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Introduction and Overview

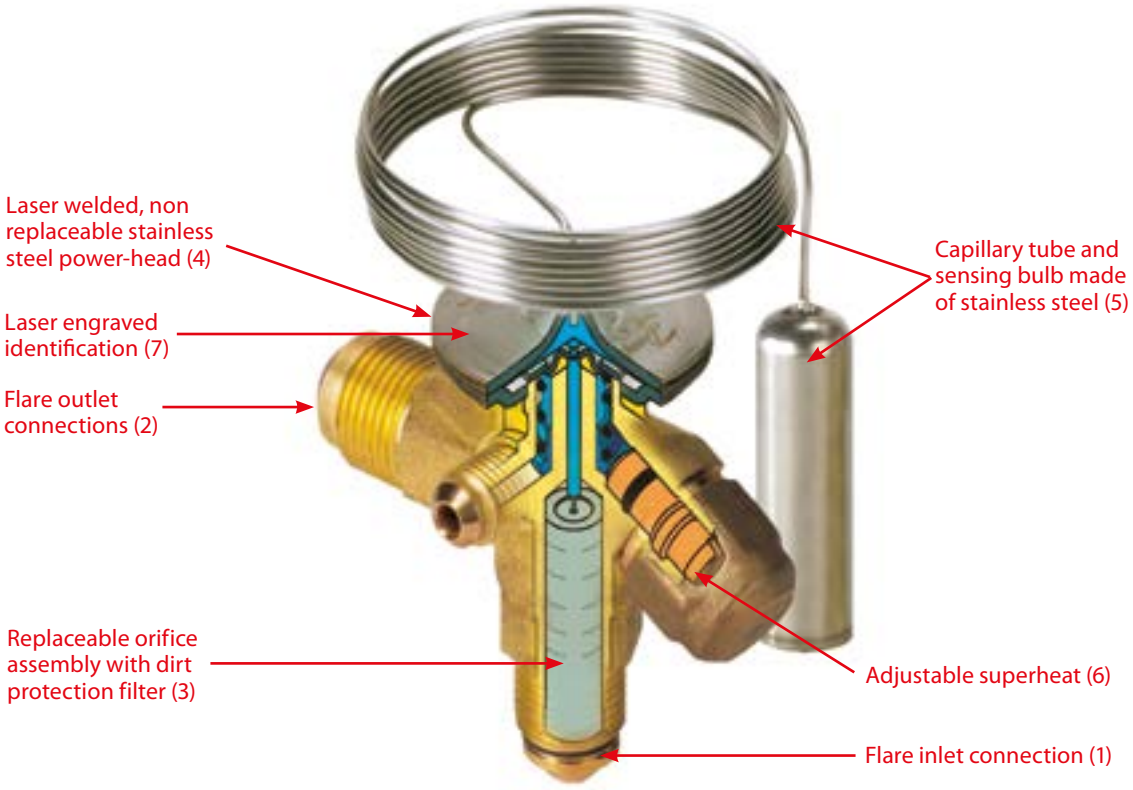
Danfoss T2/TE2 are brass body thermostatic expansion valves which feature flare inlet and outlet connections (1,2).

Several contractor friendly features are built into the valve. The replaceable orifice assembly (3) design permits easy sizing of the valve from 1/10 to 5½ tons with dirt protection filter. The valve's body includes a laser-welded, non-replaceable steel power-head (4) which significantly reduces power-head failures and preserves the diaphragm's integrity, the primary cause of a failure. The capillary tube and sensing bulb are made of stainless steel (5) as it's tougher than copper and more resistant to breakage. T2/TE2 valves feature adjustable superheat (6). Last, all identification information is laser engraved on the power-head for durable identification - no paper labels to fall off the valve (7).

Examples of typical applications include:

- Traditional refrigeration systems
- Air conditioning systems
- Transport refrigeration systems

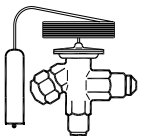
By pairing one valve body with one of eight replaceable orifices, a contractor can satisfy applications from -40 to +50°F and 0.14 to 5.88 tons capacity (capacity dependent on refrigerant).



Selection Instructions

1. Select Valve Body

Select the valve body based on refrigerant and need for internal or external equalization using the table on the next page under "Valve Body Selection."



2. Select Orifice

T2/TE2 valve capacities are based on the installed orifice.
To select the correct size orifice, use one of the two methods using the "Orifice Selection" section on the following page.

3. Assemble Valve and Install into System

1. Slide the orifice into the valve body and secure using liquid line flare nut
2. Attach evaporator inlet or distributor assembly to valve outlet flare nut
3. Tighten both flare nuts
   - Specification for inlet is 26-33 ft.-lbs
   - Specification for outlet is 37-52 ft.-lbs
4. Secure sensing bulb with enclosed bulb strap to suction line. Bulb should be located between 1:00 and 4:00 on the tube, and the strap should be tight enough that no bulb movement is possible.
5. Wrap insulation tape beginning one inch before the bulb and overlapping each wrap, finishing one inch beyond the bulb on the other end.

4. Adjust Superheat

1. Remove the cap
2. Make superheat adjustments ¼ turn at a time (¼ turn ≈ 1.75°F).
   - Turning clockwise increases superheat.
   - Turning counter-clockwise decreases superheat.
3. Reinstall the cap

Product Selection

1. Valve Body Selection

Equalization	R-22	R-404A	R-134a
Internal	**068Z3206**	**068Z3400**	**068Z3346**
External	**068Z3209**	**068Z3403**	**068Z3348**

All valves above have ⅜" x ½" flare connections and are designed for evaporator temperatures -40°F to 50°F (N charge). Other variations available, please contact your local Danfoss authorized wholesaler.

2. Orifice Selection

T2/TE2 valve capacities are based on the installed orifice. To select the correct size, use one of the two methods below:

A. System characteristics: Select the orifice using appropriate refrigerant, evaporator temperature, and system capacity.

OR

B. Nominal capacity of the installed valve: Use the nominal capacity of the originally installed valve and match with the nominal capacity in chart (3rd column from left).

Easy to carry kits for truck stock

All T2/TE2 valve bodies and orifices featured on this page and a wrench (pictured middle)	**068Z7100**
Both TUA/TUAE valve bodies and orifices and T2/TE2 valve bodies and orifices plus gaskets for TUA/TUAE and a wrench (pictured bottom)	**068U7001**

Kits are plastic cases with foam inserts, all valves and orifices and instructions for selection and installation of the valves.
Empty kits and foam available upon request.

IF EXACT CAPACITY IS NOT FOUND, USE NEXT LARGER ORIFICE

R-22			Evaporator Temperature (°F)									
Orifice Size	Danfoss Code No.	Nominal capacity of installed valve[1] (tons)	-40	-30	-20	-10	0	10	20	30	40	50
			Rated Capacity[2] (tons)									
0X	**068-2002**	0.25	0.22	0.24	0.25	0.25	0.26	0.26	0.26	0.26	0.25	0.24
00	**068-2003**	0.51	0.28	0.32	0.36	0.40	0.43	0.46	0.49	0.50	0.50	0.49
01	**068-2010**	1	0.39	0.46	0.53	0.61	0.69	0.78	0.86	0.94	0.98	0.99
02	**068-2015**	1.3	0.44	0.52	0.61	0.71	0.82	0.95	1.09	1.22	1.33	1.40
03	**068-2006**	2.3	0.74	0.88	1.03	1.20	1.39	1.60	1.83	2.06	2.25	2.37
04	**068-2007**	3.4	1.09	1.28	1.50	1.76	2.07	2.41	2.77	3.13	3.43	3.60
05	**068-2008**	4.8	1.43	1.67	1.96	2.30	2.71	3.18	3.70	4.24	4.71	4.98
06	**068-2009**	5.6	1.67	1.96	2.29	2.69	3.16	3.71	4.32	4.96	5.54	5.88
R-404A			**Evaporator Temperature (°F)**									
Orifice Size	Danfoss Code No.	Nominal capacity of installed valve[1] (tons)	-40	-30	-20	-10	0	10	20	30	40	50
			Rated Capacity[2] (tons)									
0X	**068-2002**	0.18	0.15	0.16	0.17	0.18	0.18	0.19	0.19	0.19	0.19	0.18
00	**068-2003**	0.37	0.19	0.22	0.26	0.29	0.32	0.35	0.37	0.38	0.38	0.37
01	**068-2010**	0.75	0.27	0.33	0.39	0.46	0.54	0.62	0.69	0.74	0.77	0.77
02	**068-2015**	1	0.30	0.37	0.45	0.55	0.66	0.77	0.89	1.00	1.08	1.11
03	**068-2006**	1.8	0.51	0.62	0.76	0.92	1.11	1.32	1.52	1.70	1.83	1.86
04	**068-2007**	2.8	0.74	0.90	1.11	1.36	1.65	1.98	2.32	2.65	2.89	3.01
05	**068-2008**	3.7	0.97	1.19	1.46	1.78	2.17	2.60	3.06	3.48	3.78	3.90
06	**068-2009**	4.4	1.14	1.40	1.72	2.12	2.58	3.11	3.66	4.16	4.51	4.62
R-134a			**Evaporator Temperature (°F)**									
Orifice Size	Danfoss Code No.	Nominal capacity of installed valve[1] (tons)	-40	-30	-20	-10	0	10	20	30	40	50
			Rated Capacity[2] (tons)									
0X	**068-2002**	0.19	0.14	0.15	0.16	0.17	0.18	0.19	0.19	0.19	0.19	0.19
00	**068-2003**	0.34	0.15	0.18	0.20	0.23	0.26	0.28	0.31	0.33	0.34	0.35
01	**068-2010**	0.59	0.21	0.24	0.28	0.33	0.38	0.43	0.49	0.54	0.59	0.62
02	**068-2015**	0.73	0.23	0.27	0.31	0.37	0.43	0.50	0.58	0.65	0.73	0.79
03	**068-2006**	1.2	0.39	0.45	0.53	0.62	0.72	0.84	0.97	1.10	1.22	1.33
04	**068-2007**	1.8	0.57	0.66	0.77	0.91	1.06	1.23	1.42	1.62	1.82	2.01
05	**068-2008**	2.4	0.75	0.87	1.02	1.19	1.40	1.62	1.87	2.14	2.40	2.64
06	**068-2009**	2.9	0.90	1.04	1.21	1.42	1.67	1.94	2.24	2.56	2.88	3.16

All capacity data is in accordance to ARI 750-2007.
[1] Nominal capacity based on condensing temperature of 100°F, an evaporator temperature of 40°F, liquid temperature of 98°F ahead of the valve.
[2] Capacity based on condensing temperature of 95°F and a vapor free liquid temperature of 88°F ahead of the expansion valve.
Spare parts and accessories are available on page 52.

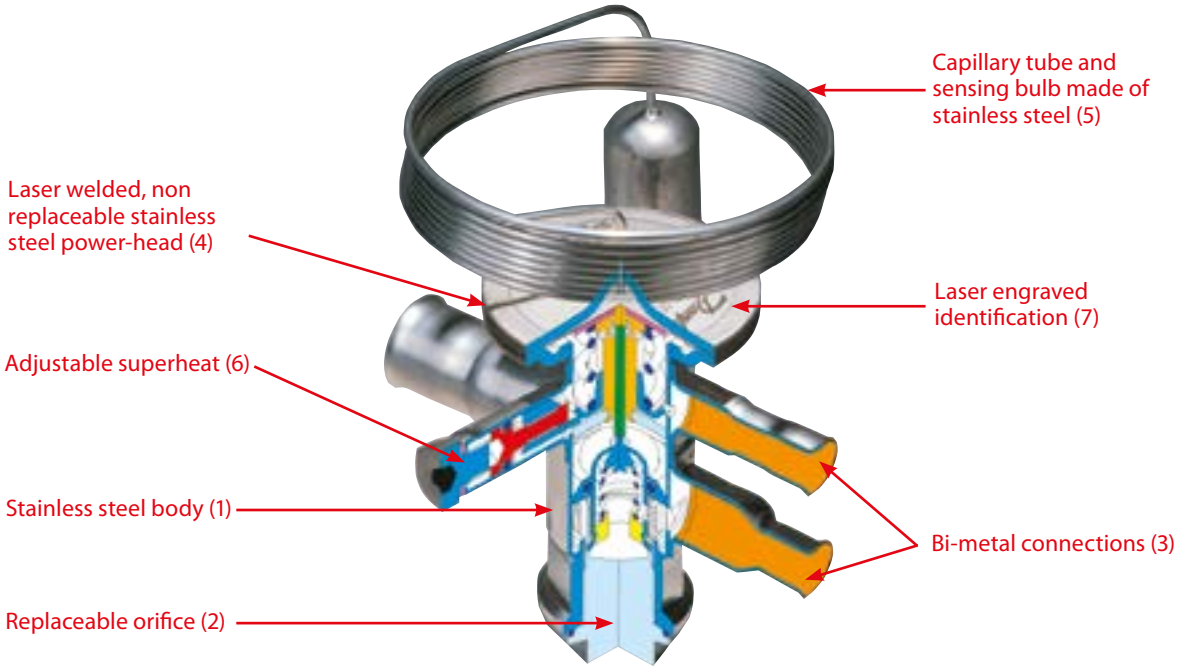
Introduction and Overview

Danfoss TUA/TUAE are stainless steel (1) thermostatic expansion valves designed for use in a wide range of applications with several contractor friendly features built-in. The replaceable orifice (2) design permits easy sizing of the valve from 1/10 to 4½ tons and allows for easy access to the screen for cleaning. Bi-metal connections (3) of stainless steel and copper allow for fast, easy and cost-effective brazing – there is no need to wet wrap the valve. The valve's body includes a laser-welded, non-replaceable stainless steel power-head (4) which significantly reduces power-head failures and preserves the diaphragm's integrity, the primary cause of a failure. The capillary tube and sensing bulb are made of stainless steel (5) as it's tougher than copper and more resistant to breakage. TUA/TUAE valves feature adjustable superheat (6). Last, all identification information is laser engraved on the power-head for durable identification (7) – no paper labels to fall off the valve.

Due to their small size, light weight and rapid installation time, TUA/TUA valves are particularly suited for new installations or when replacing a valve in a small space. Examples of typical applications include:

- Ice machines (see pages 10-11 for specific TUA for ice machines)
- Single and multiple door refrigerators and freezers
- Walk-ins
- Glass door merchandisers
- Vending machines
- Display cases
- Air conditioning systems
- Transport refrigeration

By pairing one valve body with one of ten replaceable orifices, a contractor can satisfy applications from -40 to +50°F and 0.04 to 4.44 tons capacity (capacity dependent on refrigerant).



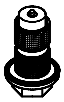
Selection Instructions

1. Select Valve Body

Select the valve body based on refrigerant and need for internal or external equalization using the table on the next page under "Valve Body Selection."

2. Select Orifice

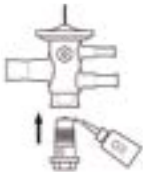
1. Select one of ten orifices using the "Orifice Selection" section on the following page.
2. Prior to installing into system, verify that only mesh portions of the screen cover the orifice inlet.



3. Assemble Valve

1. Place one drop of refrigerant oil between the screen cage and the pushpin.
2. Verify that the metal gasket is seated on the base of the orifice.
3. Tighten orifice into valve (specification is 26-30 ft.-lbs.). In addition to eliminating leaks, proper torqueing insures proper superheat control.

► Replace the metal washer/gasket that is mounted at the base of the orifice every time you change the orifice assembly or remove it from the valve body.



4. Braze Valve into System

1. Clean and insert copper tubing into appropriate connection on valve.
2. Direct torch at copper tubing until it begins to color (10-15 seconds).
3. Briefly direct torch on valve connection (2-5 seconds).
4. Apply brazing alloy until it flows.

Do not try to fill the ridge. Attempts to do so may clog the connector.

► Sweat connections using any common brazing alloy (minimum 5% silver, recommended 15% silver). As internal connector surface is copper, connections are copper to copper, and there is no need for use of high content silver solder or flux.

