

Data sheet

Float valve

Type HFI



HFI is a high pressure float valve with internal liquid measuring device. The float valve is designed for direct flange mounting or welding on to plate heat exchanger type condensers, as illustrated in fig 1.

HFI is direct acting, therefore no differential pressure is required to activate the valve.

HFI is sturdy and reliable owing to its simple design. The float valve is equipped with a purge valve for purging non condensable gases e.g. air from the top of the valve housing. This facility is also useful if the valve has to be serviced.

The HFI is available with two external connections on the housing for drainage and pressure equalizations.

Features

- Designed for direct flange mounting on to plate heat exchanger type condensers
- Can be mounted directly on vessels
- Temperature range:
-50/+80°C (-58/+176°F)
- Equipped with purge valve for purging non condensable gasses
- Available with external connections for drainage and pressure equalizations
- Maximum operating pressure is 25 bar g (363 psi g)
- Suitable for R717 (ammonia), HCFC and HFC with a density of 500 through 700 kg/m³ (31.21 - 43.70 lb/ft³). For densities outside this range please contact your local Danfoss sales company.
- Housing i.e. shell and flange are made of special steel approved for low temperature application
- Classification: DNV, CRN, BV, EAC etc.
To get an updated list of certification on the products please contact your local Danfoss Sales Company.

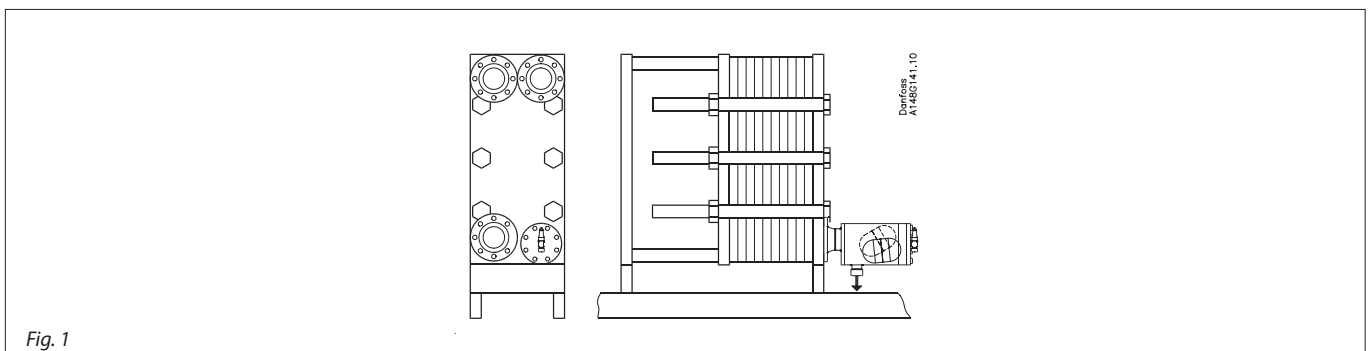


Fig. 1

Design

Available connections

Flange:
 Inlet: Flange DN 100 or DN 150
 (DIN-2635/DIN 2512-F)
 Outlet: Welding connection DN 50 (EN 10220)

Butt-weld, DIN:
 Inlet: DN 100 or DN 150 (EN 10220)
 Outlet: Welding connection DN 50 (EN 10220)

Butt-weld, ANSI:
 Inlet: DN 100 (4 in.) or DN 150 (6 in.)
 (ANSI B 36.10)
 Outlet: Welding connection DN 50 (2 in.)
 (ANSI 36.10)

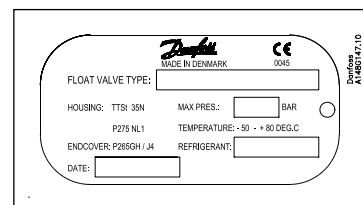
Housing

Housing i.e. shell and flange is made of special steel approved for low temperature operation.

Installation

Refer to installation instruction for HFI.

Identification:



Pressure Equipment Directive (PED)

The HFI-valves are approved in accordance with the European standard specified in the Pressure Equipment Directive and are CE marked. For further details / restrictions - see Installation Instruction



| | |
|----------------|-------------------------------------|
| HFI valves | |
| Nominal bore | DN 100 and 150 mm (4 in. and 6 in.) |
| Classified for | Fluid group I |
| Catagory | III |

Technical data

- Refrigerants
 Suitable for R717 (ammonia), HCFC and HFC with a density of 500 through 700 kg/m³ (31.21 - 43.70 lb/ft³). For densities outside this range please contact your local Danfoss sales company.
 Flammable hydrocarbons are not recommended. For further information please contact your local Danfoss Sales Company.
- Temperature range
 -50/+80°C (-58/+176 °F)

- Pressure
 The float valve is designed for:
 Maximum operating pressure:
 25 bar g (363 psi g).
 Strength test without float ball:
 42 bar g (609 psi g).
 Leakage test:
 25 bar g (363 psi g).
 Valves for higher pressure are available on request.

The principle of high pressure control

Introduction

In installations with one application high pressure control is an effective and cost saving way of expanding liquid from the condenser to the low pressure side.

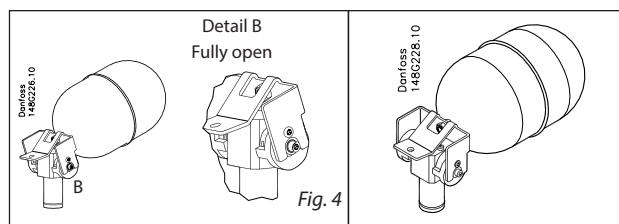
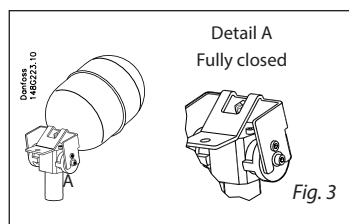
High pressure refrigerant entering the condenser will start to condense, consequently condensate will accumulate at the bottom of the condenser and in the float valve.

