

## FLANGED, IN-LINE DISC TYPE

Size: 1/2" - 4"

For Ammonia (R-717) and Halocarbon Refrigerants

### Features

- **Pressure Rating: 300PSI (-20°F – +240°F)**
- **ASTM A536 Gr. 65-45-12 Ductile Iron Body (600J Series)**
- **ASTM A108 Steel Body (600K Series)**
- **Spring Closing**
- **Install Horizontally or Vertically**
- **1/4" Purge Line Connection (2", 3" and 4")**
- **Operating Temperature Range (-60°F to +240°F)**

### Description

The Series 600 flanged, in-line disc-type check valves are spring closing with a light spring. They may be installed in vertical or horizontal runs. There is a removable back plate that allows the valve to be disassembled for maintenance.

The 600D has a metal to metal seat. The 600D2 and 600D3 check valves incorporate the Durabla check valve unit. Series 600D and 'S' suffix valves are spring loaded to close, requiring about 2 psi pressure drop to open.

The Series 600J and 600K valves are Teflon seated valves. When ordered without the 'S' suffix, they are supplied with a light spring, making them suitable for gravity drain lines.



### Design Function

The Series 600 check valves prevent reverse flow of refrigerant in suction, hot gas and liquid lines. These valves are suitable for liquid refrigerant gravity drain applications, pump discharge and suction. When used for gravity drain, they should be mounted vertically. Valves are designed for 300 psi maximum working pressure. When used in hot gas defrost applications, they are installed between the drain pan and the hot gas inlet to the evaporator. In this manner, the valve prevents liquid from collecting in the drain pan coil during normal evaporator operation.

Series 600 check valves are not particularly suitable for reciprocating compressor discharge applications and where flow pulsation sets up a harmonious frequency to that of the valve.

The Series 600 check valve is normally closed, light spring actuated. When the refrigerant mass flow is sufficient to create a pressure drop across the valve to overcome the force of the closing spring, the disc is forced away from its seat, permitting flow. As the mass flow decreases, the pressure drop across the disc will decrease, and the disc will be forced back against its seat by the closing spring.