► ***NO WET WRAP REQUIRED***

5. Secure sensing bulb with enclosed bulb strap to suction line. Bulb should be located between 1:00 and 4:00 on the tube, and the strap should be tight enough that no bulb movement is possible.
6. Wrap insulation tape beginning one inch before the bulb and overlapping each wrap, finishing one inch beyond the bulb on the other end.

5. Adjust Superheat

1. Remove the cap with a 5⁄32" Allen wrench.
2. Make superheat adjustments ¼ turn at a time (¼ turn ≈ 1°F).
   - Turning clockwise increases superheat.
   - Turning counter-clockwise decreases superheat.
3. Reinstall the cap.

► Expansion valves on low temperature systems may require more adjustment as the factory setting is for medium temperature systems.

Scan the QR Code for a video with more information on TUA valve features and installation or visit http://bit.ly/TUAvalve

Product Selection

1. Valve Body Selection

Equalization	R-22	R-404A	R-134a
Internal	068U2235	068U2285	068U2205
External	068U2237	068U2287	068U2207

All valves above have ⅜" x ½" solder ODF connections and are designed for evaporator temperatures -40°F to 50°F (N charge). Other variations available, please contact your local Danfoss authorized wholesaler.

2. Orifice Selection

TUA/TUAE valve capacities are based on the installed orifice. To select the correct size, use one of the two methods below:

A. System characteristics: Select the orifice using appropriate refrigerant, evaporator temperature, and system capacity.

OR

B. Nominal capacity of the installed valve: Use the nominal capacity of the originally installed valve and match with the nominal capacity in chart (3rd column from left).

Easy to carry kits for truck stock

All TUA/TUAE valve bodies and orifices featured on this page, gaskets and a wrench (pictured top)	068U7000
Both TUA/TUAE valve bodies and orifices and T2/TE2 valve bodies and orifices plus gaskets for TUA/TUAE and a wrench (pictured bottom)	068U7001

Kits are plastic cases with foam inserts, all valves and orifices and instructions for selection and installation of the valves.
Empty kits and foam available upon request.

IF EXACT CAPACITY IS NOT FOUND, USE NEXT LARGER ORIFICE

R-22			Evaporator Temperature (°F)									
Orifice Size	Danfoss Code No.	Nominal capacity of installed valve[1] (tons)	-40	-30	-20	-10	0	10	20	30	40	50
			Rated Capacity[2] (tons)									
0	068U1030	0.18	0.07	0.08	0.09	0.11	0.12	0.14	0.16	0.17	0.18	0.19
1	068U1031	0.26	0.10	0.12	0.14	0.16	0.18	0.21	0.23	0.25	0.27	0.28
2	068U1032	0.31	0.11	0.13	0.15	0.18	0.21	0.24	0.27	0.30	0.32	0.34
3	068U1033	0.4	0.15	0.18	0.21	0.24	0.28	0.32	0.35	0.39	0.41	0.43
4	068U1034	0.7	0.24	0.28	0.33	0.39	0.45	0.52	0.59	0.66	0.73	0.78
5	068U1035	0.93	0.33	0.38	0.45	0.52	0.61	0.70	0.79	0.88	0.97	1.04
6	068U1036	1.47	0.51	0.59	0.70	0.81	0.94	1.08	1.23	1.38	1.52	1.64
7	068U1037	1.94	0.67	0.78	0.92	1.07	1.24	1.43	1.62	1.82	2.01	2.16
8	068U1038	2.82	0.99	1.16	1.36	1.58	1.84	2.11	2.39	2.67	2.92	3.10
9	068U1039	3.95	1.34	1.56	1.82	2.12	2.47	2.84	3.25	3.67	4.08	4.44

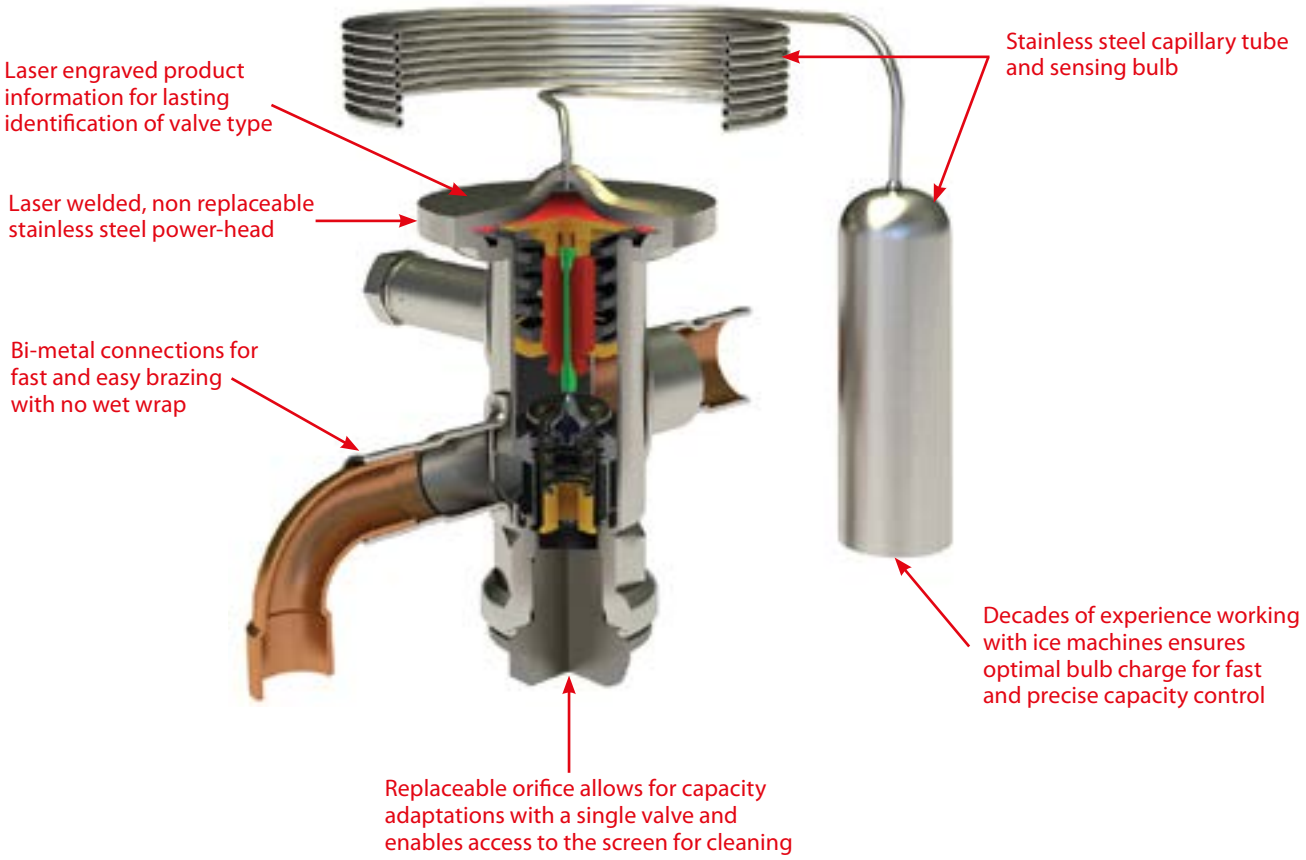
R-404A			Evaporator Temperature (°F)									
Orifice Size	Danfoss Code No.	Nominal capacity of installed valve[1] (tons)	-40	-30	-20	-10	0	10	20	30	40	50
			Rated Capacity[2] (tons)									
0	068U1030	0.14	0.05	0.06	0.07	0.08	0.10	0.11	0.12	0.14	0.15	0.15
1	068U1031	0.21	0.07	0.09	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.22
2	068U1032	0.26	0.08	0.09	0.11	0.14	0.16	0.19	0.21	0.24	0.26	0.28
3	068U1033	0.33	0.11	0.13	0.15	0.18	0.21	0.25	0.28	0.31	0.34	0.35
4	068U1034	0.59	0.17	0.20	0.25	0.30	0.35	0.41	0.48	0.55	0.61	0.66
5	068U1035	0.79	0.23	0.27	0.33	0.40	0.47	0.55	0.64	0.73	0.81	0.87
6	068U1036	1.24	0.35	0.43	0.51	0.61	0.73	0.86	1.00	1.14	1.27	1.38
7	068U1037	1.64	0.46	0.56	0.68	0.81	0.96	1.14	1.32	1.51	1.68	1.81
8	068U1038	2.36	0.68	0.83	1.00	1.19	1.42	1.67	1.93	2.19	2.42	2.57
9	068U1039	3.35	0.91	1.10	1.33	1.60	1.92	2.27	2.65	3.04	3.42	3.73

R-134a			Evaporator Temperature (°F)									
Orifice Size	Danfoss Code No.	Nominal capacity of installed valve[1] (tons)	-40	-30	-20	-10	0	10	20	30	40	50
			Rated Capacity[2] (tons)									
0	068U1030	0.12	0.04	0.05	0.06	0.06	0.08	0.09	0.10	0.11	0.12	0.13
1	068U1031	0.17	0.06	0.07	0.08	0.10	0.11	0.13	0.15	0.16	0.18	0.19
2	068U1032	0.2	0.07	0.08	0.09	0.11	0.12	0.14	0.17	0.19	0.21	0.23
3	068U1033	0.27	0.09	0.10	0.12	0.14	0.17	0.19	0.22	0.25	0.28	0.30
4	068U1034	0.45	0.14	0.16	0.19	0.23	0.27	0.31	0.36	0.41	0.47	0.52
5	068U1035	0.6	0.19	0.22	0.26	0.31	0.36	0.42	0.49	0.56	0.62	0.69
6	068U1036	0.94	0.29	0.34	0.40	0.48	0.56	0.65	0.76	0.86	0.98	1.08
7	068U1037	1.25	0.39	0.46	0.54	0.63	0.74	0.86	1.00	1.14	1.29	1.42
8	068U1038	1.83	0.58	0.68	0.80	0.94	1.10	1.28	1.48	1.69	1.90	2.07
9	068U1039	2.54	0.83	0.96	1.11	1.30	1.51	1.76	2.03	2.32	2.63	2.91

All capacity data is in accordance to ARI 750-2007.
[1] Nominal capacity based on condensing temperature of 100°F, a vapor free liquid temperature of 98°F ahead of the expansion valve and an evaporator temperature of 40°F.
[2] Capacity based on condensing temperature of 95°F and a vapor free liquid temperature of 85°F ahead of the expansion valve.
Spare parts and accessories are available on page 52.

Introduction and Overview

TUA universal thermostatic expansion valve kits for ice machines. These kits are designed with the contractor in mind to help save time and money by providing a universal valve that can easily be adapted to replace most OEM specific thermostatic expansion valves. Two kits were developed, each of which include an exchangeable orifice valve and a selection of (3) orifice sizes covering ice machines ranging from 75 to 2300 pounds of ice per day. The kits also include copper fittings (2 elbows and 1 reducer), copper bulb strap, insulation tape and instructions to allow for replacement of most OEM expansion valves originally installed.



Scan the QR Code for a video with more information on the TUA ice machine kits or visit http://bit.ly/TUAicekit

Selection Instructions

1. Determine the type of machine (cube, flake, or nugget), output of the machine in pounds of ice per 24 hours, and the number of expansion devices installed.
2. Divide the output in pounds of ice by the number of expansion valves.
3. Use the appropriate selection table below under Product Selection to determine the correct orifice size for the ice output per expansion valve.
4. Adhere to start up and performance measurements as specified in the Instructions included with the kit.

► After the new valve is installed and the machine is back in operation, it is important to verify appropriate superheat performance. Cube ice machines typically start cycles with high superheat, which decreases as a harvest cycle approaches.

A properly sized and adjusted valve will assure adequate capacity during all phases of the freeze cycle and positive superheat through the cycle. As the valve nears the end of the freeze cycle it is imperative that you accurately measure the evaporator superheat.

1. Inspect the ice for sufficient production.
2. Inspect the suction line just before the compressor for any frost that could indicate liquid flooding.
3. Measure superheat at the end of the freeze cycle.
4. If superheat is between 10°F and 18°F, ice is forming appropriately, and there is no sign of liquid flooding, the installation is complete.
5. If superheat is below 10°F, increase superheat.
6. If superheat is above 18°F, decrease superheat.
7. If after adjusting superheat you still see too low superheat or liquid flooding, please install the next smaller orifice and repeat this process.
8. If after adjusting superheat you still see too high superheat or insufficient ice formation, please install the next larger orifice and repeat this process.

If superheat adjustment is necessary, follow these steps:

1. Remove the cap with a 5⁄32″ Allen wrench.
2. Make superheat adjustments ¼ turn at a time (¼ turn ≈ 1°F).
   - Turning clockwise increases superheat.
   - Turning counter-clockwise decreases superheat.
3. Reinstall the cap.

Product Selection

Expansion valve kit for small ice machines

Danfoss Code No. 068U4900[1]		
Cuber	**Flaker/Nugget**	
Nameplate lbs. of ice/24 hrs per valve		Estimated orifice size
75 to 150	75 to 200	1
151 to 350	201 to 500	3
351 to 600	501 to 950	5

Valve in kit above has straightway ¼″ x ⅜″ ODF connections.

Expansion valve kit for large ice machines

Danfoss Code No. 068U4901[1]		
Cuber	**Flaker/Nugget**	
Nameplate lbs. of ice/24 hrs per valve		Estimated orifice size
351 to 600	501 to 950	5
601 to 1200	951 to 1650	7
1201 to 1800	1651 to 2300	8

Valve in kit above has straightway ⅜″ x ½″ ODF connections.

[1] Ice machine kits contain valve, (3) orifices in corresponding tables, (2) elbow fittings, (1) reducer, copper bulb strap, insulation tape and instructions.
Spare parts and accessories are available on page 52.

Introduction and Overview

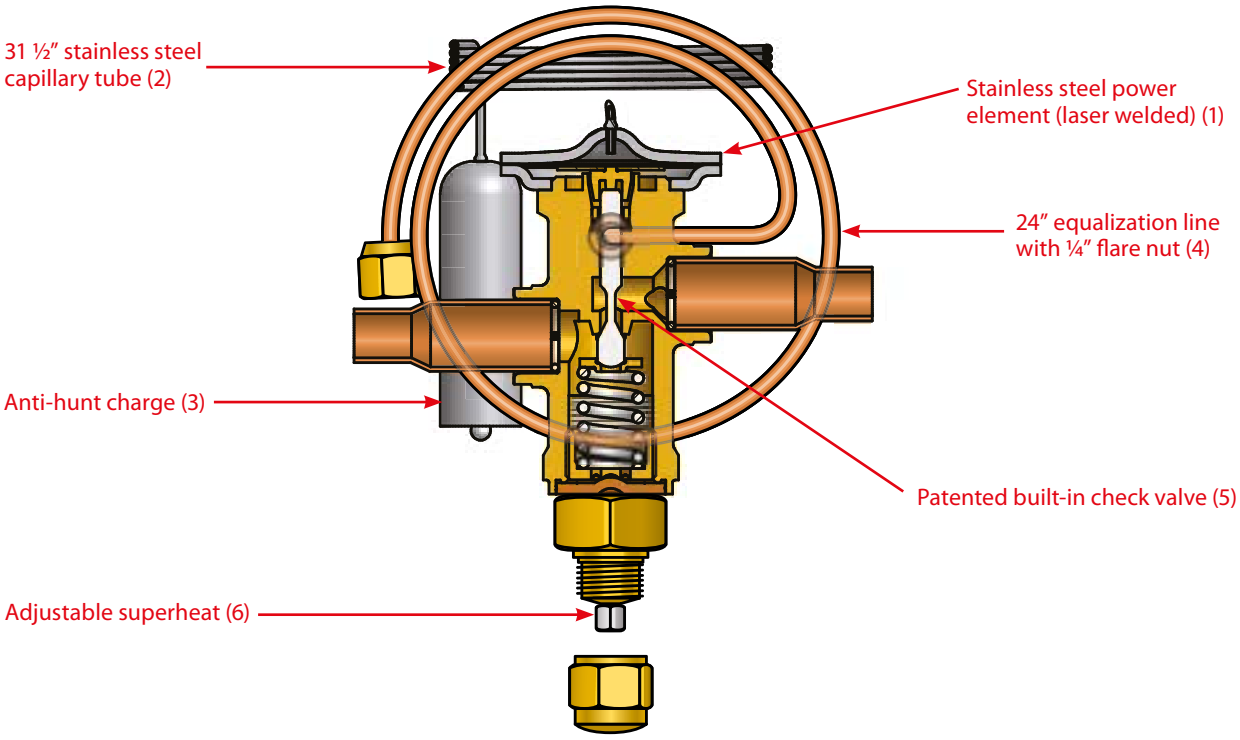
Building on Danfoss' leading OEM position, Danfoss offers the Universal TR6 kit for aftermarket installations.