When capacity demands increase, the liquid level in the float valve will rise, which will cause the valve to open and the refrigerant to expand into the separator at the low pressure side.

When the valve is closed, there will still be a small by-pass over the seat, so any remaining liquid will equalize slowly to the low pressure side, for instance during an off cycle. Therefore the system will equalize automatically and the compressor can start up without excessive back pressure. The size of the bypass is predetermined and defined by geometry of the elements.

It follows from the above, that almost all the refrigerant will be accumulated on the low pressure side under normal conditions. Therefore under normal conditions no high pressure receiver is necessary when using the HFI for high pressure control.

Insert for the high pressure float valve



Computation and selection

In R 717 plants (ammonia)

On the following pages you will find tables with capacities of the float valve at various operating conditions.

Select a valve using the specific operating conditions. The chosen valve must have a capacity higher than the required capacity during nominal operation, as well as during plant start up.

In plants using other refrigerants than ammonia

The capacity of the float valve can be calculated by using the values and the equation to the right. However, the density of the refrigerant must be in the range: 500 to 700 kg/m³.

For densities outside this range please contact your local Danfoss Sales Company.

| Valve type | Nominal capacity [kW] (R 717, -10/+35°C) | Valve constant [K] |
|------------|--|--------------------|
| HFI 040 FD | 400 | 16.79 |
| HFI 050 FD | 800 | 33.58 |
| HFI 060 FD | 1200 | 50.36 |
| HFI 070 FD | 2400 | 100 |

$$\text{Mass flow } G = K \sqrt{\Delta p \times \rho} \text{ [kg/h]}$$

Δp = differential pressure [bar]

ρ = density of liquid [kg/m³]

K = valve constant (from the above table)

Computation and selection capacity tables - SI units

HFI 040 - R 717, evaporating capacity [kW]

| Condensing temp. (°C) | Evaporating temperature (°C) | | | | | | | | | | | | |
|-----------------------|------------------------------|-----|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|
| | -40 | -35 | -30 | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 |
| 50 | 475 | 480 | 480 | 475 | 475 | 475 | 470 | 460 | 455 | 445 | 430 | 415 | 395 |
| 45 | 460 | 460 | 460 | 460 | 455 | 455 | 445 | 440 | 430 | 420 | 405 | 385 | 360 |
| 40 | 440 | 440 | 440 | 440 | 435 | 430 | 425 | 415 | 405 | 390 | 375 | 350 | 325 |
| 35 | 420 | 420 | 420 | 415 | 415 | 405 | 400 | 390 | 375 | 360 | 340 | 315 | 280 |
| 30 | 400 | 400 | 400 | 395 | 390 | 385 | 375 | 360 | 345 | 325 | 300 | 270 | 230 |
| 25 | 380 | 380 | 375 | 370 | 365 | 360 | 345 | 330 | 315 | 290 | 260 | 220 | 160 |
| 20 | 360 | 355 | 355 | 350 | 340 | 330 | 315 | 300 | 280 | 250 | 210 | 155 | |
| 15 | 340 | 335 | 330 | 325 | 315 | 300 | 285 | 265 | 240 | 200 | 150 | | |
| 10 | 315 | 310 | 305 | 295 | 285 | 270 | 250 | 225 | 195 | 140 | | | |
| 5 | 290 | 285 | 280 | 270 | 255 | 240 | 215 | 185 | 135 | | | | |
| 0 | 270 | 260 | 255 | 240 | 225 | 205 | 175 | 125 | | | | | |
| -5 | 245 | 235 | 225 | 210 | 190 | 165 | 120 | | | | | | |
| -10 | 220 | 210 | 200 | 180 | 155 | 115 | | | | | | | |

HFI 050 - R 717, evaporating capacity [kW]

| Condensing temp. (°C) | Evaporating temperature (°C) | | | | | | | | | | | | |
|-----------------------|------------------------------|-----|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|
| | -40 | -35 | -30 | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 |
| 50 | 955 | 955 | 955 | 955 | 950 | 945 | 935 | 925 | 910 | 890 | 865 | 830 | 790 |
| 45 | 920 | 920 | 920 | 915 | 910 | 905 | 895 | 880 | 860 | 835 | 805 | 770 | 725 |
| 40 | 880 | 880 | 880 | 875 | 870 | 860 | 850 | 830 | 810 | 780 | 745 | 700 | 645 |
| 35 | 845 | 845 | 840 | 835 | 825 | 815 | 800 | 780 | 755 | 720 | 680 | 625 | 560 |
| 30 | 805 | 800 | 800 | 790 | 780 | 765 | 750 | 725 | 695 | 655 | 605 | 540 | 455 |
| 25 | 765 | 760 | 755 | 745 | 730 | 715 | 695 | 665 | 630 | 580 | 520 | 440 | 320 |
| 20 | 720 | 715 | 705 | 695 | 680 | 660 | 635 | 600 | 555 | 500 | 420 | 310 | |
| 15 | 675 | 670 | 660 | 645 | 630 | 605 | 570 | 530 | 480 | 405 | 295 | | |
| 10 | 630 | 625 | 610 | 595 | 570 | 545 | 505 | 455 | 385 | 285 | | | |
| 5 | 585 | 575 | 560 | 540 | 515 | 480 | 430 | 365 | 270 | | | | |
| 0 | 540 | 525 | 505 | 485 | 450 | 405 | 345 | 255 | | | | | |
| -5 | 490 | 475 | 455 | 425 | 385 | 325 | 240 | | | | | | |
| -10 | 440 | 420 | 395 | 360 | 305 | 230 | | | | | | | |

