                          | 100RB2S2             |                      | R16E32 | EVR3<br>(032F7105)  | EVI 3<br>(032F9525)<br>EVI 3<br>(032F5024) | EVUL 3<br>(032F9511)<br>EVUL 3<br>(032F8202) |
|                 | SoV3-3-S  | E3S130   |                          | 100RB2S3             |                      |        | R16E33              | EVR3<br>(032F1157)                         | EVI 3<br>(032F5111)<br>EVI 3<br>(032F5026)   |
| 3/8"            | SoV6-3-S  | E6S130   | E6S130-HP                | 200RB3T3             | 200RD3T3             |        | EVR6<br>(032F7115)  | EVI 6<br>(032F9527)<br>EVI 6<br>(032F5046) | EVUL 6<br>(032F8209)                         |
|                 | SoV6-4-S  | E6S140   | E6S140-HP                | 200RB3T4             | 200RD3T4             |        | EVR6<br>(032F1162)  | EVI 6<br>(032F9528)<br>EVI 6<br>(032F5049) | EVUL 6<br>(032F9514)<br>EVUL 6<br>(032F8210) |
| 1/2"            | SoV9-4-S  | E9S240   | E9S240-HP                | 200RB4T4<br>200RB5T4 | 200RD4T4<br>200RD5T4 |        | EVR8<br>(032F7121)  |  |  |
|                 | SoV10-4-S | E10S240  | E10S140-HP<br>E10S240-HP | 200RB6T4             | 200RD6T4             |        | EVR10<br>(032F1166) |  |  |
|                 | SoV10-5-S | E10S250  | E10S150-HP<br>E10S250-HP | 200RB6S5<br>200RB6T5 | 200RD6T5             |        | EVR10<br>(032F1168) |  |  |
| 5/8"            | SoV15-5-S | E14S250  | E14S250-HP               | 200RB7T5             | 200RD7T5             |        | EVR15<br>(032F1171) |  |  |
|                 | SoV15-7-S | E14S270  | E14S270-HP               | 200RB7T7             | 200RD7T7             |        | EVR15<br>(032F7130) |  |  |
| 7/8"            | SoV20-7-S | E19S270  | E19S270-HP               | 200RB9T7             | 200RD9T7             |        | EVR20<br>(032F1176) |  |  |
|                 | SoV22-7-S | E25S270  | E25S270-HP               | 200RB12T7            | 200RD12T7            |        |                     |  |  |

Sanhua solenoid valves are approved under # OC22908.2 for all jurisdictions.

# Solenoid Valves | continued



| Conn. ODF (in.)                              | Sanhua      | Sporlan  |             | Emerson                |            | Parker   | Danfoss             |  |  |
|--|-------------|----------|-------------|------------------------|------------|----------|---------------------|--|--|
|  |             | Standard | R-410A      | Standard               | R-410A     |          |                     |  |  |
| 7/8"   | SoV15-7-S   | E14S270  | E14S270-HP  | 200RB7T7               | 200RD7T7   |          | EVR15<br>(032F7130) |  |  |
|  | SoV20-7-S   | E19S270  | E19S270-HP  | 200RB9T7               | 200RD9T7   |          | EVR20<br>(032F1176) |  |  |
|  | SoV22-7-S   | E25S270  | E25S270-HP  | 200RB12T7              | 200RD12T7  |          |                     |  |  |
| 1-1/8"                                       | SoV20-9-S   | E19S290  | E19S290-HP  | 200RB9T9               | 200RD9T9   |          |                     |  |  |
|  | SoV22-9-S   | E25S290  | E25S290-HP  | 200RB12T9              | 200RD12T9  |          | EVR22<br>(032F7145) |  |  |
| 1-3/8"                                       | SoV22-11-S  | E25S2110 | E25S2110-HP |                        |            |          | EVR22<br>(032F7146) |  |  |
| <b>Solenoid Valves with Manual Lift Stem</b> |             |          |             |                        |            |          |                     |  |  |
| 3/8"   | SoV6-3-S-M  | ME6S130  | ME6S130-HP  | 200RB3T3M              | 200RD3T3M  | R26E63M  | EVR6<br>(032F7116)  |  |  |
| 1/2"   | SoV6-4-S-M  | ME6S140  | ME6S140-HP  | 200RB3T4M              | 200RD3T4M  |          | EVR6<br>(032F7144)  |  |  |
|  | SoV10-4-S-M | ME10S240 | ME10S240-HP | 200RB6T4M              | 200RD6T4M  | R36E104M | EVR10<br>(032F1188) |  |  |
| 5/8"   | SoV10-5-S-M | ME10S250 | ME10S250-HP | 200RB6S5M<br>200RB6T5M | 200RD6T5M  | R36E105M | EVR10<br>(032F7149) |  |  |
|  | SoV15-5-S-M | ME14S250 | ME14S250-HP | 200RB7T5M              | 200RD7T5M  | R38E145M | EVR15<br>(032F1172) |  |  |
| 7/8"   | SoV20-7-S-M | ME19S270 | ME19S270-HP | 200RB9T7M              | 200RD9T7M  | R42E197M | EVR20<br>(032F1177) |  |  |
| 1-1/8"                                       | SoV22-9-S-M | ME25S290 | ME25S290-HP | 200RB12T9M             | 200RD12T9M | R46E259M | EVR22<br>(032F7137) |  |  |

Sanhua solenoid valves are approved under # OC22908.2 for all jurisdictions.