These kits are ideal for use in installation such as:

- Residential air conditioning systems
- Split systems
- Roof top units
- Heat pumps
- Light commercial air conditioning systems
- Chillers

The hermetic tight design meets environmental demands for today and the future. The TR6 valves are available for R-22 and R-410A systems. The TR6 design incorporates a hot-pressed brass body with the entire laser-welded power element (1), including the 31 ½" capillary tube (2) and sensing bulb with anti-hunt charge (3) which is fabricated from stainless steel. The valves are supplied standard with straightway ⅜" x ⅜" ODF connections, fixed orifice and with 24" external equalization line with ¼" flare nut (4). The aftermarket versions are delivered with internal check valve (5) but valve does not meter in both directions. Also , an external superheat adjustment spindle (6) is available for field retrofit. For R-22 valves, 1 turn is approximately 1.8°F and for R-410A valves, 1 turn is approximately 1.1°F. Turn spindle clockwise to increase superheat, counterclockwise to decrease superheat.

All valves are of a balanced port design which reduces the influence from varying condensing pressures. The TR6 valves listed on the next page are delivered with Aeroquip and Chatleff fittings for evaporator connections, insulating tape, a bulb strap and instructions for easy installation in the field.



Product Selection

Select valve using system capacity and refrigerant.

Refrigerant	System Capacity (tons)	Solder ODF connection (in.)	Temperature Range (°F)	Danfoss Code No.[1]
R-410A	1½ - 3	⅜ x ⅜	14 to 59	**067L5955**
	3½ - 4			**067L5956**
	4½- 5			**067L5957**
R-22	1½ - 2			**067L5856**
	2½ - 3			**067L5857**
	3½ - 4			**067L5858**
	5 - 6			**067L5859**

[1] The valve kits listed above are standard aftermarket valves and are built with straightway connections, internal check valve, 24" equalization line with ¼" flare nut, fixed orifice and adjustable superheat spindle.
These kits are supplied with the valve, Aeroquip fitting, Chatleff fitting, insulation tape, bulb strap and instructions.

Spare parts and accessories are available on page 52.

Scan the QR Code for a video with more information on TR6 valve features and installation or visit http://bit.ly/TR6valve

Easy to carry kits for truck stock

All (3) R-410A TR6 valve kits (pictured left)	**067L7000**
All (4) R-22 TR6 valve kits (pictured right)	**067L7001**

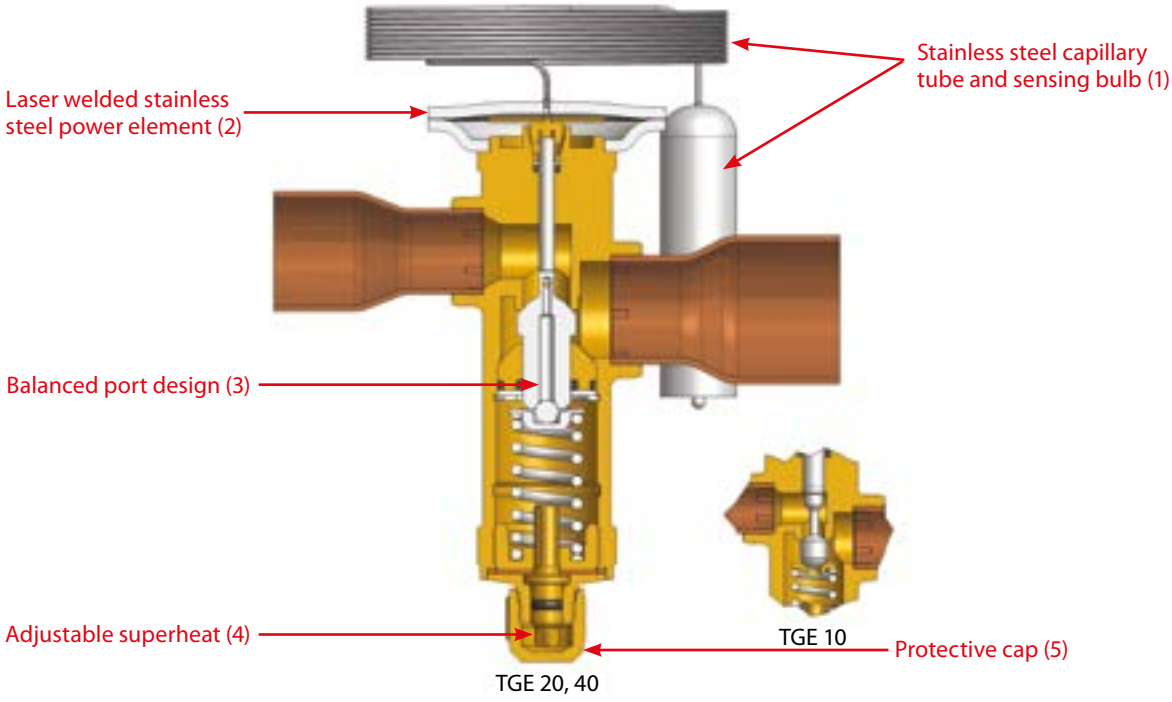
Introduction and Overview

TGE is a series of thermostatic expansion valves for R-22/R-407C, R-134a, R-404A and R-410A with fixed orifice. The hermetic tight design meets the environmental demands for today and future in a wide range of applications that include:

- Commercial air conditioning systems
- Heat pumps
- Chillers
- Transport refrigeration
- Other refrigeration systems

Features and specifications include:

- Stainless steel capillary tube and sensing bulb (1) for superior strength and durability.
- Laser welded stainless steel power element for superior joint strength and operational lifetime (2)
- Balanced port design (3) prevents changes in pressure drop across valve from influencing operation.
- Easy adjustment of superheat (4) and protective cap (5).
- R-22 / R-407C and R-410A models designed for evaporator temperatures -22°F to 60°F feature Danfoss' MAH (MOP Anti-Hunt) charge which reduces valve hunting during evaporator load changes in air conditioning applications.
- R-134a, R-404A and R-507 models designed for evaporator temperatures -40°F to 50°F (N charge).
- Designed for bi-flow operations to meet the needs of various applications.
- Maximum working pressure: 667 psig



Product Selection

Danfoss Type	Competitor Mode Nos.		Nomimal capacity (tons)[3]	Solder ODF connection (in.)	Danfoss Code No.
	R-22, MAH charge[1]	R-407C, MAH charge[1]			
TGEX 10	SVE-5, EVRE-5	HFES-5H	6	½ x ⅝	**067N9403**
TGEX 10			6	½ x ⅞	**067N9404**
TGEX 10	SVE-6, EVRE-6		7½	⅝ x ⅞	**067N9406**
TGEX 10			7½	⅝ x 1⅛	**067N9483**
TGEX 10	SVE-8, SVE-10, EBSVE 8, EVRE 8, EVRE 10	HFES-8H, HFES-10H, TRAE-10H	11	⅝ x ⅞	**067N9407**
TGEX 20	EBSVE 11, EVRE 12		12	⅝ x ⅞	**067N9409**
TGEX 20	EBSVE15, OVE 15	HFES-15H, TRAE-15H	15	⅝ x 1⅛	**067N9411**
TGEX 20			15	⅞ x 1⅛	**067N9412**
TGEX 20			18	⅞ x 1⅛	**067N9413**
TGEX 40	EBSVE 20, OVE 20	HFES-20H, TRAE 20H	26	⅞ x 1⅜	**067N9415**
TGEX 40	OVE 30	TRAE 30H	30	1⅛ x 1⅜	**067N9418**
TGEX 40	OVE 40	TRAE 40H	38	1⅛ x 1⅜	**067N9419**
	R-410A, MAH charge[1]				
TGEL 10	ERZE-8		9	⅝ x ⅞	**067N9206**
TGEL 10	ERZE-12.5	TFES-12Z	13	⅝ x ⅞	**067N9207**
TGEL 20	ERZE-15	TFES-16Z	15	⅝ x ⅞	**067N9209**
TGEL 20			15	⅝ x 1⅛	**067N9210**
TGEL 20	OZE-20		23	⅞ x 1⅛	**067N9213**
TGEL 20			23	1⅛ x 1⅛	**067N9284**
TGEL 40	OZE-25		31	⅞ x 1⅛	**067N9285**
TGEL 40			31	⅞ x 1⅜	**067N9215**
TGEL 40	OZE-35		35	1⅛ x 1⅜	**067N9218**
TGEL 40			46	1⅛ x 1⅜	**067N9219**
	R-134a, N charge[2]				
TGEN 10	SJE-5, SJE-6, EBSJE-5	HFES-6M	7	⅝ x 1⅛	**067N5158**
TGEN 20	EBSJE-7	HFES-7.5M	8	⅝ x ⅞	**067N5159**
TGEN 20	EBSJE-12, OJE-12	HFES-11M	12	⅞ x 1⅛	**067N5163**
TGEN 40	OJE-16	HFES-14M, TRAE-13M, TRAE-14M	17	1⅛ x 1⅛	**067N5254**
TGEN 40			20	1⅛ x 1⅛	**067N5255**
TGEN 40	OJE-23	TRAE-22M	25	1⅛ x 1⅜	**067N5169**
	R-404A, N charge[2]	R-507A, N charge[2]			
TGES 10	SSE-3	HFES-3.5S	4	½ x ⅞	**067N6151**
TGES 10	SSE-4	HFES-5S	5	½ x ⅞	**067N6166**
TGES 10			5	⅝ x ⅞	**067N6150**
TGES 10	SSE-6, SSE-7, EBSSE-6	HFES-7S	7½	⅝ x ⅞	**067N6154**
TGES 20	EBSSE-7.5	TRAE-8S	9	⅝ x ⅞	**067N6158**
TGES 20	EBSSE-10, OSE-9	HFES-10S	11	⅝ x ⅞	**067N6188**
TGES 20			11	⅝ x 1⅛	**067N6155**
TGES 20			11	⅞ x 1⅛	**067N6181**
TGES 20	EBSSE-13, OSE-12	HFES-13S, TRAE-12S	13	⅞ x 1⅛	**067N6162**
TGES 20	OSE-21	TRAE-20S	21	1⅛ x 1⅜	**067N6186**

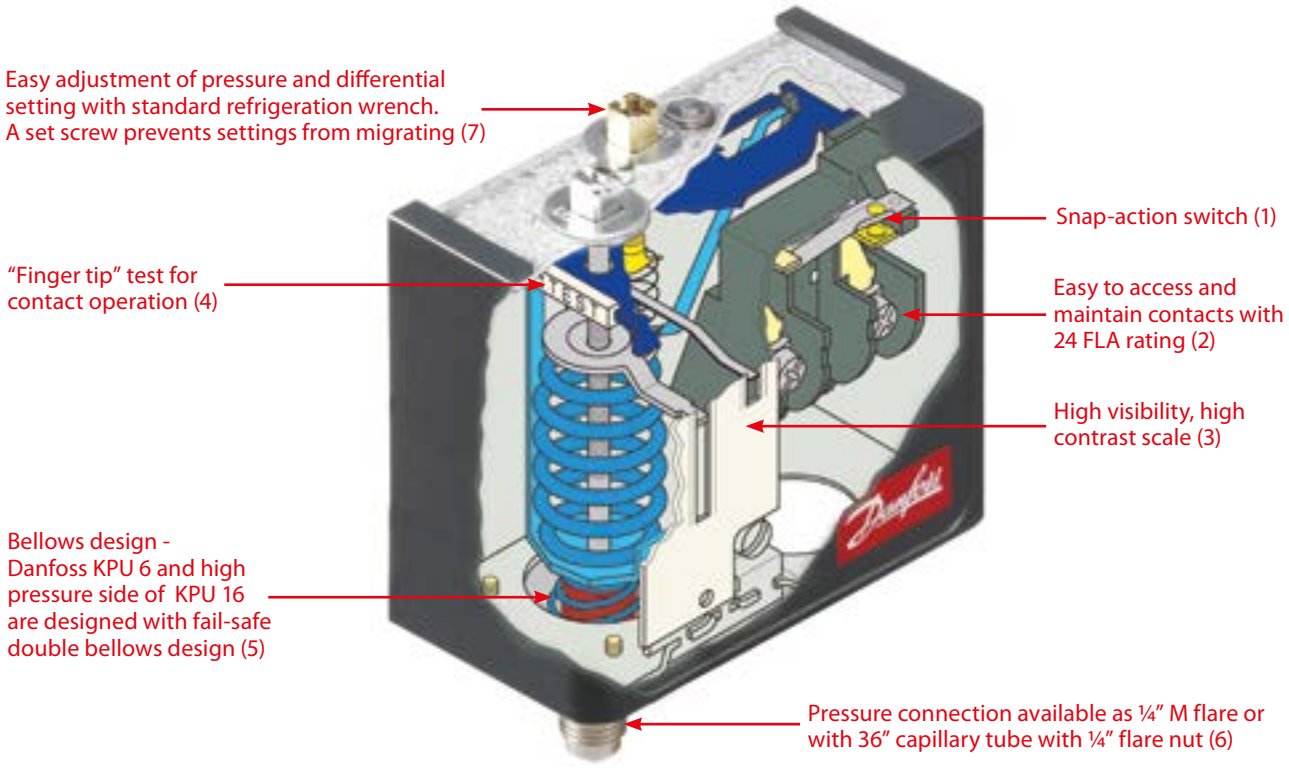
[1] MAH charge: -22°F to 60°F, Maximum operating temperature = 300°F
[2] N charge: -40°F to 50°F, Maximum operating temperature = 210°F
[3] Nominal capacity based on ARI standard: Evaporating temperature = 40°F, Liquid temperature = 98°F, Condensing temperature = 100°F
Spare parts and accessories are available on page 52.

Introduction and Overview

KPU pressure controls are designed for use in refrigeration and air-conditioning systems to protect the systems from excessively low suction pressure or too high discharge pressure. They can also be applied to start and stop compressors and the fans of air-cooled condensers. KPU pressure controls, in single and dual versions cover a comprehensive range of applications and are designed for use with fluorinated and non-aggressive refrigerants. Most KPU pressure controls can be used on R-410A systems.