HFI 060 - R 717, evaporating capacity [kW]

| Condensing temp. (°C) | Evaporating temperature (°C) | | | | | | | | | | | | |
|-----------------------|------------------------------|------|------|------|------|------|-------------|------|------|------|------|------|------|
| | -40 | -35 | -30 | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 |
| 50 | 1430 | 1435 | 1435 | 1430 | 1425 | 1420 | 1405 | 1385 | 1365 | 1335 | 1295 | 1245 | 1190 |
| 45 | 1380 | 1380 | 1380 | 1375 | 1370 | 1360 | 1340 | 1320 | 1290 | 1255 | 1210 | 1155 | 1085 |
| 40 | 1325 | 1325 | 1320 | 1315 | 1305 | 1290 | 1270 | 1245 | 1215 | 1170 | 1120 | 1055 | 970 |
| 35 | 1265 | 1265 | 1260 | 1250 | 1240 | 1220 | 1200 | 1170 | 1130 | 1080 | 1020 | 940 | 840 |
| 30 | 1205 | 1205 | 1195 | 1185 | 1170 | 1150 | 1120 | 1085 | 1040 | 980 | 905 | 810 | 685 |
| 25 | 1145 | 1140 | 1130 | 1115 | 1100 | 1075 | 1040 | 995 | 940 | 870 | 780 | 660 | 485 |
| 20 | 1080 | 1070 | 1060 | 1045 | 1020 | 990 | 950 | 900 | 835 | 750 | 635 | 465 | |
| 15 | 1015 | 1005 | 990 | 970 | 940 | 905 | 860 | 795 | 715 | 605 | 445 | | |
| 10 | 945 | 935 | 915 | 890 | 860 | 815 | 755 | 680 | 580 | 425 | | | |
| 5 | 875 | 860 | 840 | 810 | 770 | 720 | 645 | 550 | 405 | | | | |
| 0 | 805 | 785 | 760 | 725 | 675 | 610 | 520 | 380 | | | | | |
| -5 | 735 | 710 | 680 | 635 | 575 | 490 | 360 | | | | | | |
| -10 | 660 | 635 | 595 | 540 | 460 | 340 | | | | | | | |

HFI 070 - R717, evaporating capacity [kW]

| Condensing temp. (°C) | Evaporating temperature (°C) | | | | | | | | | | | | |
|-----------------------|------------------------------|------|------|------|------|------|-------------|------|------|------|------|------|------|
| | -40 | -35 | -30 | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 |
| 50 | | | | | | | | 2775 | 2725 | 2665 | 2590 | 2495 | 2375 |
| 45 | | | | | | | | 2680 | 2640 | 2580 | 2510 | 2420 | 2310 |
| 40 | | | | | | | | 2545 | 2490 | 2425 | 2340 | 2235 | 2105 |
| 35 | | | | | | 2445 | 2400 | 2335 | 2260 | 2160 | 2035 | 1880 | 1680 |
| 30 | | | | | 2340 | 2300 | 2245 | 2170 | 2080 | 1960 | 1815 | 1625 | 1370 |
| 25 | | | | | 2195 | 2145 | 2080 | 1995 | 1885 | 1745 | 1565 | 1320 | 965 |
| 20 | | | | 2090 | 2040 | 1980 | 1900 | 1800 | 1670 | 1500 | 1265 | 930 | |
| 15 | | | | 1940 | 1885 | 1810 | 1715 | 1595 | 1435 | 1210 | 890 | | |
| 10 | | | 1835 | 1785 | 1715 | 1630 | 1515 | 1365 | 1160 | 850 | | | |
| 5 | | 1725 | 1680 | 1620 | 1540 | 1435 | 1295 | 1100 | 810 | | | | |
| 0 | | 1575 | 1520 | 1450 | 1350 | 1220 | 1040 | 765 | | | | | |
| -5 | 1470 | 1425 | 1360 | 1270 | 1150 | 980 | 725 | | | | | | |
| -10 | 1325 | 1265 | 1190 | 1080 | 920 | 685 | | | | | | | |

Computation and selection capacity tables - US units

HFI 040 - R 717, evaporating capacity [TR]

| Condensing temp. (°F) | Evaporating temperature (°F) | | | | | | | | | | | | |
|-----------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | -40 | -30 | -20 | -10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 120 | 134 | 135 | 135 | 134 | 134 | 132 | 131 | 128 | 125 | 121 | 116 | 109 | 101 |
| 110 | 129 | 129 | 129 | 128 | 127 | 126 | 123 | 121 | 117 | 112 | 106 | 98 | 87 |
| 100 | 123 | 123 | 122 | 122 | 120 | 118 | 116 | 112 | 108 | 102 | 94 | 84 | 71 |
| 90 | 117 | 117 | 116 | 115 | 113 | 111 | 107 | 103 | 98 | 91 | 81 | 69 | 50 |
| 80 | 110 | 110 | 109 | 107 | 105 | 102 | 99 | 94 | 87 | 78 | 66 | 49 | |
| 70 | 103 | 103 | 102 | 100 | 97 | 94 | 89 | 83 | 75 | 63 | 47 | | |
| 60 | 97 | 96 | 94 | 92 | 89 | 84 | 79 | 71 | 60 | 44 | | | |
| 50 | 90 | 88 | 86 | 83 | 80 | 74 | 67 | 57 | 42 | | | | |
| 40 | 82 | 81 | 78 | 75 | 70 | 63 | 54 | 40 | | | | | |
| 30 | 75 | 73 | 70 | 65 | 59 | 51 | 38 | | | | | | |
| 20 | 67 | 65 | 61 | 55 | 47 | 35 | | | | | | | |
| 10 | 59 | 56 | 51 | 44 | 33 | | | | | | | | |