# Engineering Information

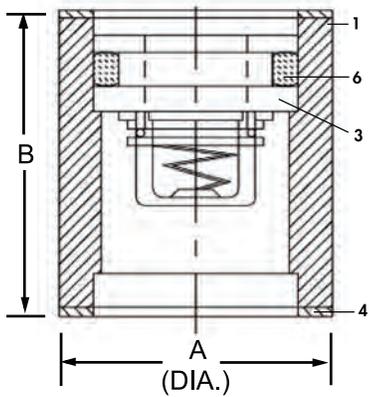


Fig 1 600D Check Valves

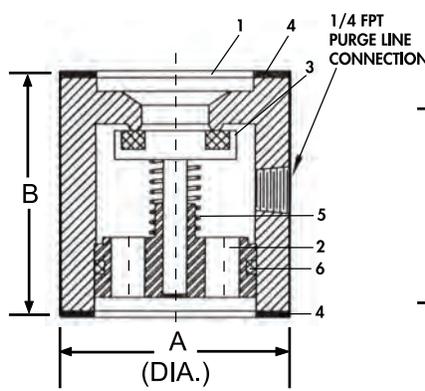


Fig. 2 600K Check Valves

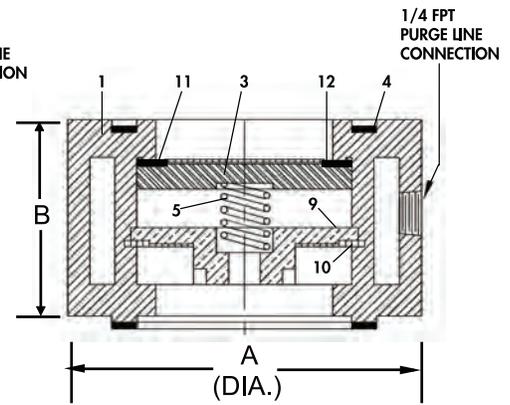


Fig. 3 600J Check Valves

## Dimensions

| Valve No. | Drawing No. | Flanged Connections (IPS Thread or Socket) | Outside Diameter Dimension 'A' | Height Less Flanges Dimension 'B' | Overall Height with Flanges | Orifice Size | Flange Type | Shipping Weight [lbs] |
|-----------|-------------|--|--------------------------------|-----------------------------------|-----------------------------|--------------|-------------|-----------------------|
| 600D2     | Fig. 1      | 1/2, 3/4                                   | 1.69                           | 1.75                              | 3.50                        | 5/8          | Oval        | 4.0                   |
| 600D3     | Fig. 1      | 1  | 2.06                           | 2.38                              | 4.13                        | 7/8          | Oval        | 5.5                   |
| 600JR     | Fig. 3      | 1/2, 3/4, 1                                | 2.31                           | 1.56                              | 3.31                        | 1            | Oval        | 5.0                   |
| 600J      | Fig. 3      | 1 1/4, 1 1/2                               | 3.25                           | 2.06                              | 4.06                        | 1 1/2        | Square      | 10.0                  |
| 600K*     | Fig. 2      | 1, 1 1/4                                   | 2.38                           | 2.63                              | 4.63                        | 1-5/16       | Square      | 7.0                   |
| 600AJ     | Fig. 3      | 1 1/2, 2                                   | 4.00                           | 2.31                              | 4.44                        | 2            | Square      | 12.0                  |
| 600AK*    | Fig. 2      | 1 1/2, 2                                   | 3.25                           | 3.33                              | 5.46                        | 1-9/16       | Square      | 10.5                  |
| 600BJ*    | Fig. 3      | 3  | 5.63                           | 3.50                              | 6.50                        | 3            | Square      | 30.0                  |
| 600DJ*    | Fig. 3      | 4  | 7.13                           | 4.19                              | 7.82                        | 4            | Square      | 45.0                  |

All dimensions in inches

\* If ordered with suffix 'S', valve will be supplied with heavy spring (not suitable for gravity drain).

\* Only these valves have the 1/4" FPT purge line connection.

## Parts

| Item No. | Part Name       | 600D2 (Fig. 1) | 600D3 (Fig. 1) | 600JR (Fig. 3) | 600J (Fig. 3)  | 600K <sup>†</sup> (Fig. 2) | 600AJ (Fig. 3) | 600AK <sup>†</sup> (Fig. 2) | 600BJ <sup>‡</sup> (Fig. 3) | 600DJ <sup>‡</sup> (Fig. 3) |
|----------|-----------------|----------------|----------------|----------------|----------------|----------------------------|----------------|-----------------------------|-----------------------------|-----------------------------|
| 1        | Valve Body      | 600D2-1        | 600D3-1        | 600JR-VB       | 600J-VB        | 600K-VB                    | 600AJ-VB       | 600AK-VB                    | 600BJ-VB                    | 600DJ-VB                    |
| 2        | Guide Piece     | -              | -              | -              | -              | 602K                       | -              | 602AK                       | -                           | -                           |
| 3        | Valve Piece     | 600D2-2        | 600D3-2        | 604JR          | 604J           | 604                        | 604AJ          | 604A                        | 604BJ                       | 604DJ                       |
| 4        | Gasket (2)      | 728            | 723            | 626            | 63W            | 63                         | 73             | 73                          | 326Y                        | 326YA                       |
| 5        | Spring          | Light          | -              | 605JR          | 605AJ          | 477K                       | 605AJ          | 605A4                       | 605BJ                       | 605DJ                       |
|          |                 | Heavy          | -              | -              | -              | 477-1                      | -              | 605A1                       | 605BJS                      | 605DJS                      |
| 6        | O-Ring          | 11-215         | 11-222         | -              | -              | 11-222                     | -              | 11-229                      | -                           | -                           |
| 7        | Bolt (4)        | 72C*           | 72E*           | 72C*           | 721A           | 721L                       | 72E            | 726C                        | 24B                         | 24C                         |
| 8        | Nut (4)         | 58*            | 58*            | 58*            | 57             | 57                         | 58             | 58                          | 59                          | 60                          |
| 9        | Back Plate      | -              | -              | 602JR          | 602J           | -                          | 602AJ          | -                           | 602BJ                       | 602DJ                       |
| 10       | Back Plate Ring | -              | -              | 608JR          | 608J           | -                          | 608AJ          | -                           | 608BJ                       | 608DJ                       |
| 11       | Teflon Ring     | -              | -              | 603JR          | 603J           | -                          | 603AJ          | -                           | 603BJ                       | 603DJ                       |
| 12       | Snap Ring       | -              | -              | 601JR          | 601J           | -                          | 601AJ          | -                           | 601BJ                       | 601DJ                       |
| Ref.     | Line Sizes      | 1/2", 3/4"     | 1"             | 1/2", 3/4", 1" | 1 1/4", 1 1/2" | 1", 1 1/4"                 | 1 1/2", 2"     | 1 1/2", 2"                  | 3"                          | 4"                          |

\*Only 2 bolts and nuts

‡ If ordered with suffix 'S', valve will be supplied with a heavy spring (not suitable for gravity drain).

‡ Only these valves have the 1/4" FPT purge connection.

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