Danfoss KPU pressure controls are specifically designed for the North American aftermarket. These products are designed with a universal bolt pattern, snap-action switch (1), easy to access and maintain contacts with 24 FLA rating (2), high visibility, high contrast scale (3), "finger tip" test for contact operation (4), easy access wiring. Danfoss KPU 6 and high pressure side of KPU 16 are designed with fail-safe double bellows design (5)– assuring no loss of refrigerant even if a bellows ruptures. KPU pressure controls function as easy and direct replacements for most competitor controls. Other features include:

- Pressure connection available as ¼" M flare or with 36" capillary tube with ¼" flare nut (6)
- Easy adjustment of pressure and differential setting with standard refrigeration wrench. A set screw prevents settings from migrating (7)
- Automatic, manual or convertible reset versions available



Product Selection

Low Pressure, High Pressure and Fan Cycling Controls

Pressure	Danfoss Type	Reset	Contact system	Range (in. Hg / psig)	Differential (psig)	Maximum Working Pressure (psig)	Competitor Part No.	Danfoss Code No.	
								¼" M flare	36" capillary tubes with ¼" flare nuts
Low	KPU 1	Automatic	SPDT	6 in. to 108	10.2 to 58	250	O10-1483	**060-5231**	**060-5233**
Low	KPU 2	Automatic	SPST (NO)	6 in. to 73	6 to 30	250	O10-1402	**060-5237**	**060-5235**
Low	KPU 2	Automatic	SPDT	6 in. to 73	6 to 30	250		**060-5239**	**060-5240**
Low	KPU 1B	Manual	SPDT	28 in. to 100	10.2	250	P70AB12 P70AB2	**060-5232**	**060-5234**
Fan cycling	KPU 5	Automatic	SPST (NO)	100 to 465	26.1 to 87	510	O10-2054 P70AA118	**060-5241**	**060-5242**
High	KPU 6W[2]	Automatic	SPDT	100 to 600	58 to 145	675	O16-108	**060-5243**	**060-5245**
High	KPU 6B[2]	Manual	SPDT	100 to 600	60	675		**060-5244**	**060-5246**

Dual Pressure Controls

Danfoss Type	Low pressure side		High pressure side		Reset		Contact system (LP / HP)	Maximum Working Pressure (low / high side) (psig)	Competitor Part No.[1]	Danfoss Code No.	
	Range (in. Hg / psig)	Differential (psig)	Range (psig)	Differential (psig)	Low pressure side	High pressure side				¼" M flare	36" capillary tubes with ¼" flare nuts
KPU 15	6 in. to 108	10 to 60	100 to 465	60	Automatic	Automatic	SPST (NO / NC)	250 / 510	012-1549	**060-5247**	**060-5248**
KPU 15B	6 in. to 108	10 to 60	100 to 465	60	Automatic	Manual	SPST (NO / NC)	250 / 510	P170LB1 P70LB1 P70MA1	**060-5249**	**060-5250**
KPU 16B[2]	6 in. to 108	10 to 60	100 to 600	60	Convertible[3]	Convertible[3]	SPDT / SPST (NO)	250 / 675	O12-4834	**060-5253**	**060-5254**

[1] Competitor Part No. equipped with capillary tube for all but P170LB1 which has flare connections.
[2] KPU 6 and high pressure side of KPU 16 are designed with fail-safe double bellows.
[3] Convertible reset controls can be adjusted for either automatic or manual reset.
All controls are supplied with universal mounting bracket and mounting screws.
Ambient temperature: -40° to 122°F (175°F for maximum 2 hours)
KPU 1, 2, 6, 16 suitable for all HFC refrigerants, including R-410A.
See page 52 for capillary tube (Code No. 060-017166) to connect to controls with ¼" male flare connections (pictured below).

Technical Data

Contact Load

	120/240 VAC
Alternating Current	
Motor Full Load Amps (FLA)	24
Locked Rotor Amps (LRA)	144
Direct Current	240 V DC: 12W pilot duty

Introduction and Overview

Danfoss KPU temperature controls are used for temperature regulation in refrigeration, air conditioning, ventilating and heating systems.

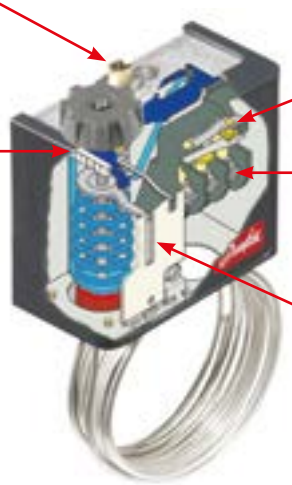
These temperature controls are specifically designed for the North American aftermarket and function as easy and direct replacements for most competitor controls.

The KPU 60/70 temperature controls feature snap-action switches, high visibility and contrast scales, “finger tip” tests, and easy adjustments using a standard refrigeration wrench.

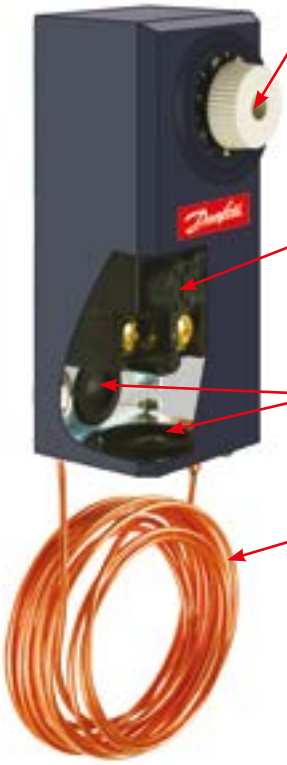
The KPU 19 temperature controls are designed for easy installation and service. They feature bottom and rear knockouts, differential adjustment dial, a tamper-resistant design, and a robust thermoplastic housing.

KPU 60/70

Easy adjustment of temperature setting with hand knob (all but models with manual reset).
Differential setting adjusted with standard refrigeration wrench.
A set screw prevents settings from migrating.



KPU 19



Product Selection

	Bulb Type	Range (°F)	Contact/ Reset	Capillary tube length (in.)	Differential		Maximum bulb temperature (°F)	Competitor Part No.	Danfoss type	Danfoss Code No.
					at lowest temp. setting	at highest temp. setting				
KPU 60/70 Series 	Straight capillary tube	-20 to 60	SPDT/Auto	80	10 to 40	2.5 to 13	250	O10-1416 O10-1010 O16-111 O10-1419	KPU 61[1]	**060L5201**
	Remote Air Coil	-20 to 60	SPDT/Auto	80	8 to 40	2.5 to 13	250	O10-1408 O10-1409 O10-1473 O16-104 O10-1410		**060L5203**
	Room Sensor	-20 to 60	SPDT/Auto	Room Sensor	10 to 40	2.5 to 13	250	O10-1072 O10-1418 O16-594 O60-101	KPU62[1]	**060L5206**
		25 to 95	SPDT/Auto	Room Sensor	8 to 45	3 to 13	250	O10-1802 016-595 O10-301 O16-165	KPU 68[1]	**060L5215**
	Remote Bulb	-15 to 60	SPDT/Auto	80	6.5 to 32	5 to 50	175	O60-100 O60-120	KPU 73[2]	**060L5208**
		25 to 70	SPDT/Auto	80	5.5 to 18	4 to 16	175		KPU 71[2]	**060L5218**
		60 to 140	SPDT/Auto	80	6 to 18	6.3 to 18	265	O60-200 A19AAF-12C A19AAB-4C A19ABB-2C A19ABB-7C	KPU 77[2]	**060L5223**

[1] Bulb must be installed in colder position than thermostat housing and capillary tube.
[2] Temperature variations in excess of 70°F between sensing bulb, housing, and capillary tube will influence scale accuracy.

Contact Load	Resistive Load		24A/120V a.c. 24A/240V a.c.
	Inductive Load	Full Load	24A/120V a.c. 24A/240V a.c.
		Locked rotor	144A/120V a.c. 144A/240V a.c.
	Pilot Duty		12W/240V d.c.

	Bulb Type	Range (°F)	Contact/ Reset	Capillary tube length (in.)	Differential at lowest temperature setting	Maximum bulb temperature (°F)	Competitor Part No.	Danfoss type	Danfoss Code No.
KPU 19 Series 	Remote bulb	-30 to 80	SPDT/Auto	120	3.6 to 12.6	140	A19ABC-24C A19ABC-37C A19ABC-74C A19AAC-4C A19AAF-20C	KPU 19	**060L2150**[1]
		-30 to 80	SPST/Auto	80	3.6 to 12.6	140	A19AAD-5C A19ABA-40C A19AAD-12C		**060L2151**[1]
	Room sensor	-30 to 80	SPDT/Auto	Room sensor	3.6 to 12.6	140	A19BBC-2C A19BAB-3C A19BAC-1C A19BAF1C		**060L2152**

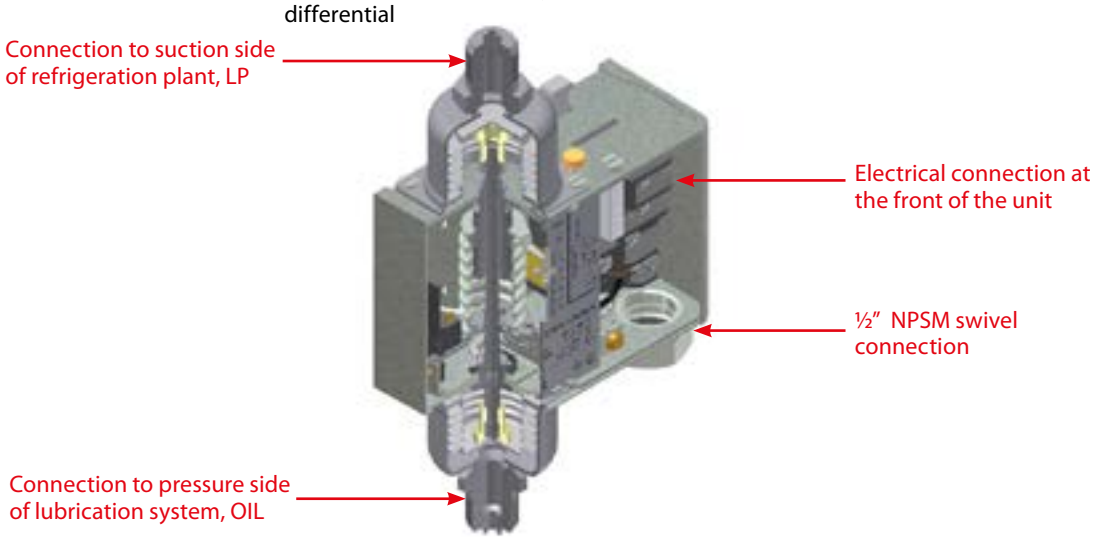
[1] As 060L2150 is SPDT, 060L2150 can replace competitor parts crossed to both 060L2150 and 060L2151.

Contact Load	Resistive Load		0.5~16A/120V a.c. 0.5~8A/240V a.c.
	Inductive Load	Full Load	0.5~16A/120V a.c. 0.5~8A/240V a.c.
		Locked rotor	96A/120V a.c. 48A/240V a.c.
	Pilot Duty		125VA/240V a.c.

Introduction and Overview

MP 54 and MP 55 oil differential pressure controls are used to protect refrigeration compressors against low oil pressure. These controls are compatible with HCFC and non-flammable HFC refrigerants. These controls feature:

- Reliable, long life stainless steel bellows
- Sturdy metal cover and universal mounting hole patterns
- Integral ½" NPSM swivel connection allows direct attachment of ½" male pipe thread connector
- Simple manual trip, electrical test function eliminates need of tools and test "jumper" wires
- Suitable for both alternating and direct current (AC and DC)
- Versions available with adjustable or fixed differential



Product Selection

Danfoss Type	Control differential Δp (psig)	Regulation range LP side	Time relay delay time (seconds)	Competitor Part Nos.	Danfoss Code No.	Competitor Part Nos.	Danfoss Code No.
				¼" M flare		36" capillary tubes with ¼" flare nuts	
MP 54	6	29 inHg to 175 psi	45	P145NCA/B-82C	**060B200866**	P45NCA-82C 3321-009	**060B205066**
	9	29 inHg to 175 psi	90	3321-001	**060B200266**		
	9	29 inHg to 175 psi	120	P145NCA/B-12C P31-5827 3321-001	**060B200366**[2]	P45NCA-12C P30-5826 3321-010	**060B205366**[2]
MP 55	4.3 to 65	29 inHg to 175 psi	45			P288AA-18/2C P30-3601 3321-014/5[3]	**060B205466**
	4.3 to 65	29 inHg to 175 psi	60	P128AA-2C	**060B201266**[1]		
	4.3 to 65	29 inHg to 175 psi	120	P128AA-17C	**060B200766**	P28AA-17C P28NA-5C P30-3801 3321-014/5[3]	**060B205766**

[1] With glow lamp that remains on during normal operation of compressor.
Note: When time delay is energized which also means that min. permissible oil pressure (differential Δp) is reached, light goes out.
[2] Three-wire hook-up with jumper that is provided in the box with control.
[3] The 3321 series controls feature adjustable delay and fixed differential. The differential for 3321-014 controls is set at 15 psig and 3321-015 is at 30 psig. Select control with appropriate delay time.
Capillary tube (Code No. 060-017166) is available in the Spare Parts and Accessories section on page 52.

Introduction and Overview

Danfoss offers a complete and flexible range of solenoid valves for use in refrigeration and A/C systems. EVR solenoid valves are direct or servo-operated solenoid valves for liquid, suction and hot gas lines. They are suitable for all refrigeration, freezing and air conditioning applications and are compatible with fluorinated refrigerants. Versions for high-pressure refrigerants are available by contacting Danfoss. The valves can be delivered as normally open or closed as well as with or without manual operation. Additionally, they have the following features:

- Wide range of coils for AC and DC voltages
- Temperature range from -40° to 220°F
- Flare connections up to 5/8"
- Solder connections up to 2 1/8"
- Solder versions have extended connections; no need to dismantle valve when soldering

Product Selection

Danfoss Type	Rated capacity (liquid tons)			Solder ODF Connection (in.)	Port size (in.)	Maximum Working Pressure (psig)	Danfoss Code No.[1]	
	R-22 / R-407C	R-134a	R-404A / R-507A				with manual stem	without manual stem
EVR 3	2.03	1.55	1.4	1/4	1/8	655		**032F7105**
EVR 3	2.03	1.55	1.4	3/8	1/8	655		**032F1157**
EVR 6	5.83	4.43	4.01	3/8	15/64	655	**032F7116**	**032F7115**
EVR 6	5.83	4.43	4.01	1/2	15/64	655	**032F7144**	**032F1162**
EVR 8	8.01	6.09	5.52	1/2	5/16	655	**032F7148**	**032F7121**
EVR 10	13.8	10.5	9.53	5/8	3/8	500	**032F7149**	**032F1168**
EVR 15	18.9	14.4	13	5/8	9/16	460		**032F1171**
EVR 18	24.6	18.7	17	7/8	19/32	460	**032F1004**	
EVR 20	36.4	27.7	25.1	7/8	7/8	460	**032F1177**	**032F1176**
EVR 22	43.7	33.3	30.1	1 1/8	15/16	460	**032F7137**	**032F7145**
EVR 25	72.8	55.4	50.2	1 3/8	1	400	**032F1194**	**032F1193**
EVR 32	116.5	88.7	80.3	1 5/8	7/8	400	**042H1179**	**042H1178**

[1] Valve body is normally closed (NC) and excludes coil. Additional Code Nos. available in Coolselector or contact Danfoss.
Spare parts and accessories are available on page 52.