HFI 050 - R 717, evaporating capacity [TR]

| Condensing temp. (°F) | Evaporating temperature (°F) | | | | | | | | | | | | |
|-----------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | -40 | -30 | -20 | -10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 120 | 268 | 269 | 269 | 269 | 267 | 265 | 261 | 256 | 250 | 242 | 231 | 218 | 201 |
| 110 | 258 | 258 | 257 | 256 | 254 | 251 | 247 | 241 | 233 | 224 | 211 | 195 | 175 |
| 100 | 246 | 246 | 245 | 243 | 241 | 237 | 232 | 224 | 215 | 204 | 189 | 169 | 143 |
| 90 | 234 | 233 | 232 | 229 | 226 | 221 | 215 | 207 | 196 | 181 | 163 | 138 | 101 |
| 80 | 221 | 220 | 218 | 215 | 211 | 205 | 197 | 187 | 174 | 156 | 132 | 97 | |
| 70 | 207 | 206 | 203 | 200 | 194 | 187 | 178 | 166 | 149 | 127 | 93 | | |
| 60 | 193 | 191 | 188 | 184 | 177 | 169 | 157 | 142 | 121 | 89 | | | |
| 50 | 179 | 176 | 172 | 167 | 159 | 149 | 134 | 114 | 84 | | | | |
| 40 | 165 | 161 | 156 | 149 | 140 | 127 | 108 | 80 | | | | | |
| 30 | 150 | 145 | 139 | 130 | 118 | 102 | 75 | | | | | | |
| 20 | 135 | 129 | 121 | 110 | 95 | 70 | | | | | | | |
| 10 | 119 | 112 | 102 | 88 | 65 | | | | | | | | |

HFI 060 - R 717, evaporating capacity [TR]

| Condensing temp. (°F) | Evaporating temperature (°F) | | | | | | | | | | | | |
|-----------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | -40 | -30 | -20 | -10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 120 | 403 | 404 | 404 | 403 | 401 | 397 | 392 | 385 | 375 | 363 | 347 | 327 | 302 |
| 110 | 386 | 387 | 386 | 384 | 381 | 377 | 370 | 362 | 350 | 335 | 317 | 293 | 262 |
| 100 | 369 | 368 | 367 | 365 | 361 | 355 | 347 | 337 | 323 | 305 | 283 | 253 | 214 |
| 90 | 350 | 350 | 348 | 344 | 339 | 332 | 322 | 310 | 293 | 272 | 244 | 207 | 151 |
| 80 | 331 | 329 | 327 | 322 | 316 | 307 | 296 | 281 | 261 | 234 | 199 | 146 | |
| 70 | 310 | 309 | 305 | 299 | 292 | 281 | 267 | 249 | 224 | 190 | 140 | | |
| 60 | 290 | 287 | 282 | 275 | 266 | 253 | 236 | 213 | 181 | 133 | | | |
| 50 | 269 | 265 | 259 | 250 | 239 | 223 | 202 | 172 | 126 | | | | |
| 40 | 247 | 242 | 234 | 224 | 209 | 190 | 162 | 120 | | | | | |
| 30 | 225 | 218 | 209 | 196 | 178 | 152 | 113 | | | | | | |
| 20 | 202 | 194 | 182 | 165 | 142 | 106 | | | | | | | |
| 10 | 178 | 168 | 153 | 132 | 98 | | | | | | | | |

HFI 070 - R717, evaporating capacity [TR]

| Condensing temp. (°F) | Evaporating temperature (°F) | | | | | | | | | | | | |
|-----------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | -40 | -30 | -20 | -10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 120 | | | | | | | 784 | 769 | 750 | 725 | 694 | 654 | 603 |
| 110 | | | | | | | 741 | 723 | 700 | 671 | 633 | 586 | 524 |
| 100 | | | | | | 710 | 695 | 673 | 646 | 611 | 566 | 507 | 428 |
| 90 | | | | | 678 | 664 | 645 | 620 | 587 | 544 | 489 | 413 | 302 |
| 80 | | | | | 632 | 615 | 592 | 561 | 521 | 469 | 397 | 292 | |
| 70 | | | | 599 | 583 | 562 | 534 | 497 | 447 | 380 | 279 | | |
| 60 | | | | 551 | 532 | 506 | 472 | 426 | 362 | 267 | | | |
| 50 | | | 517 | 500 | 477 | 446 | 403 | 343 | 253 | | | | |
| 40 | | 483 | 469 | 448 | 419 | 380 | 325 | 240 | | | | | |
| 30 | | 436 | 418 | 391 | 355 | 305 | 226 | | | | | | |
| 20 | 404 | 387 | 364 | 331 | 284 | 211 | | | | | | | |
| 10 | 357 | 336 | 307 | 263 | 195 | | | | | | | | |

**High pressure control
in refrigeration system with
condenser/evaporator**

Fig. 5 shows a water chiller with plate heat exchanger as both condenser and evaporator. HFI is flanged directly on to the condenser.