# Sight Glass/Moisture Indicator | Cross-Reference



| Connection (in.) |                         | Sanhua      | Danfoss       |                |                   | Emerson        |                   | Muel-ler | Parker  | Sporlan   |               |
|------------------|-------------------------|-------------|---------------|----------------|-------------------|----------------|-------------------|----------|---------|-----------|---------------|
|                  |                         | Aftermarket | CFC/HCFC Ind. | HFC Indi-cator | R-410A Indica-tor | Stan-dard Ind. | Hi Ac-curacy Ind. |          |         | Stan-dard | Cop-per Conn. |
| 1/4              | Male SAE Flare          | SG-2        | SIG 6         | SGN 6          | SGH 6             | AMI-1MM2       | HMI-1MM2          | A 18101  | PSG-2   | SA-12     |               |
|                  | Female x Male SAE Flare | SG-2-FM     | SIG 6 (FM)    | SGN 6 (FM)     |                   | AMI-1FM2       | HMI-1FM2          | A 18106  | PSG-2MF | SA-12FM   |               |
|                  | ODF Solder              | SG-2-S      | SIG 6s        | SGN 6s         | SGH 6s            | AMI-1TT2       | HMI-1TT2          | A 18114  | PSG-2S  | SA-12S    | SA-K142       |
| 3/8              | Male SAE Flare          | SG-3        | SIG 10        | SGN 10         |                   | AMI-1MM3       | HMI-1MM3          | A 18102  | PSG-3   | SA-13     |               |
|                  | Female x Male SAE Flare | SG-3-FM     | SIG 10 (FM)   | SGN 10 (FM)    |                   | AMI-1FM3       | HMI-1FM3          | A 18107  | PSG-3MF | SA-13FM   |               |
|                  | ODF Solder              | SG-3-S      | SIG 10s       | SGN 10s        | SGH 10s           | AMI-1TT3       | HMI-1TT3          | A 18115  | PSG-3S  | SA-13S    | SA-K143       |
| 1/2              | Male SAE Flare          | SG-4        | SIG 12        | SGN 12         |                   | AMI-1MM4       | HMI-1MM4          | A 18103  | PSG-4   | SA-14     |               |
|                  | Female x Male SAE Flare | SG-4-FM     | SIG 12 (FM)   | SGN 12 (FM)    |                   | AMI-1FM4       | HMI-1FM4          | A 18108  | PSG-4MF | SA-14FM   |               |
|                  | ODF Solder              | SG-4-S      | SIG 12s       | SGN 12s        | SGH 12s           | AMI-1TT4       | HMI-1TT4          | A 18116  | PSG-4S  | SA-14S    | SA-K144       |
| 5/8              | ODF Solder              | SG-5-S      | SIG 16s       | SGN 16s        | SGH 16s           | AMI-1TT5       | HMI-1TT5          | A 18117  | PSG-5S  | SA-15S    | SA-K145       |
| 7/8              | ODF Solder              | SG-7-S      | SIG 22s       | SGN 22s        | SGH 22s           | AMI-1TT7       | HMI-1TT7          | A 18119  | PSG-7S  | SA-17S    | SA-K147       |
| 1 1/8            | ODF Solder              | SG-9-S      |               |                |                   | AMI-1TT9       | HMI-1TT9          | A 18120  | PSG-9S  | SA-19S    |               |

# PS - Pressure Controls



| Style         | Reset        | Sanhua      | Danfoss    | Johnson Controls | Ranco                            |
|---------------|--------------|-------------|------------|------------------|----------------------------------|
| Low Pressure  | Auto Reset   | PS01AM-S01  | 060-523300 | P70AB-2C         | 010-1402<br>010-1483             |
|               |              |             | 606-523700 |                  |                                  |
| 060-523500    |              |             |            |                  |                                  |
|               | Manual Reset | PS01MM-S01  |            |                  |                                  |
| High Pressure | Auto Reset   | PS50AM-S01  | 060-524100 |                  | 016-108<br>010-2054              |
|               |              |             | 060-524200 |                  |                                  |
|               |              |             | 060-524300 |                  |                                  |
|               |              |             | 060-524500 |                  |                                  |
|               | Manual Reset | PS50MM-S01  | 060-524600 |                  |                                  |
| Dual Pressure | Auto Reset   | PS15AAM-S01 | 060-524700 | P70LB-1C         | 012-1549<br>012-4834<br>012-1506 |
|               |              |             | 060-524800 |                  |                                  |
|               |              |             | 060-525300 |                  |                                  |
|               |              |             | 060-525400 |                  |                                  |
|               | Manual Reset | PS15MM-S01  | 060-524900 | P70MA-1C         |                                  |
|               |              | 060-525000  |            |                  |                                  |

## PS - Fan Cycle Controllers

| Style         | Reset        | Sanhua     | Danfoss                  | Johnson Controls | Ranco |
|---------------|--------------|------------|--------------------------|------------------|-------|
| High Pressure | Auto Reset   | PS50AM-S01 | 060-524300<br>060-524500 |                  |       |
|               | Manual Reset | PS50MM-S01 | 060-524600               |                  |       |