Coils

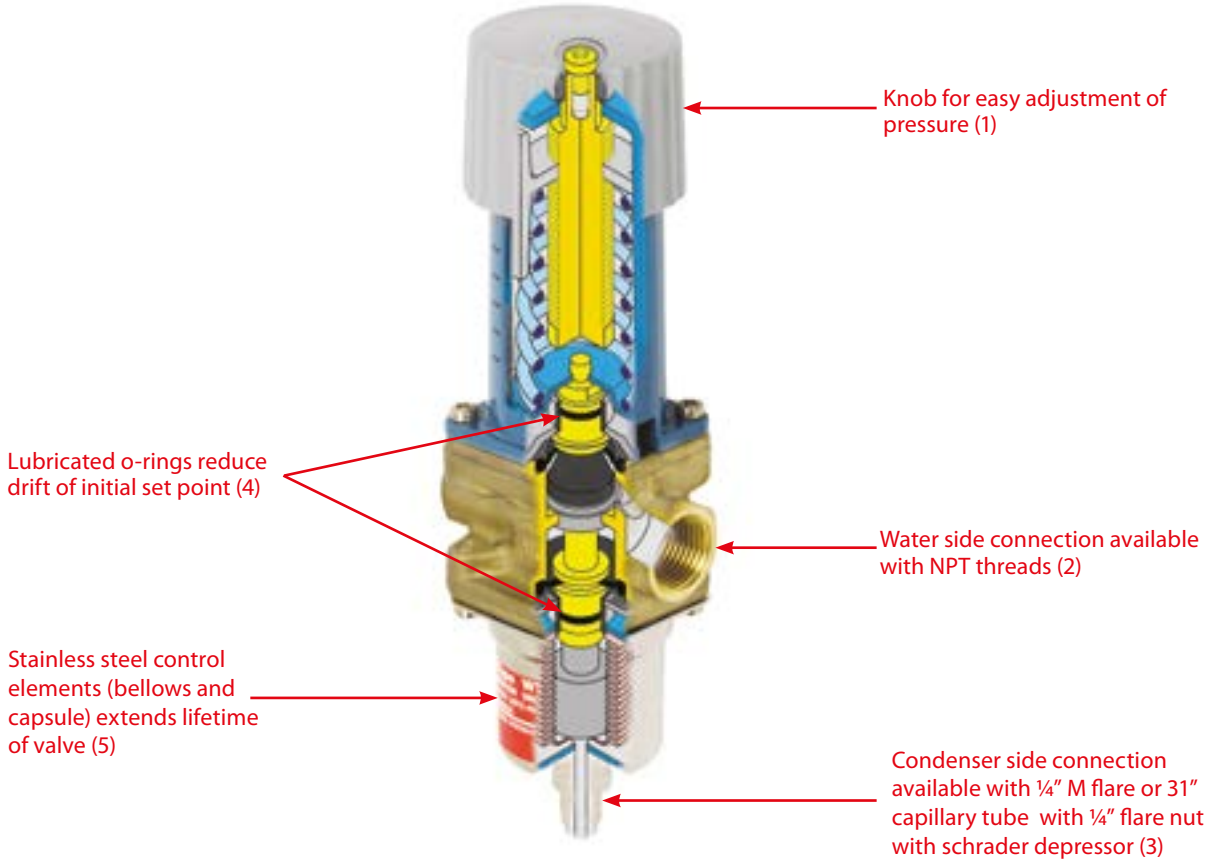
Voltage (V)	Frequency (Hz)	Power consumption (W)	Danfoss Type (Junction Box)[2]	Length of wire (in.)	Danfoss Code No.	Danfoss Type (Conduit Boss)[3]	Length of wire (in.)	Danfoss Code No.
24	50/60	14	BJ024CS	7	**018F4100**	BX024CS	18	**018F4102**
110	50/60	16	BJ120CS	7	**018F4110**	BX120CS	18	**018F4112**
120	60	15						
208-240	60	14	BJ240CS	7	**018F4120**	BX240CS	18	**018F4122**
230	50	17						

[2] Enclosure rating for BJ coils is NEMA 2 / IP 30
[3] Enclosure rating for BX coils is NEMA 4 / IP 54

Introduction and Overview

WVFX pressure controller water regulating valves are used to regulate the flow of water in a refrigeration system with water-cooled condensers. Water valves regulate water flow thereby controlling and maintaining constant condensing pressure. At shut-down, cooling water flow is shut off automatically. The WVFX valves are designed as wide-range, general purpose valves. Additional features include:

- Knob for easy adjustment of pressure (1)
- Water side connection available with NPT threads – ⅜" to 1" (2)
- Condenser side connection available with ¼" M flare or 31" capillary tube with ¼" flare nut with schrader depressor (3)
- Lubricated o-rings reduce drift of initial set point (4)
- Stainless steel control elements (bellows and capsul) extends lifetime of valve (5)
- For HCFC and HFC refrigerants
- Needs no power – self acting
- Opens on rising condensing pressure
- Insensitive to dirt



Product Selection

Danfoss Type	Competitor Part No.	Connection		Range (psig)	Condenser side		Water side		Flow Coefficient, Cv value (gal/min)	Danfoss Code No.
		Water side (NPT)	Condenser side		Maximum working pressure (psig)	Maximum test pressure (psig)	Maximum working pressure (psig)	Maximum test pressure (psig)		
WVFX 10	V46AA-1C[1]	⅜	¼" M flare	60 to 333	380	420	230	350	1.6	**003N5006**
WVFX 10	V46AA-1C	⅜	31" capillary tube with ¼" flare nut[2]	60 to 333	380	420	230	350	1.6	**003N5025**
WVFX 15	V46AB-1C[1]	½	¼" M flare	60 to 333	380	420	230	350	2.2	**003N6006**
WVFX 15	V46AB-1C	½	31" capillary tube with ¼" flare nut[2]	60 to 333	380	420	230	350	2.2	**003N6025**
WVFX 20	V46AC-1C	¾	¼" M flare	60 to 333	380	420	230	350	3.9	**003N7006**
WVFX 20	V46AC-1C	¾	31" capillary tube with ¼" flare nut[2]	60 to 333	380	420	230	350	3.9	**003N7025**
WVFX 25	V46AD-1C[1]	1	¼" M flare	60 to 333	380	420	230	350	6.4	**003N8006**
WVFX 25	V46AD-1C	1	31" capillary tube with ¼" flare nut[2]	60 to 333	380	420	230	350	6.4	**003N8025**

[1] Competitor valve equipped with capillary tube as in Code No. directly below. Else, see page 50 for capillary tube spare part (Code No. 060-017166) to attach to this Code No. (pictured below).
[2] Schrader depressor installed at end of capillary tube.
Length of valve from top of knob to bottom of control element is 8.07 in. for WVFX 10, 15, 20 and 8.46 in. for WVFX 25.
Temperature range: -13 to 265°F
Maximum differential pressure: 145 psig
Spare parts and accessories are available on page 52.

Introduction and Overview

Danfoss has a variety of pressure regulators to control the low and high pressure sides and efficient function of a refrigeration system under varying load conditions. Pressure regulators include:

- Evaporator Pressure Regulator, KVP
- Crankcase Pressure Regulator, KVL
- Condensing Pressure Regulator, KVR + NRD
- Hot Gas Bypass Valves, KVC/CPCE

Some of features include:

- All valves available for use with any CFC, HCFC or HFC refrigerant, except R-410A
- Very stable and accurate pressure regulation
- Hermetic brazed construction 100% leak tested
- Available with flare and ODF solder connections
- Stainless steel bellows for extended lifetime
- Built-in valve seat dampening design
- Pressure regulation side
  - KVP/KVR – opens on a rising pressure
  - KVC/KVL – opens on a falling pressure

Product Selection

Application	Danfoss Type	Rated capacity (tons)				Solder ODF connection (in.)	Setting Range (psig)	Factory setting (psig)	Max. Working Pressure (psig)	Max. Test Pressure (psig)	Min. Temp. of Medium (°F)	Max. Temp of Medium (°F)	Danfoss Code No.
		R-22	R-134a	R-404A	R-407C								
Evaporating Pressure Regulator	KVP 12	1.3	0.9	1.2	1.2	½	0 to 80	29	260	286	-50	265	**034L0023**
	KVP 15	1.3	0.9	1.2	1.2	⅝	0 to 80	29	260	286	-50	265	**034L0029**
	KVP 22	1.3	0.9	1.2	1.2	⅞	0 to 80	29	260	286	-50	265	**034L0025**
	KVP 28	2.8	1.9	2.4	2.6	1⅛	0 to 80	29	260	286	-50	265	**034L0026**
	KVP 35	2.8	1.9	2.4	2.6	1⅜	0 to 80	29	260	286	-50	265	**034L0032**
Crankcase Pressure Regulator	KVL 12	1.2	0.8	1	1.1	½	3 to 87	29	260	286	-75	266	**034L0043**
	KVL 15	1.2	0.8	1	1.1	⅝	3 to 87	29	260	286	-75	266	**034L0049**
	KVL 22	1.2	0.8	1	1.1	⅞	3 to 87	29	260	286	-75	266	**034L0045**
	KVL 28	4.1	2.6	3.4	3.8	1⅛	3 to 87	29	260	286	-75	266	**034L0046**
	KVL 35	4.1	2.6	3.4	3.8	1⅜	3 to 87	29	260	286	-75	266	**034L0052**
Condensing Pressure Regulator	KVR 12	Liquid: 12.7 Hot gas: 4.13	Liquid: 11.8 Hot gas: 3.03	Liquid: 8.2 Hot gas: 3.27	Liquid: 13.8 Hot gas: 4.5	½	73 to 254	145	406	450	-50	266	**034L0093**
	KVR 15	Liquid: 12.7 Hot gas: 4.13	Liquid: 11.8 Hot gas: 3.03	Liquid: 8.2 Hot gas: 3.27	Liquid: 13.8 Hot gas: 4.5	⅝	73 to 254	145	406	450	-50	266	**034L0097**
	KVR 22	Liquid: 12.7 Hot gas: 4.13	Liquid: 11.8 Hot gas: 3.03	Liquid: 8.2 Hot gas: 3.27	Liquid: 13.8 Hot gas: 4.5	⅞	73 to 254	145	406	450	-50	266	**034L0094**
	KVR 28	Liquid: 32.6 Hot gas: 10.93	Liquid: 30.2 Hot gas: 8.04	Liquid: 20.9 Hot gas: 8.66	Liquid: 35.5 Hot gas: 11.91	1⅛	73 to 254	145	406	450	-50	266	**034L0095**
	KVR 35	Liquid: 32.6 Hot gas: 10.93	Liquid: 30.2 Hot gas: 8.04	Liquid: 20.9 Hot gas: 8.66	Liquid: 35.5 Hot gas: 11.91	1⅜	73 to 254	145	406	450	-50	266	**034L0100**
Differential Pressure Regulator	NRD 12s[1]					½	73 to 254	145	667	870	-50	266	**020-1132**
Hot Gas Bypass	KVC 12	2.14	1.36	2.02	2.31	½	3 to 87	29	406	450	-50	266	**034L0143**
	KVC 15	4.17	2.65	3.93	4.5	⅝	3 to 87	29	406	450	-50	266	**034L0147**
	KVC 22	5.35	3.41	5.04	5.78	⅞	3 to 87	29	406	450	-50	266	**034L0144**
	CPCE 12	6.2	4.3	6.3	6.7	½	0 to 87	5.8	406	450	-58	285	**034N0082**
	CPCE 15	9.2	6.3	9.1	9.9	⅝	0 to 87	5.8	406	450	-58	285	**034N0083**
	CPCE 22	12.2	8.4	12.1	12.2	⅞	0 to 87	5.8	406	450	-58	285	**034N0084**

[1] NRD generally used in conjunction with a KVR to regulate the condensing pressure

Spare parts and accessories are available on page 52.

Introduction and Overview

Danfoss DCL/DCB filter driers offer industry leading system protection. These driers use a mixture of molecular sieve and activated alumina to both adsorb system moisture and capture acid and prevent solid contaminants from entering the system. Moisture can clog an expansion device with ice, reducing system efficiency, or can form acids which damage the compressor and other components. Solid contaminants can clog expansion devices and wear compressors prematurely. For aftermarket service, most contractors choose this blend of molecular sieve and activated alumina for both high moisture capacity and acid adsorption capacity. Type DAS are used in the suction line to clean up refrigeration and AC systems with fluorinated refrigerants after a compressor burn-out. The solid core adsorbs harmful acids as well as moisture to protect the compressor from premature failure.

Danfoss filter driers function as simple drop-in replacements for most driers sold in the aftermarket or installed on equipment by manufacturers. All Danfoss filter driers are constructed with a solid core design to maximize moisture removal while minimizing pressure drop. Other product features and benefits are depicted in the picture below.

Nomenclature / Type

D C L 03 2 s VV

Filter drier

Solid Core
A: Core with 30% molecular sieve/ 70% activated alumina (burn-out)
C: Core with 80% molecular sieve / 20% activated alumina
M: Core with 100% molecular sieve

Application
B: Bi-flow
L: Liquid line
S: Suction line

Size (volume)
03: 3 in³
05: 5 in³
08: 8 in³
16: 16 in³
30: 30 in³
41: 41 in³
60: 60 in³
75: 75 in³

Connection
(filter connection in 1/8" increments)
2: 1/4"
2.5: 5/16"
3: 3/8"
4: 1/2"
5: 5/8"
6: 3/4"
7: 7/8"
9: 1 1/8"

Connection type
(blank): Flare connection
s: Solder connection

Access valves

	Inlet	Outlet
(blank)	none	none
V	Schrader valve	none
VV	Schrader valve	Schrader valve

Product Selection

Danfoss Type	Connection (in.)	Maximum Working Pressure (psig)	Drying capacity (lbs. refrigerant)								Liquid Capacity (tons)				Danfoss Code No.
			R-134a		R-404A		R-22		R-410A		R-134a	R-404A	R-22	R-410A	
			75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F					
DCL 1.52XL/2.8mm s	¼ solder	667	5.1	4.6	5.3	5.1	5.1	4.6	4.6	4.2	0.8	0.5	0.9	0.8	**023Z8255**
DCL 032s	¼ solder	667	8.5	8	9.1	8.7	8.6	8	7.8	7.2	1.9	1.42	2.12	2.11	**023Z5013**[1]
DCL 032	¼ flare	667	8.5	8	9.1	8.7	8.6	8	7.8	7.2	1.9	1.42	2.12	2.11	**023Z5000**[1]
DCL 052s	¼ solder	667	13.6	12.8	14.6	13.8	13.8	12.7	12.4	11.4	2.18	1.6	2.4	2.37	**023Z5018**
DCL 052	¼ flare	667	13.6	12.8	14.6	13.8	13.8	12.7	12.4	11.4	2.18	1.6	2.4	2.37	**023Z5002**
DCL 053s	⅜ solder	667	13.6	12.8	14.6	13.8	13.8	12.7	12.4	11.4	3.66	2.79	4.1	4.15	**023Z5019**
DCL 053	⅜ flare	667	13.6	12.8	14.6	13.8	13.8	12.7	12.4	11.4	3.66	2.79	4.1	4.15	**023Z5003**
DCL 082s	¼ solder	667	21.7	20.5	23.3	22.1	22	20.3	19.8	18.2	2.18	1.55	2.37	2.28	**023Z5022**
DCL 082	¼ flare	667	21.7	20.5	23.3	22.1	22	20.3	19.8	18.2	2.18	1.55	2.37	2.28	**023Z5004**
DCL 083s	⅜ solder	667	21.7	20.5	23.3	22.1	22	20.3	19.8	18.2	4.03	3.12	4.56	4.65	**023Z5023**
DCL 084s	½ solder	667	21.7	20.5	23.3	22.1	22	20.3	19.8	18.2	8.14	6.07	9.03	8.99	**023Z5026**
DCL 084	½ flare	667	21.7	20.5	23.3	22.1	22	20.3	19.8	18.2	8.14	6.07	9.03	8.99	**023Z5006**
DCL 162	¼ flare	667	47.7	45.1	51.3	48.6	48.3	44.7	43.5	40.1	2.18	1.54	2.36	2.28	**023Z5007**
DCL 163s	⅜ solder	667	47.7	45.1	51.3	48.6	48.3	44.7	43.5	40.1	4.64	3.18	4.95	4.67	**023Z5029**
DCL 163	⅜ flare	667	47.7	45.1	51.3	48.6	48.3	44.7	43.5	40.1	4.64	3.18	4.95	4.67	**023Z5008**
DCL 164s	½ solder	667	47.7	45.1	51.3	48.6	48.3	44.7	43.5	40.1	9.15	6.69	10.07	9.9	**023Z5032**
DCL 165s	⅝ solder	667	47.7	45.1	51.3	48.6	48.3	44.7	43.5	40.1	12.69	10.41	14.74	15.59	**023Z5033**
DCL 165	⅝ flare	667	47.7	45.1	51.3	48.6	48.3	44.7	43.5	40.1	12.69	10.41	14.74	15.59	**023Z5010**
DCL 303s	⅜ solder	667	100.5	95	108	102.4	101.8	94.1	91.6	84.4	4.46	3	4.72	4.4	**023Z0030**
DCL 303	⅜ flare	667	100.5	95	108	102.4	101.8	94.1	91.6	84.4	4.46	3	4.72	4.4	**023Z0012**
DCL 304s	½ solder	667	100.5	95	108	102.4	101.8	94.1	91.6	84.4	9.24	7.11	10.41	10.58	**023Z0031**
DCL 304	½ flare	667	100.5	95	108	102.4	101.8	94.1	91.6	84.4	9.24	7.11	10.41	10.58	**023Z0013**
DCL 305s	⅝ solder	667	100.5	95	108	102.4	101.8	94.1	91.6	84.4	13	10.51	14.99	15.72	**023Z0032**
DCL 305	⅝ flare	667	100.5	95	108	102.4	101.8	94.1	91.6	84.4	13	10.51	14.99	15.72	**023Z0014**
DCL 307s	⅞ solder	667	100.5	95	108	102.4	101.8	94.1	91.6	84.4	18.27	15.34	21.44	23.05	**023Z0034**
DCL 415s	⅝ solder	667	139.5	131.9	150	142.2	141.3	130.7	127.3	117.3	15.78	11.9	17.61	17.66	**023Z0105**
DCL 417s	⅞ solder	500	139.5	131.9	150	142.2	141.3	130.7	127.3	117.3	18.98	16.01	22.32	24.08	**023Z0106**
DCL 607s	⅞ solder	667	200.9	189.9	216	204.8	203.5	188.2	183.3	168.9	19.93	19.94	25.16	30.71	**023Z0036**
DCB 083s	⅜ solder	667	15.6	14.7	16.7	15.8	15.6	14.5	14.1	13	2.1	1.5	2.3	2.3	**023Z1433**
DCB 163s	⅜ solder	667	29.3	27.7	31.5	29.9	29.7	27.5	26.8	24.6	5.1	3.7	5.7	5.7	**023Z1437**
DCB 164s	½ solder	667	29.3	27.7	31.5	29.9	29.7	27.5	26.8	24.6	8	5.7	9.1	9.1	**023Z1436**
DCB 165s	⅝ solder	667	29.3	27.7	31.5	29.9	29.7	27.5	26.8	24.6	10.6	8.3	11.4	11.4	**023Z1435**