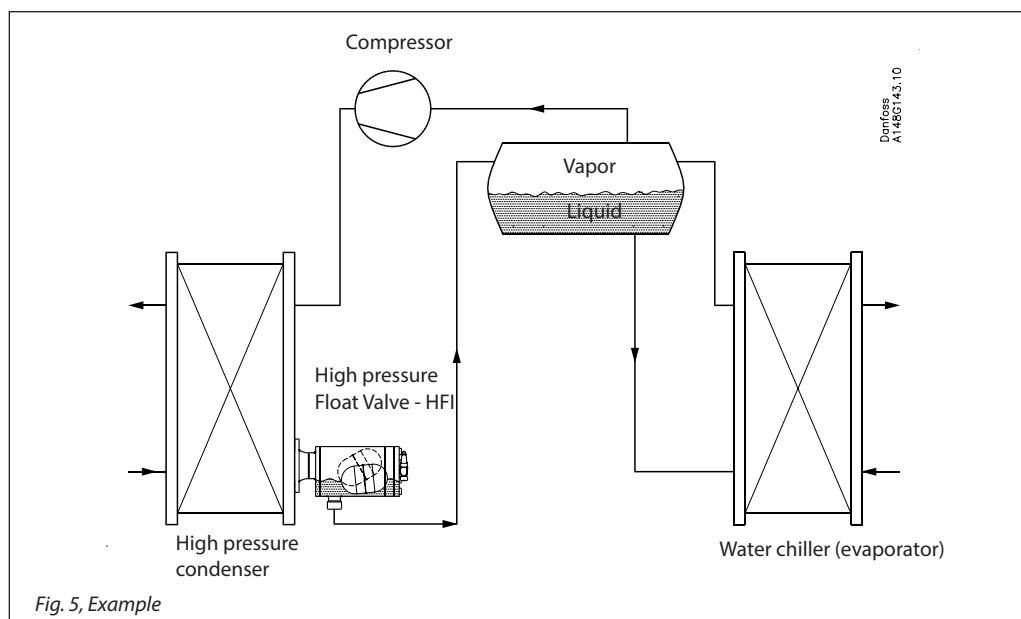


Fig. 5, Example

Material specification

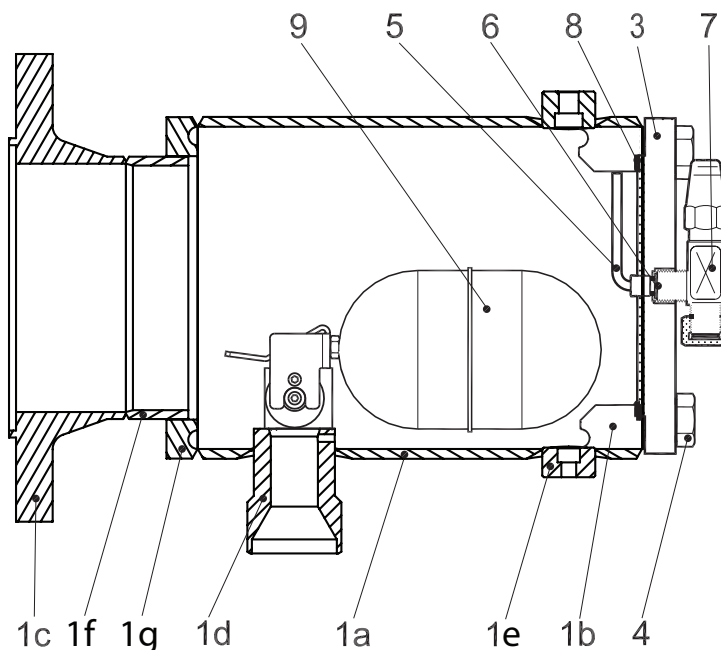


Fig. 6

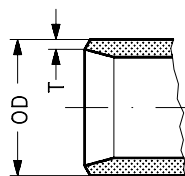
| No | Part | Material | DIN/EN | ASTM |
|----|--|---|---|--|
| 1 | Housing: a. Shell b. Flange (shell) c. Flange (inlet) d. Branch (discharge) e. External connection f. Flange (shell) g. Connecting tube | Steel Steel Steel Steel Steel Steel Steel | P215NL, EN 10216-4 P275 NL1, EN10028-3 P285QH EN 10222-4 P275 NL1, EN10028-3 P285QH EN 10222-4 P215NL, EN 10216-4 P275 NL1, EN10028-3 | Grade 1, A333, A334 Grade A , A662 LF2A350 Grade A , A662 LF2A350 Grade 1, A333, A334 Grade A , A662 |
| 3 | End cover with cylinder | Steel | P275 NL1, EN 10 028-3 | |
| 4 | Set screw | Stainless steel | A2-70 | |
| 5 | Tube | Steel | | |
| 6 | Gasket | Aluminium | | |
| 7 | Purge valve, SNV-ST ¹⁾ | | | |
| 8 | Gasket | Non asbestos | | |
| 9 | Float Ball | Steel | | |

¹⁾ for further information please see the technical brochure for SNV-ST valves.

Data sheet | Float valve, type HFI

Connections

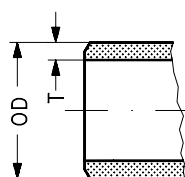
DIN - Outlet



Butt welding EN10220

| Size mm | Size in. | Outlet | | | | For use with valve type |
|---------|----------|--------|------|--------|-------|--|
| | | OD mm | T mm | OD in. | T in. | |
| 100 | 4 | 60.3 | 2.9 | 2.37 | 0.11 | HFI 040 HFI 050 HFI 060 HFI 070 |
| 150 | 6 | 60.3 | 2.9 | 2.37 | 0.11 | HFI 050 HFI 060 HFI 070 |

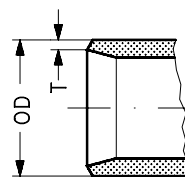
ANSI - Outlet



Butt welding ANSI B 36.10

| Size mm | Size in. | Outlet | | | | For use with valve type |
|---------|----------|--------|------|--------|-------|--|
| | | OD mm | T mm | OD in. | T in. | |
| 100 | 4 | 60.3 | 3.9 | 2.37 | 0.11 | HFI 040 HFI 050 HFI 060 HFI 070 |
| 150 | 6 | 60.3 | 3.9 | 2.37 | 0.11 | HFI 050 HFI 060 HFI 070 |