[1] Wire mesh in filter drier outlet

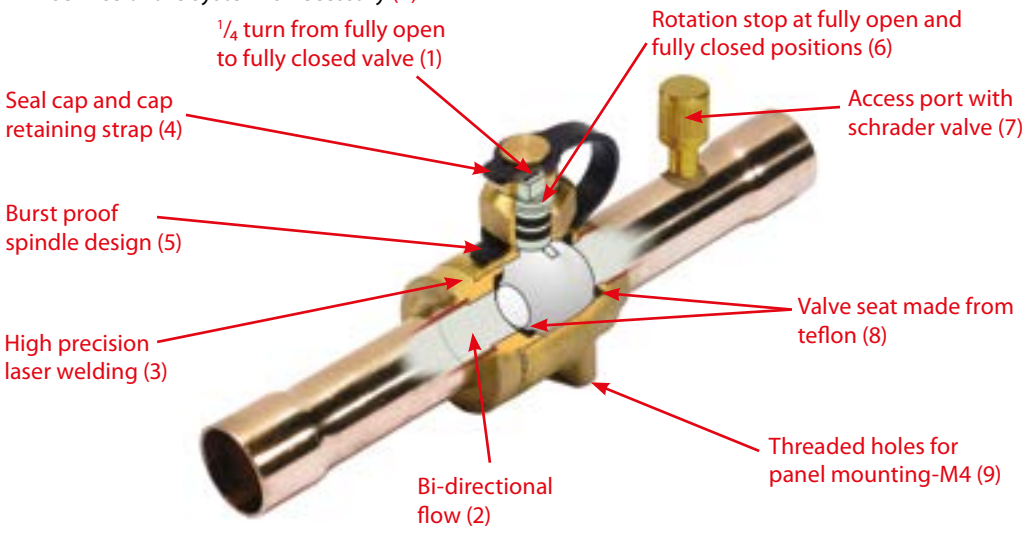
Danfoss Type	Connection (in.)	Maximum Working Pressure (psig)	Rated capacity (tons)			Acid capacity (oz.)	Danfoss Code no.
			R-134a	R-404A	R-22 R-410A		
DAS 164sVV	½ solder	500	1.7	2.4	6.3	0.3	**023Z1009**
DAS 165sVV	⅝ solder	500	2.7	3.7	4.3	0.3	**023Z1010**
DAS 166sVV	¾ solder	500	3.4	4.9	5.7	0.3	**023Z1011**
DAS 167sVV	⅞ solder	500	3.9	5.4	6.3	0.3	**023Z1012**
DAS 306sVV	¾ solder	500	4	5.4	6.3	0.64	**023Z1014**
DAS 307sVV	⅞ solder	500	4.6	6.3	7.4	0.64	**023Z1015**
DAS 309sVV	1⅛ solder	500	5.7	7.7	8.9	0.64	**023Z1016**
DAS 419sVV	1⅛ solder	500	6.3	8.6	10	0.86	**023Z1018**

Danfoss Type	Material	Danfoss Code No.
DCR core insert, type 48-DM solid core	100% molecular sieve	**023U1392**
DCR core insert, type 48-DC solid core	80% molecular sieve & 20% activated alumina	**023U4381**
DCR core insert, type 48-DA solid core	30% molecular sieve & 70% activated alumina	**023U5381**
DCR core insert, type 48-F strainer		**023U1921**

Introduction and Overview

GBC valves are used in liquid, suction and hot gas lines in all refrigeration and air-conditioning systems with fluorinated refrigerants. Danfoss GBC ball valves are manually operated shut-off valves suitable for bi-directional flow (1,2).
The design is based on years of experience.
The valve concept includes a high precision laser welding (3) ensuring both a strong and a light slim line valve body design. The design, weld, and choice of the sealing material enables the ball valves to meet the most demanding requirements, for example, the high working pressure when operating with R-410A. Additional features include:

- Seal cap with retaining strap (4)
- Burst proof spindle design prevents liquid from being trapped internally (5)
- Rotation stops and position indicator (6)
- Access port with schrader valve saves money if service of the system is necessary (7)
- Valve seat made from teflon to secure maximum tightness and a long lifetime (8)
- Threaded holes for panel mounting holes – M4 (9)
- Full flow with minimum pressure drop
- Slim-line design ensures easy operational handling



Product Selection

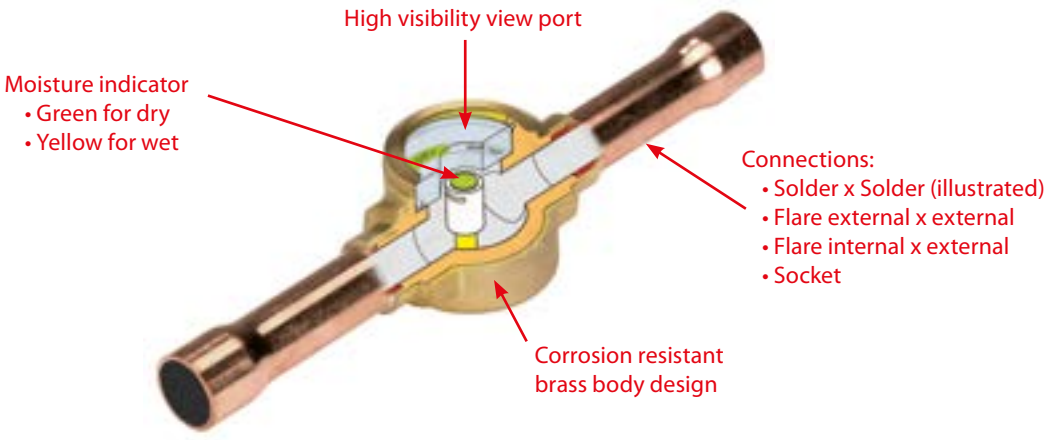
Danfoss Type	Solder ODF connection (in.)	Flow Coefficient, C_v value (gal/min)	Working pressure (psig)	Test pressure (psig)	Danfoss Code No.
GBC 6s	¼	2.27	650	940	**009G8050**
GBC 10s	⅜	6.57	650	940	**009G8051**
GBC 12s	½	12.23	650	940	**009G8052**
GBC 16s	⅝	16.31	650	940	**009G8053**
GBC 18s	¾	23.61	650	940	**009G8054**
GBC 22s	⅞	32.56	650	940	**009G8065**
GBC 28s	1⅛	60.05	650	940	**009G8066**
GBC 35s	1⅜	93.51	650	940	**009G8067**
GBC 42s	1⅝	139.96	650	940	**009G8068**
GBC 54s	2⅛	260.05	650	940	**009G8059**
GBC 67s	2⅝	358.36	650	725	**009G8069**

All valves listed in table above are Full Port.
Spare parts and accessories are available on page 53.

Introduction and Overview

Danfoss sight glasses are designed to accurately indicate the presence of moisture in refrigeration and air-conditioning systems. When system moisture content rises above permissible levels, the “dry/green” indicator will change to yellow indicating a “wet” system. The indication of dangerous moisture levels is essential in helping prevent the formation of harmful acids which are detrimental to the system.

Danfoss offers two types of sight glasses; inline and vessel mount. Inline sight glass, type SGP N is used in the system’s liquid line to indicate both the condition and moisture content of the refrigerant. They incorporate an indicator which changes color dependent on the moisture content. Type SGP N is recommended for HFC refrigerants. Vessel sight glasses, type SGP RN are specially designed to be mounted directly on either a receiver or the compressor crankcase to indicate liquid level. Type SGP RN are available with a refrigerant moisture indicator which can be used with all fluorinated refrigerants.



Product Selection

Danfoss Type	Version	Connection (in.)	Ambient Temperature (°F)	Maximum working pressure (psig)	Danfoss Code No.
SGP 6 N	Flare int. x ext.[1]	¼ x ¼	-60 to 175	750	**014L0171**
SGP 10 N		⅜ x ⅜		750	**014L0172**
SGP 12 N		½ x ½		750	**014L0173**
SGP 6s N	ODF x ODF solder	¼ x ¼		750	**014L0181**
SGP 10s N		⅜ x ⅜		750	**014L0182**
SGP 12s N		½ x ½		750	**014L0183**
SGP 16s N		⅝ x ⅝		750	**014L0145**
SGP 22s N		⅞ x ⅞		750	**014L0186**
SGP ½ RN	NPT	½		750	**014L0006**

[1] Can be screwed directly onto Danfoss filter drier.

Introduction and Overview

Specially optimized for use in mobile, household and light commercial applications, these hermetic reciprocating compressors provide high cooling capacity in an energy saving design. The compressor series can be used with multiple refrigerants including R-134a and R-404A (refrigerant dependent on model) that are perfect for cooling needs from 190 to 10800 Btu/h based on ASHRAE conditions.

Product features and options include:

- Compact construction
- Durable housing
- Optimized motor technology
- Wide voltage range
- Easy installation at lower cost
- Low noise and high energy efficiency
- Robust in tough operating conditions

Product Range

Cooling Capacity[1] (Btu/h)

190 — 10800

BD **T** **N** **S**

[1] Capacity range based on product range represented on following page. For complete range of models (refrigerant, capacity and voltage codes) available, check Coolselector or contact Danfoss.

Product Selection

Voltage/ Phase/ Frequency	Horse-power Rating[1] (HP)	HS/ LS	Competitor Model Nos.	Danfoss Model No.	Danfoss Standard Code No. Alternate Code No.	Cooling Capacity[2] (Btu/h)									Danfoss Single Packed Code No.[3]
						LBP Evaporator Temperature (° F)			MBP Evaporator Temperature (° F)			HBP Evaporator Temperature (° F)			
						-30	-13	0	0	+20	+40	+25	+45	+50	
12-24 DC, 100-240/1/ 50/60	multispeed			BD35F	101Z0204 *101Z0200*		194	299	221	421					**195B0679**
12-24 DC, 100-240/1/ 50/60	multispeed			BD50F	101Z0203 *101Z1220*		242	370	305	545					**195B0678**
115/1/60	1/10	LS		TL2.5G	102G3257		226	340	249	495	860	575	970	1087	**195B0592**
115/1/60	1/10+	HS	AZA0370YXA AEA3414YXA EMS30HHR EM30HHR	TL4G	102G3460 *102G3462*		320	516	393	732	1225	840	1375	1530	**195B0003**
115/1/60	1/4	HS	AFE05C4E-IAA ARE25C4E-IAA ARE25C3E-SAA ARE25C3E-IAA AEA1360YXA AEA3425YXA FF7.5HBK	NF5.5FX	105G5623	374	701	10355	845	1442	2293	1633	2562		**195B0259**
115/1/60	1/4	HS	AFE07C3E-IAA ARE27C3E-SAA AEA4430YXA FF8.5HBK FF10HBX	NF7FX	105G5723	465	830	1206	1022	1708	2700	1925	3006		**195B0467**
115/1/60	1/3	HS	ARE37C3E-IAA ARE37C3E-SAA ARE34C4E-IAA AFE10C3E-IAA AEA3440YXA AEA4440YXA FF110HBX NEK6187Z	NF11FX	105G5945 *105G5941 195B0330 105G5946*	553	1046	1568	1333	2279	3638	2575	4056		**195B0388**
115/1/60	1/3+	HS	AFE12C3E-IAA ARE41C3E-IAA ARE40C4E-IAA ARE46C4E-IAA AEA4448YXA AEA2410YXA FF112HBX NEK6210Z	SC12G	104G7250	499	1126	1769	1344	2536	4242	2908	4765	5333	**195B0042**
115/1/60	1/2+	HS	AFE12C4E-IAA AKA4460YXA NEK6212Z	SC15G	104G7550		1266	2059	1556	3040	4969	3473	5544	6162	**195B0099**
115/1/60	1/2+	HS	ARE51C4E-CAA AEA2413YXA AKA4476YXA NEK6214Z NT6215Z	SC18G	104G7800 *195B0276*		1582	2462	1882	3479	5586	3950	6217	6896	**195B0694**
220-240/1/60	1/2+	HS	AKA4460YXD NEK6214Z	SC18G	104G8820		1526	2386	2006	3554					**195B0059**
220-240/1/60	3/4	HS	AJA7461YXD	SC21G	104G8140		1723	2665	2064	3960					**195B0636**

[1] Horsepower Ratings are nominal. Danfoss recommends sizing compressors based on Cooling Capacity requirements.
[2] Capacity at ASHRAE conditions below. For other conditions and/or speeds, check Coolselector or contact Danfoss.
[3] Code No. contains compressor and required electrical and non-electrical accessories.
Full range of models (refrigerant, capacity and voltage codes) available. Check Coolselector or contact Danfoss.

Test conditions	**ASHRAE (LBP)**	**ASHRAE (MBP)**	**ASHRAE (HBP)**
Condensing temperature	110°F	130°F	130°F
Ambient and suction gas temperature	90°F	95°F	95°F
Liquid temperature	90°F	115°F	115°F
Speed	3500	3500	

Voltage/ Phase/ Frequency	Horse-power Rating[1] (HP)	HS/ LS	Competitor Model Nos.	Danfoss Model No.	Danfoss Standard Code No. *Alternate Code No.*	Cooling Capacity[2] (Btu/h)									Danfoss Single Packed Code No.[3]
						LBP Evaporator Temperature (° F)			MBP Evaporator Temperature (° F)			HBP Evaporator Temperature (° F)			
						-30	-13	0	0	+20	+40	+25	+45	+50	
115/1/60	⅕	HS	AFE06C4E-IAA ASE12C4E-IAA AEA9415ZXA	TF4CLX	102U2114 *102U2102* *195B0468*	421	714	1008	791	1285	1953				**195B0666**
115/1/60	¼	HS	ASE14C4E-IAA AFE08C4E-IAA AEA2380ZXA	TFS4.5CLX	102U2115	569	933	1297							**195B0667**
115/1/60	⅓	HS	ASE26C3E-IAA AEA9422ZXA AKA9427ZXA NEK2121GK NEK2125GK	NF5.5CLX	105F1621	789	1276	1759	1384	2209	3334				**195B0348**
115/1/60	⅓+	HS	AFE13C4E-IAA ASE20C4E-IAA AEA2411ZXA NEK6181GK	NF7CLX	105F1721	960	1587	2209	1727	2789	4237				**195B0304**
115/1/60	½	HS	AJA2419ZXA AKA9438ZXA NEK6210GK	SC10CL	104L1696	776	1683	2562	1742	3111	5012	3532	5585		**195B0147**
115/1/60	½+	HS	AJA2425ZXA NEK2150GK	SC12CLX.2	104L1696 *104L1603* *195B0061*	1419	2496	3525							**195B0491**
115/1/60	¾	HS	AFE17C4E-CAA RST45C1E-IAA RST45C1E-CAA AE4470Z-AA NEK6213GK	SC12MLX	104L1606				2640	4391	6865	4962	7654		**195B0510**
115/1/60	¾	HS	NT2168GKV	SC15CLX.2	104L1853 *195B0237*	1834	3118	4391							**195B0701**
115/1/60	¾	HS	AKA9462ZXA NT6222GKV	SC18MLX	104L2105			5025	3894	6296	9691	7082	10776		**195B0702**
115/1/60	¾	HS	AJB2433ZXA NT2180GKV	SC18CLX.2	104L2198	2198	3611	4873	3942	5929					**195B0464**
208-230/1/60	¾	HS	RST61C1E-CAV RST64C1E-IAV RST64C1E-CAV NT2180GKV	SC18CLX.2	104L2195		3741	5050	4084						**195B0428**

[1] Horsepower Ratings are nominal. Danfoss recommends sizing compressors based on Cooling Capacity requirements.
[2] Capacity at ASHRAE conditions below. For other conditions and/or speeds, check Coolselector or contact Danfoss.
[3] Code No. contains compressor and required electrical and non-electrical accessories.
Full range of models (refrigerant, capacity and voltage codes) available. Check Coolselector or contact Danfoss.

Test conditions	**ASHRAE (LBP)**	**ASHRAE (MBP)**	**ASHRAE (HBP)**
Condensing temperature	110°F	130°F	130°F
Ambient and suction gas temperature	90°F	95°F	95°F
Liquid temperature	90°F	115°F	115°F
Speed	3500	3500	

Introduction and Overview

Optyma™ is the widest range of hermetic condensing units on the market. Optyma™ condensing unit is available with high capacity models of reciprocating and scroll compressors so to cover a large range of commercial refrigeration applications, reducing costs and complexity of the systems.

All Optyma™ condensing units are extremely efficient and reliable. That means less energy consumption and less running costs, less cost for service and maintenance.

Nomenclature / Model No.

U C G C 0033 U WC000 B

Application
L: low
H: medium / high
U: universal low / medium / high

Design
C: air cooled condenser, single fan, hermetic compressor
G: air cooled condenser, dual fan, hermetic compressor

Refrigerant
G: R-134a
H: R-404A, R-507
M: R-22
Z: R-404A, R-134a, R-507, R-407C

Condenser size
sized to 110°F ambient

Horsepower (hp) rating
hp rating in hundredths of hp
e.g. 0033 = ⅓ hp, 1000 = 10 hp

Certification
R: UL recognized
U: UL listed

Version
W: wholesale model
A: power cord
B: power cord, receiver
C: electical box, power cord, receiver
D: electrical box, receiver, low pressure control, cartridge fan cycling control
E: electrical box, receiver, dual pressure control, cartridge fan cycling control, larger than 3 hp units use KPU fan cycling control
F: WE + filter drier, sight glass, solenoid valve with coil

Electrical code
B: compressor & fan(s), 115 V, 1 ph, 60 Hz
N: compressor & fan(s), 230 V, 1 ph, 60 Hz
Q: compressor 208-230 V, 3 ph, 60 Hz; fan(s) 230 V, 1 ph, 60 Hz
R: compressor 460 V, 3 ph, 60 Hz; fan(s) 460 V, 1 ph, 60 Hz

Product Selection

R-134a MBP			Ambient temperature (°F)	Capacity (Btu/h) ASHRAE[1] at evaporating temperature (°F)									
Competitor Model Nos.	Danfoss Model No.	Danfoss Code No.		0	5	10	15	20	25	30	35	40	45
AEA3425 M2FH0020 M2FH0024	UCGC0020RWA000B	**114N2017**	90	1050	1200	1350	1500	1700	1850	2050	2250	2450	2700
			95	1000	1150	1300	1450	1600	1800	2000	2200	2400	2600
			100	950	1100	1250	1400	1550	1750	1900	2100	2300	2500
			110	900	1000	1150	1300	1450	1600	1800	1950	2150	2350
AEA4430 M2FH0026	UCGC0025RWB000B	**114N2019**	90	1250	1400	1600	1750	1950	2150	2400	2600	2850	3100
			95	1200	1350	1550	1700	1900	2100	2300	2500	2750	3000
			100	1150	1300	1450	1650	1800	2000	2200	2450	2650	2900
			110	1050	1200	1350	1550	1700	1900	2050	2250	2450	2700
AEA4440 AEA4448 M2FHA033	HCGC0033RWB000B	**114N2022**	90		2050	2300	2550	2850	3100	3450	3750	4100	4450
			95		1950	2200	2450	2750	3000	3300	3650	3950	4300
			100		1900	2100	2350	2600	2900	3200	3500	3800	4150
			110		1750	1950	2200	2450	2700	2950	3250	3550	3850
AKA4460 AKA7437 M2FH0049	UCGC0050RWC000B	**114N2023**	90	2350	2700	3050	3450	3800	4250	4700	5150	5650	6150
			95	2300	2600	2950	3300	3700	4100	4500	4950	5400	5900
			100	2200	2500	2800	3200	3550	3950	4350	4750	5200	5650
			110	2000	2300	2600	2900	3250	3600	4000	4400	4800	5200
	HCGC0055UWC000B	**114N2026**	90		2900	3300	3800	4300	4850	5450	6100	6700	7350
			95		2800	3200	3650	4150	4650	5250	5850	6450	7050
			100		2650	3050	3500	3950	4500	5050	5600	6150	6750
			110				3250	3700	4150	4700			
AJA4492 AJA7465 FTAHA074 FTAHA075 FTAHB074 FTAMA074 FTAMA075	HCGC0075UWC000B HCGC0075UWC000N	**114N2027** **114N2028**	90		4350	4850	5550	6250	7150	8050	9100	10100	11200
			95		4100	4700	5350	6100	6950	7850	8800	9800	10850
			100		3900	4500	5150	5900	6750	7600	8550	9500	10450
			110				4850	5600	6400	7250	8100		
AJA4512 FTAHA100 FTAHA101	HCGC0100UWD000N	**114N2029**	90		6800	7450	8200	9050	9950	10950	12000	13050	14200
			95		6300	7000	7750	8550	9450	10400	11450	12450	13550
			100			6550	7300	8100	8950	9900	10900	11850	12900
			110				6500	7250	8100	9000			

[1]Ambient temperature = 90°F, Return gas = 65°F, Subcooling = 5°F

Enclosures are available on page 53.

R-404A MBP			Ambient temperature (°F)	Capacity (Btu/h) ASHRAE[1] at evaporating temperature (°F)									
Competitor Model Nos.	Danfoss Model No.	Danfoss Code No.		0	5	10	15	20	25	30	35	40	45
AEA9415 M4FH0022	UCHC0020RWA000B	**114N2316**	90	1000	1100	1250	1400	1500	1650	1800	2000	2150	2300
			95	950	1050	1200	1300	1450	1600	1750	1900	2050	2200
			100	900	1000	1100	1250	1350	1500	1650	1800		
			110	800	900	1000	1150	1250	1400	1500			
AEA9422 M4FH0025	UCHC0025RWB000B	**114N2318**	90	1650	1850	2050	2250	2450	2650	2900	3150	3400	3650
			95	1600	1750	1950	2150	2350	2550	2800	3000	3250	3500
			100	1500	1650	1850	2050	2250	2450	2650	2900	3100	3350
			110	1350	1550	1700	1850	2050	2250				
AKA9429 M4FHA036	UCHC0033RWB000B	**114N2321**	90	2050	2250	2500	2750	3000	3250	3550	3850	4100	4450
			95	1950	2150	2400	2600	2850	3100	3400	3650	3950	4250
			100	1850	2050	2250	2500	2700	2950	3200	3500	3750	4050
			110	1650	1850	2050							
AKA9440 M4FH0050	UCHC0050RWB000B UCHC0050UWC000N	**114N2324 114N2325**	90	2450	2750	3100	3400	3750	4100	4500	4900	5250	5700
			95	2300	2600	2900	3200	3550	3850	4250	4600	4950	5350
			100	2100	2400	2700	3000	3300	3600	3950	4300	4650	5000
			110	1850	2100	2350	2600	2850	3150				
	HCHC0075UWC000B HCHC0075UWC000N	**114N2330 114N2331**	90	4400	4950	5500	6150	6800	7500	8250	9000	9800	10650
			95	4150	4700	5250	5850	6500	7200	7900	8650	9400	10250
			100	3900	4450	5000	5600	6200	6850	7550	8300	9050	9850
			110	3500	4000	4550	5100	5700	6350	7000			
AJA7480 FJAMA100 FJAMA101 FJAMA106 FJAFA100	HCHC0100UWD000N	**114N2332**	90		5900	6650	7450	8200	9000	9850	10650	11450	12300
			95		5600	6350	7100	7800	8600	9350	10150	10950	11750
			100			6000	6700	7400	8150	8900	9650	10400	11150
			110				6100	6750	7400	8100	8800		
AWA7512 FJAMA125 FJAMA126 FJAMA150	HCZC0150UWF300Q HCZC0150UWF300R	**114N6402 114N6403**	90	6365	7471	8647	9891	11153	12524	13954	15440	16921	18503
			95	5950	7009	8134	9323	10528	11835	13199	14614	16025	17531
			100	5529	6542	7616	8750	9897	11141	12438	13783	15124	16554
			110	4686	5600	6570	7591	8623	9740	10902	12108	13308	14588
AWA7515 VJAF017H FJAMA200	HCZC0200UWF300N HCZC0200UWF300Q HCZC0200UWF300R	**114N6404 114N6405 114N6406**	90	8793	10070	11423	12848	14286	15836	17439	19089	20716	22434
			95	8315	9529	10814	12164	13525	14990	16504	18061	19596	21217
			100	7818	8969	10185	11461	12744	14125	15551	17017	18461	19986
			110	6778	7801	8877	10003	11133	12346	13598	14883	16149	17497
VJAF025H	HCZC0250UWF300N HCZC0250UWF300Q	**114N6408 114N6409**	90	11258	12870	14483	16253	18023	19974	21992	24108	26223	28532
			95	10640	12182	13723	15412	17101	18963	20887	22903	24920	27134
			100	10008	11478	12947	14554	16162	17933	19765	21689	23613	25720
			110	8732	10057	11382	12827	14273	15867	17518	19256	20994	
AVA7523 FJAMA300 VJAF030H FJAMA325	HCZC0300UWF300N HCZC0300UWF300Q HCZC0300UWF300R	**114N6420 114N6421 114N6422**	90	15776	18105	20434	22974	25514	28281	31145	34130	37115	40306
			95	14841	17062	19284	21704	24125	26775	29493	32347	35201	38255
			100	13910	16023	18136	20438	22739	25260	27846	30557	33268	36201
			110	12102	14000	15898	17964	20031	22301	24644			

[1]Ambient temperature = 90°F, Return gas = 65°F, Subcooling = 5°F

Enclosures are available on page 53.

R-404A MBP			Ambient temperature (°F)	Capacity (Btu/h) ASHRAE[1] at evaporating temperature (°F)									
Competitor Model Nos.	Danfoss Model No.	Danfoss Code No.		0	5	10	15	20	25	30	35	40	45
VJAF035Z VJAF035H	HGZC0400UWF300N HGZC0400UWF300Q HGZC0400UWF300R	**114N6427** **114N6428** **114N6429**	90	20074	23089	26103	29451	32798	36521	40377	44475	48573	53103
			95	18817	21706	24596	27802	31008	34575	38286	42213	46140	50500
			100	17545	20307	23068	26131	29194	32604	36155	39922	43689	47866
			110	15020	17523	20026	22804	25583	28683	31918	35364	38809	
FJAMB400 VJAF040Z VJAF040H FJAMB500 VJAF050Z	HGZC0500UWF300N HGZC0500UWF300Q HGZC0500UWF300R	**114N6435** **114N6436** **114N6437**	90	24167	27679	31192	35047	38902	43145	47507	52087	56667	61623
			95	22592	25935	29279	32946	36612	40649	44796	49160	53523	58258
			100	21011	24184	27357	30833	34310	38139	42094	46221	50349	54852
			110	17904	20734	23565	26663	29762	33179	36713	40415	44117	
FJAH100Z	HGZC1000UWF300Q HGZC1000UWF300R	**114N6445** **114N6446**	90	50572	57395	64218	71795	79372	87743	96495	105668	115042	
			95	47531	54059	60587	67833	75078	83083	91458	100240	109214	
			100	44478	50707	56936	63848	70760	78397	86396	94789	103367	
			110	38467	44098	49729	55982	62236	69152	76414	84053	91921	
CJDM1000	HGZC1200UWF300R	**114N6449**	90	58238	65784	73330	81645	89960	99106	108643	118562	128799	
			95	54773	61980	69186	77124	85063	93843	102910	112381	122060	
			100	51292	58154	65015	72574	80133	88502	97144	103232	115500	
			110	44431	50602	56773	63580	70387	77948	85814	94021	102497	
FJAH120Z FJAM130Z	HGZC1350UWF300R	**114N6452**	90	62293	70102	77911	86496	95082	104476	114193	124446	134767	
			95	58588	66047	73506	81708	89910	98881	108213	117877	127858	
			100	54893	61999	69105	76922	84739	93288	102196	111448	120991	
			110	47666	54091	60516	67557	74599	82383	90417	98880		

[1]Ambient temperature = 90°F, Return gas = 65°F, Subcooling = 5°F

Enclosures are available on page 53.