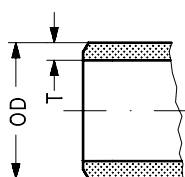
DIN - Inlet



Butt welding EN 10220

| Size mm | Size in. | Inlet | | | | For use with valve type |
|---------|----------|-------|------|--------|-------|--|
| | | OD mm | T mm | OD in. | T in. | |
| 100 | 4 | 114.3 | 3.6 | 4.50 | 0.14 | HFI 040 HFI 050 HFI 060 HFI 070 |
| 150 | 6 | 168.3 | 4.5 | 6.63 | 0.18 | HFI 050 HFI 060 HFI 070 |

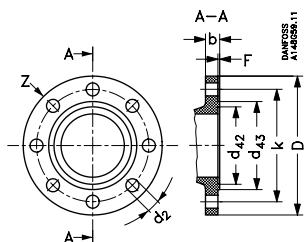
ANSI - Inlet



Butt welding ANSI B 36.10

| Size mm | Size in. | Inlet | | | | For use with valve type |
|---------|----------|-------|------|--------|-------|--|
| | | OD mm | T mm | OD in. | T in. | |
| 100 | 4 | 114.3 | 6.3 | 4.50 | 0.14 | HFI 040 HFI 050 HFI 060 HFI 070 |
| 150 | 6 | 168.3 | 7.1 | 6.63 | 0.18 | HFI 050 HFI 060 HFI 070 |

Inlet flange

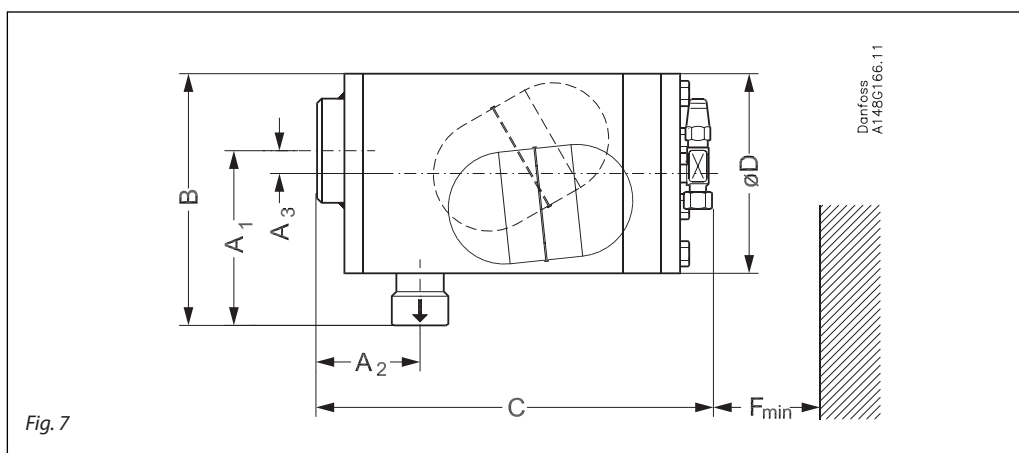


40 bar / DIN 2635 / DIN 2512-F*

| | | D | b | k | d ₄₂ | d ₄₃ | F | d ₂ | Z |
|------------------|-----|------|------|------|-----------------|-----------------|------|----------------|--------|
| Size 100 (4 in.) | mm | 235 | 24 | 190 | 129 | 149 | 4.5 | 22 | 8 pcs. |
| | in. | 9.3 | 0.94 | 7.48 | 5.08 | 5.87 | 0.18 | 0.97 | |
| Size 150 (6 in.) | mm | 300 | 28 | 250 | 183 | 203 | 4.5 | 26 | 8 pcs. |
| | in. | 11.8 | 1.10 | 9.84 | 7.20 | 7.99 | 0.18 | 1.02 | |

*Inlet flange and DIN outlet

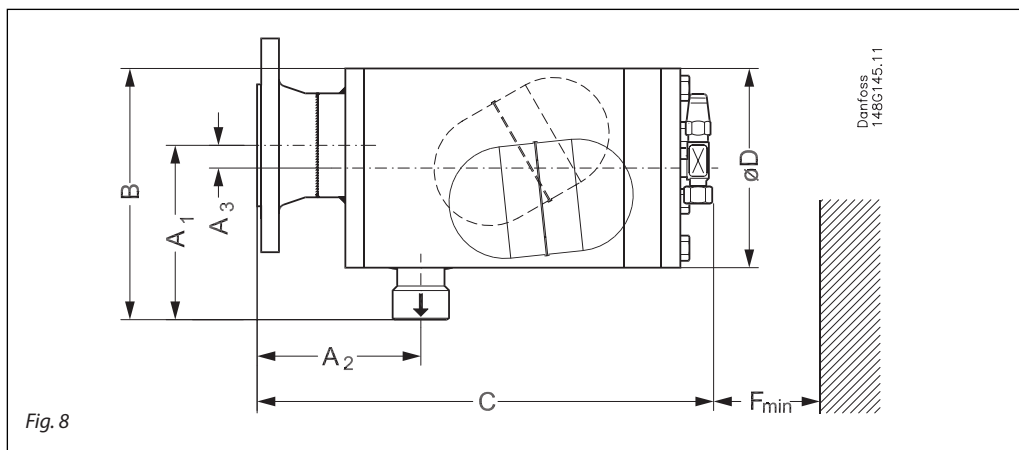
Dimensions and weights



High pressure float valve without flange (Fig. 7)

| Valve size | | A ₁ | A ₂ | A ₃ | B | C | ØD | F _{min.} | Weight |
|------------|-----|----------------|----------------|----------------|-------|-------|------|-------------------|---------|
| HFI 100 | mm | 192 | 113 | 25 | 276 | 435 | 219 | 200 | 37 kg |
| | in. | 7.56 | 4.45 | 0.98 | 10.87 | 17.13 | 8.62 | 7.87 | 81.5 lb |
| HFI 150 | mm | 167 | 113 | | 276 | 435 | 219 | 200 | 37 kg |
| | in. | 6.57 | 4.45 | | 10.87 | 17.13 | 8.62 | 7.87 | 81.5 lb |

Specified weights are approximate values only.

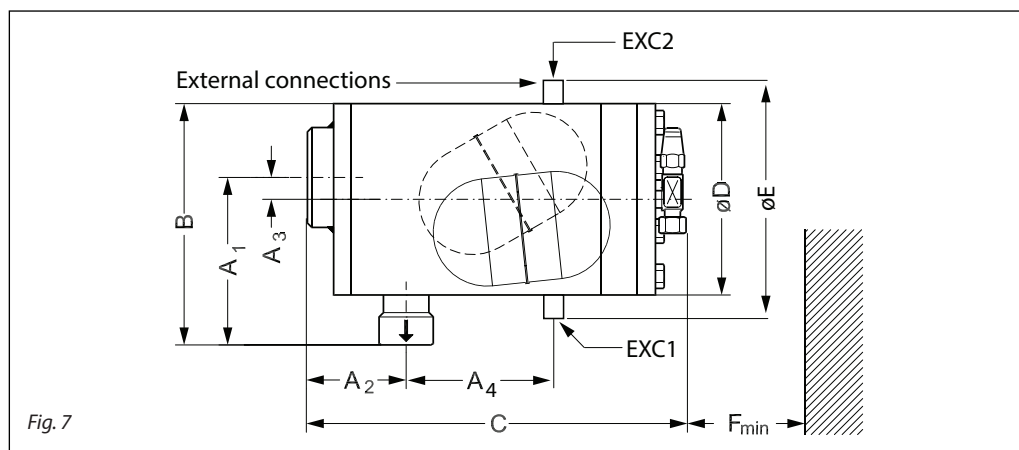


High pressure float valve with flange (Fig. 8)

| Valve size | | A ₁ | A ₂ | A ₃ | B | C | ØD | F _{min.} | Weight |
|------------|-----|----------------|----------------|----------------|-------|-------|------|-------------------|---------|
| HFI 100 | mm | 192 | 180 | 25 | 309 | 502 | 219 | 200 | 41 kg |
| | in. | 7.56 | 7.09 | 0.98 | 12.17 | 19.76 | 8.62 | 7.87 | 90.4 lb |
| HFI 150 | mm | 167 | 189 | | 317 | 511 | 219 | 200 | 41 kg |
| | in. | 6.57 | 7.44 | | 12.48 | 20.12 | 8.62 | 7.87 | 90.4 lb |

Specified weights are approximate values only.

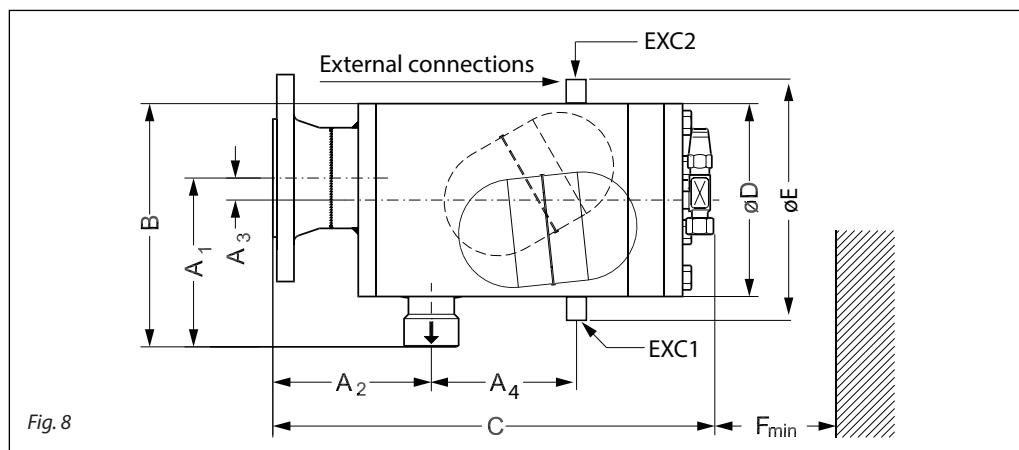
**Dimensions and weights
(HFI with external
connections)**



High pressure float valve without flange (Fig. 7)

| Valve size | | A ₁ | A ₂ | A ₃ | A ₄ | B | C | ØD | ØE | F _{min} | Weight |
|------------|-----|----------------|----------------|----------------|----------------|-------|-------|------|------|------------------|---------|
| HFI 100 | mm | 192 | 113 | 25 | 176 | 276 | 435 | 219 | 247 | 200 | 37 kg |
| | in. | 7.56 | 4.45 | 0.98 | 6.93 | 10.87 | 17.13 | 8.62 | 9.72 | 7.87 | 81.5 lb |
| HFI 150 | mm | 167 | 113 | | 176 | 276 | 435 | 219 | 247 | 200 | 37 kg |
| | in. | 6.57 | 4.45 | | 6.93 | 10.87 | 17.13 | 8.62 | 9.72 | 7.87 | 81.5 lb |

Specified weights are approximate values only.



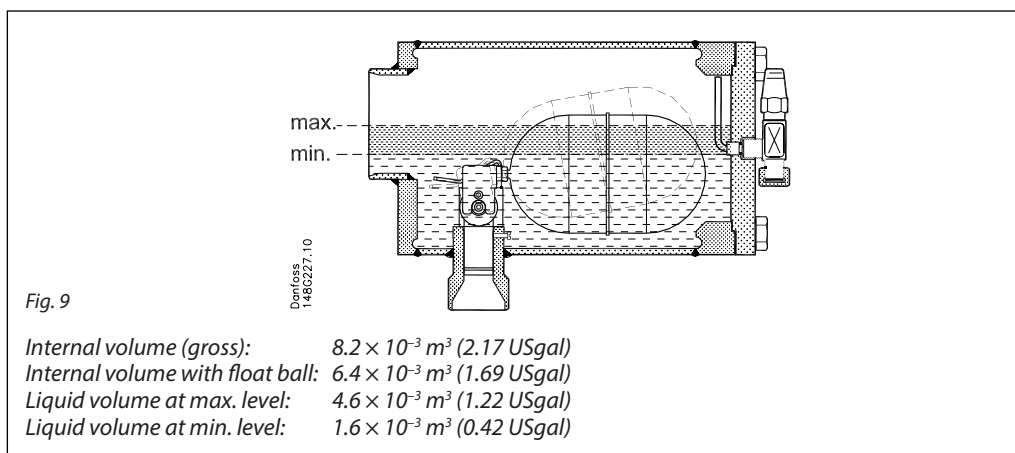
High pressure float valve with flange (Fig. 8)

| Valve size | | A ₁ | A ₂ | A ₃ | A ₄ | B | C | ØD | ØE | F _{min} | Weight |
|------------|-----|----------------|----------------|----------------|----------------|-------|-------|------|------|------------------|---------|
| HFI 100 | mm | 192 | 180 | 25 | 176 | 309 | 502 | 219 | 247 | 200 | 41 kg |
| | in. | 7.56 | 7.09 | 0.98 | 6.93 | 12.17 | 19.76 | 8.62 | 9.72 | 7.87 | 90.4 lb |
| HFI 150 | mm | 167 | 189 | | 176 | 317 | 511 | 219 | 247 | 200 | 41 kg |
| | in. | 6.57 | 7.44 | | 6.93 | 12.48 | 20.12 | 8.62 | 9.72 | 7.87 | 90.4 lb |

Specified weights are approximate values only.

| | |
|------|--------------|
| EXC1 | 3/8 - 18 NPT |
| EXC2 | 1/2 - 14 NPT |

Volumes



Ordering

The table below is used to identify the valve required.

Example: HFI 040 D 100 = 148G3092

| Type | Inlet connection size | Nozzle size | Code numbers |
|----------------|------------------------|-------------|-----------------|
| HFI 040 FD 100 | 100 (4 in.) DIN Flange | 40 | 148G3102 |
| HFI 050 FD 100 | | 50 | 148G3103 |
| HFI 060 FD 100 | | 60 | 148G3104 |
| HFI 070 FD 100 | | 70 | 148G3422 |
| HFI 050 FD 150 | 150 (6 in.) DIN Flange | 50 | 148G3105 |
| HFI 060 FD 150 | | 60 | 148G3106 |
| HFI 070 FD 150 | | 70 | 148G3423 |
| HFI 040 D 100 | 100 (4 in.) DIN BW | 40 | 148G3092 |
| HFI 050 D 100 | | 50 | 148G3093 |
| HFI 060 D 100 | | 60 | 148G3094 |
| HFI 070 D 100 | | 70 | 148G3418 |
| HFI 050 D 150 | 150 (6 in.) DIN BW | 50 | 148G3095 |
| HFI 060 D 150 | | 60 | 148G3096 |
| HFI 070 D 150 | | 70 | 148G3419 |
| HFI 040 A 100 | 100 (4 in.) ANSI BW | 40 | 148G3097 |
| HFI 050 A 100 | | 50 | 148G3098 |
| HFI 060 A 100 | | 60 | 148G3099 |
| HFI 070 A 100 | | 70 | 148G3420 |
| HFI 050 A 150 | 150 (6 in.) ANSI BW | 50 | 148G3100 |
| HFI 060 A 150 | | 60 | 148G3101 |
| HFI 070 A 150 | | 70 | 148G3421 |

HFI with 2 external connections

| Type | Inlet connection size | Nozzle size | Code numbers |
|------------------------------|------------------------|-------------|-----------------|
| HFI 040 FD 100 w. 2 ext. con | 100 (4 in.) DIN Flange | 40 | 148G3196 |
| HFI 050 FD 100 w. 2 ext. con | | 50 | 148G3727 |
| HFI 060 FD 100 w. 2 ext. con | | 60 | 148G3670 |
| HFI 070 FD 100 w. 2 ext. con | | 70 | 148G3671 |
| HFI 050 FD 150 w. 2 ext. con | 150 (6 in.) DIN Flange | 50 | 148G3762 |
| HFI 060 FD 150 w. 2 ext. con | | 60 | 148G3763 |
| HFI 070 FD 150 w. 2 ext. con | | 70 | 148G3764 |
| HFI 040 D 100 w. 2 ext. con | 100 (4 in.) DIN BW | 40 | 148G3765 |
| HFI 050 D 100 w. 2 ext. con | | 50 | 148G3704 |
| HFI 060 D 100 w. 2 ext. con | | 60 | 148G3766 |
| HFI 070 D 100 w. 2 ext. con | | 70 | 148G3720 |
| HFI 050 D 150 w. 2 ext. con | 150 (6 in.) DIN BW | 50 | 148G3767 |
| HFI 060 D 150 w. 2 ext. con | | 60 | 148G3768 |
| HFI 070 D 150 w. 2 ext. con | | 70 | 148G3769 |

FD = inlet flange DIN
 D = Butt welding DIN
 A = Butt welding ANSI

| | |
|--|-----------------|
| Insert for HFI 070 (complete insert with float ball - without float housing) | 148G3584 |
| Insert for HFI 60 (complete insert with float ball - without float housing) | 148G3663 |
| Insert for HFI 50 (complete insert with float ball - without float housing) | 148G3662 |
| Insert for HFI 40 (complete insert with float ball - without float housing) | 148G3661 |

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