R-404A LBP			Ambient temperature (°F)	Capacity (Btu/h) ASHRAE[1] at evaporating temperature (°F)										
Competitor Model No.	Danfoss Model No.	Danfoss Code No.		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
	UCHC0020RWA000B	**114N2316**	90	350	400	450	550	600	700	800	900	1000	1100	1250
			95	300	350	450	500	550	650	750	850	950	1050	1200
			100	300	350	400	450	550	600	700	800	900	1000	1100
			110	250	300	350	400	500	550	650	700	800	900	
AEA2410	UCHC0025RWB000B	**114N2318**	90	600	700	800	900	1050	1200	1350	1500	1650	1850	2050
			95	550	650	750	900	1000	1150	1250	1400	1600	1750	1950
			100	550	600	700	850	950	1050	1200	1350	1500	1650	1850
			110	450	550	650	750	850	950	1100	1250	1350	1550	1700
AEA2413 M4FL0033	UCHC0033RWB000B	**114N2321**	90	750	850	1000	1100	1300	1450	1650	1800	2050	2250	2500
			95	700	800	950	1050	1200	1400	1550	1750	1950	2150	2400
			100	650	750	850	1000	1150	1300	1450	1650	1850	2050	2250
			110	550	650	750	900	1000	1150	1350	1500			
AKA2422 M4FL0040	UCHC0050RWB000B UCHC0050UWC000N	**114N2324 114N2325**	90			1100	1300	1500	1700	1900	2150	2400	2700	2950
			95			1000	1200	1400	1600	1850	2050	2300	2550	2850
			100			900	1100	1300	1500	1750	1950	2200	2450	2700
			110			750	950	1150	1350	1550	1750	2000	2250	2500
	LCHC0050RWB000B	**114N2389**	90	1050	1250	1450	1700	1950	2200	2500	2800	3150	3450	3850
			95	950	1150	1350	1600	1850	2100	2400	2650	3000	3300	3650
			100	850	1050	1250	1500	1700	2000	2250	2500	2800	3150	3450
			110	700	900	1100	1300	1500	1750	2000	2300	2550	2850	3150
AJA2429 M4FL0051	LCHC0060UWC000B LCHC0060UWC000N	**114N2335 114N2336**	90	1350	1550	1850	2100	2400	2700	3050	3400	3800	4200	4600
			95	1250	1450	1700	1950	2250	2550	2900	3200	3600	3950	4350
			100	1150	1350	1600	1850	2100	2400	2700	3050	3400	3750	4100
			110	950	1150	1400	1600	1850	2150	2400	2700	3050	3350	
M4FL0067 FJAFA075	LCHC0075UWC000B LCHC0075UWC000N	**114N2337 114N2338**	90	1450	1800	2150	2550	2950	3400	3900	4400	4950	5550	6200
			95	1400	1750	2100	2450	2900	3350	3800	4300	4850	5450	6100
			100		1650	2000	2400	2800	3250	3750	4250	4800	5350	6000
			110						3100	3600	4100	4650	5200	
AWA2448 FJALA100 FJALA101 FJALA103 FJALA102	LCHC0100UWD000N	**114N2339**	90	1700	2250	2800	3400	4000	4650	5350	6000	6800	7550	8400
			95	1550	2100	2650	3200	3850	4500	5150	5850	6600	7400	8250
			100		1900	2500	3050	3650	4300	5000	5700	6450	7250	8100
			110						4000	4700	5400	6150	7000	
AWA2479 AWA2490 AVA2510 FJALB200 FJALA225	LCZC0200UWF300N LCZC0201UWF300Q LCZC0201UWF300R	**114N6729 114N6730 114N6731**	90	4953	5934	6985	8061	9238	10472	11757	13038	14404	15799	
			95	4585	5523	6525	7549	8666	9836	11052	12264	13553	14870	
			100	4236	5131	6085	7056	8114	9220	10369	11510	12724	13961	
			110	3586	4397	5254	6122	7063	8042	9054	10056	11117	12193	
AVA2512 AVA2515 VJAL025Z FJALB301 VJAL035Z	LCZC0301UWF300Q	**114N6734**	90	6108	7619	9247	10912	12723	14600	16525	18408	20368	22317	
			95	5628	7070	8614	10189	11894	13658	15460	17219	19045	20855	
			100	5138	6512	7975	9460	11063	12714	14397	16033	17728	19402	
			110	4140	5375	6679	7989	9391	10823	12272	13670	15106	16526	

[1]Ambient temperature = 90°F, Return gas = 65°F, Subcooling = 5°F

Enclosures are available on page 53.

R-404A LBP			Ambient temperature (°F)	Capacity (Btu/h) ASHRAE[1] at evaporating temperature (°F)										
Competitor Model No.	Danfoss Model No.	Danfoss Code No.		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
VJAL040Z VJAL050Z	LGZC0401UWF300N LGZC0401UWF300Q LGZC0401UWF300R	**114N6737 114N6738 114N6739**	90	8907	10928	13112	15368	17855	20487	23251	26032	29023	32109	
			95	8170	10112	12209	14369	16747	19258	21891	24537	27379	30307	
			100	7439	9304	11313	13378	15646	18037	20540	23050	25743	28514	
			110	6009	7726	9551	11422	13469	15617	17858	20098	22494	24950	
CJDL0600	LGZC0600UWF300Q LGZC0600UWF300R	**114N6741 114N6742**	90	14093	16971	20081	23290	26827	30564	34487	38430	42667	47035	
			95	12860	15622	18602	21669	25040	28594	32316	36051	40057	44180	
			100	11606	14266	17106	20030	23235	26607	30130	33659	37437	41319	
			110	9080	11509	14095	16720	19593	22601	25730	28850	32179	35585	
CPDK0600	LGZC0751UWF300Q LGZC0750UWF300R	**114N6744 114N6745**	90	19051	22596	26384	30245	34439	38796	43286	47709	52359	57039	
			95	17672	21054	24655	28312	32274	36379	40599	44747	49099	53470	
			100	16289	19508	22921	26375	30105	33960	37912	41788	45844	49908	
			110	13530	16417	19450	22497	25765	29120	32539	35872	39341	42795	

[1]Ambient temperature = 90°F, Return gas = 65°F, Subcooling = 5°F

Enclosures are available on page 53.

Introduction and Overview

Known for their legendary durability, Maneurop® reciprocating compressors from Danfoss are specially designed for applications with a wide range of operating conditions. Maneurop® MT and MTZ series compressors are of the hermetic reciprocating type and are designed for medium and high evaporating temperature applications.

The MT series is designed for use with the "traditional" R-22 refrigerant, using Danfoss mineral oil 160P as lubricant. The MT series can also be applied with several R-22 based refrigerant blends (substitute refrigerants), using 160 ABM alkylbenzene as lubricant. The MTZ series is specifically designed for use with the HFC refrigerants R-407A/C/F, R-134a, R-404A, and R-507A, using 160PZ polyester oil. MT and MTZ compressors have a large internal free volume that protects against the risk of liquid hammering when liquid refrigerant enters the compressor.

MT and MTZ compressors are available in 16 different models with displacement ranging from 1.84 to 16.57 in³/rev. Seven different motor voltage ranges are available, including single and three phase and 50 and 60 Hz models.

Nomenclature / Model No.

MT Z 64 HM 4 B VE

Compressor type
MT: medium and high temperature reciprocating compressor

Refrigerant & oil
Blank: R-22, mineral oil
Z: R-407A/C/F, R-134a, R-404A, R-507A, POE oil

Nominal Capacity
In thousand Btu/h at 60 Hz, ARI Conditions

Displacement code (in³/rev)
JA: 1.84 **HL:** 5.87
JC: 2.33 **HM:** 6.57
JE: 2.93 **HN:** 7.38
JF: 3.29 **HP:** 8.29
JG: 3.69 **HS:** 10.45
JH: 4.14 **HU:** 13.15
HJ: 4.65 **HV:** 14.76
HK: 5.23 **HW:** 16.57

Motor voltage code
1: 208-230 V / 1 ph / 60 Hz
3: 200-230 V / 3 ph / 60 Hz
4: 380-400 V / 3 ph / 50 Hz
460 V / 3 ph / 60 Hz
5: 230 V / 1 ph / 50 Hz
6: 230 V / 3 ph / 50 Hz
7: 500 V / 3 ph / 50 Hz
575 V / 3 ph / 60 Hz
9: 380 V / 3 ph / 60 Hz

Evolution index

Oil equalization port and sight glass

Product Selection

208-230/1/60		200-230/3/60		460/3/60		Nominal Cacapity (Btu/h)[2]			Connection type rotolock (in.)	Connection with supplied sleeve (in. ODF)	No. cylinders	Weight (lbs.)
Danfoss Model No.[1]	Danfoss Code No.	Danfoss Model No.[1]	Danfoss Code No	Danfoss Model No.[1]	Danfoss Code No.	R-22[3]	R-134a[3]	R-404A[4] R-507A[4]				
MT18JA1PVE	**MT18-1VI**	MT18JA3MVE	**MT18-3VI**	MT18JA4BVE	**MT18-4VI**	15903			1 x 1	½ x ⅜	1	46
MT22JC1TVE	**MT22-1VI**[5]	MT22JC3MVE	**MT22-3VI**	MT22JC4AVE	**MT22-4VI**	21975			1 x 1[(5)]	½ x ⅜[(5)]	1	46
MT28JE1RVE	**MT28-1VI**[5]	MT28JE3MVE	**MT28-3VI**	MT28JE4AVE	**MT28-4VI**	30231			1 x 1[(5)]	½ x ⅜[(5)]	1	51
MT32JF1MVE	**MT32-1VI**	MT32JF3EVE	**MT32-3VI**	MT32JF4DVE	**MT32-4VI**	33044			1¼ x 1	⅝ x ½	1	53
MT36JG1QVE	**MT36-1VI**	MT36JG3FVE	**MT36-3VI**	MT36JG4EVE	**MT36-4VI**	37992			1¼ x 1	⅝ x ½	1	55
MT40JH1NVE	**MT40-1VI**	MT40JH3FVE	**MT40-3VI**	MT40JH4EVE	**MT40-4VI**	42930			1¼ x 1	⅝ x ½	1	57
MT44HJ1FVE	**MT44-1VI**	MT44HJ3BVE	**MT44-3VI**	MT44HJ4AVE	**MT44-4VI**	43999			1¾ x 1¼	⅞ x ¾	2	82
MT50HK1GVE	**MT50-1VI**	MT50HK3CVE	**MT50-3VI**	MT50HK4BVE	**MT50-4VI**	50160			1¾ x 1¼	⅞ x ¾	2	82
MT56HL1EVE	**MT56-1VI**	MT56HL3CVE	**MT56-3VI**	MT56HL4AVE	**MT56-4VI**	56420			1¾ x 1¼	⅞ x ¾	2	86
MT64HM1FVE	**MT64-1VI**	MT64HM3DVE	**MT64-3VI**	MT64HM4CVE	**MT64-4VI**	64366			1¾ x 1¼	⅞ x ¾	2	86
		MT72HN3CVE	**MT72-3VI**	MT72HN4AVE	**MT72-4VI**	74561			1¾ x 1¼	⅞ x ¾	2	88
		MT80HP3CVE	**MT80-3VI**	MT80HP4AVE	**MT80-4VI**	84977			1¾ x 1¼	1⅛ x ¾	2	88
		MT100HS3DVE	**MT100-3VI**	MT100HS4DVE	**MT100-4VI**	95898			1¾ x 1¼	1⅛ x ¾	4	132
		MT125HU3DVE	**MT125-3VI**	MT125HU4DVE	**MT125-4VI**	124678			1¾ x 1¼	1⅛ x ¾	4	141
		MT144HV3VE	**MT144-3VI**	MT144HV4VE	**MT144-4VI**	140697			1¾ x 1¼	1⅛ x ¾	4	148
		MT160HW3DVE	**MT160-3VI**	MT160HW4DVE	**MT160-4VI**	156820			1¾ x 1¼	1⅛ x ¾	4	152
MTZ18JA1AVE	**MTZ18-1VI**	MTZ18JA3AVE	**MTZ18-3VI**	MTZ18JA4BVE	**MTZ18-4VI**		11200	8980	1 x 1	½ x ⅜	1	46
MTZ22JC1BVE	**MTZ22-1VI**[5]	MTZ22JC3AVE	**MTZ22-3VI**	MTZ22JC4AVE	**MTZ22-4VI**		14849	12306	1 x 1[(5)]	½ x ⅜[(5)]	1	46
MTZ28JE1AVE	**MTZ28-1VI**[5]	MTZ28JE3AVE	**MTZ28-3VI**	MTZ28JE4AVE	**MTZ28-4VI**		19276	15986	1 x 1[(5)]	½ x ⅜[(5)]	1	51
MTZ32JF1AVE	**MTZ32-1VI**	MTZ32JF3AVE	**MTZ32-3VI**	MTZ32JF4BVE	**MTZ32-4VI**		20949	17480	1¼ x 1	⅝ x ½	1	53
MTZ36JG1AVE	**MTZ36-1VI**	MTZ36JG3AVE	**MTZ36-3VI**	MTZ36JG4AVE	**MTZ36-4VI**		24482	20189	1¼ x 1	⅝ x ½	1	55
MTZ40JH1AVE	**MTZ40-1VI**	MTZ40JH3AVE	**MTZ40-3VI**	MTZ40JH4AVE	**MTZ40-4VI**		27864	23031	1¼ x 1	⅝ x ½	1	57
MTZ44HJ1AVE	**MTZ44-1VI**	MTZ44HJ3AVE	**MTZ44-3VI**	MTZ44HJ4BVE	**MTZ44-4VI**		30110	24323	1¾ x 1¼	⅞ x¾	2	82
MTZ50HK1BVE	**MTZ50-1VI**	MTZ50HK3BVE	**MTZ50-3VI**	MTZ50HK4CVE	**MTZ50-4VI**		34538	28590	1¾ x 1¼	⅞ x ¾	2	82
				MTZ56HL4BVE	**MTZ56-4VI**		38881	32451	1¾ x 1¼	⅞ x ¾	2	86
MTZ64HM1BVE	**MTZ64-1VI**	MTZ64HM3AVE	**MTZ64-3VI**	MTZ64HM4CVE	**MTZ64-4VI**		44404	36056	1¾ x 1¼	⅞ x ¾	2	86
		MTZ72HN3BVE	**MTZ72-3VI**	MTZ72HN4AVE	**MTZ72-4VI**		50000	40894	1¾ x 1¼	⅞ x ¾	2	88
		MTZ80HP3BVE	**MTZ80-3VI**	MTZ80HP4AVE	**MTZ80-4VI**		56336	46521	1¾ x 1¼	1⅛ x ¾	2	88
		MTZ100HS3VE	**MTZ100-3VI**	MTZ100HS4VE	**MTZ100-4VI**		63963	52953	1¾ x 1¼	1⅛ x ¾	4	132
		MTZ125HU3VE	**MTZ125-3VI**	MTZ125HU4VE	**MTZ125-4VI**		78906	68297	1¾ x 1¼	1⅛ x ¾	4	141
		MTZ144HV3VE	**MTZ144-3VI**	MTZ144HV4AVE	**MTZ144-4VI**		96936	80472	1¾ x 1¼	1⅛ x ¾	4	148
		MTZ160HW3VE	**MTZ160-3VI**	MTZ160HW4AVE	**MTZ160-4VI**		107631	87421	1¾ x 1¼	1⅛ x ¾	4	152

[1] These compressor models have threaded sight glass and ⅜" flare oil equalization line.
[2] To determine the nominal capacity for R-407A/C/F, check Coolselector or visit our Online Datasheet Generator at www.danfoss.com/odsg.
[3] Evaporator temperature = 45°F, condensing temperature = 130°F, superheat = 20°F, subcooling = 15°F
[4] Evaporator temperature = 20°F, condensing temperature = 120°F, superheat = 20°F, subcooling = 0°F
[5] Actual connection for MT and MTZ 22-28 (208-230/1/60) is rotolock 1¼" x 1" and connection with supplied sleeve is ⅝" x ½" ODF.

Capacitor values and relays for 1 phase compressors are available on page 51.
Spare parts and accessories are available on pages 53-55.

Introduction and Overview

The Maneurop® NTZ series of reciprocating compressors from Danfoss Commercial Compressors are specially designed for low evaporating temperature applications for R-404A and R-507A.

The NTZ series is optimized at -31°F with an extended evaporating temperature range from -49° to 14°F. The compressors can be operated at a suction gas temperature of 68°F even at low evaporating temperatures. A liquid injection system is not required. All components are of a high quality and precision to assure a long product life. NTZ compressors have a large internal free volume that helps to reduce the risk of liquid hammering. The electrical motor is fully suction gas cooled which means that no additional body cooling is required and it allows the compressors to be insulated with an acoustic hood.

Nomenclature / Model No.

NT Z 048 A 4 L R1 A

- **NT**: Compressor type — **NT:** low temperature reciprocating compressor
- **Z**: Refrigerant & oil — **Z:** R-404A, R-507A, POE oil
- **048**: Displacement (cm^3/rev)
- **A**: UL index indicator
- **4**: Motor voltage code
  - **1**: 208-230 V / 1 ph / 60 Hz
  - **3**: 200-230 V / 3 ph / 60 Hz
  - **4**: 380-400 V / 3 ph / 50 Hz, 460 V / 3 ph / 60 Hz
  - **5**: 230 V / 1 ph / 50 Hz
  - **9**: 380 V / 3 ph / 60 Hz
- **L**: Motor Protection — **L:** Internal motor protection
- **R1**: Equipment version — **R1:** Rotolock connections, oil equalization, sight glass
- **A**: **A:** Evolution index

Product Selection

208-230/1/60			200-230/3/60			460/3/60			Connection type rotolock (in.)	Connection with supplied sleeve (in. ODF)	No. cylinders	Weight (lbs.)
Danfoss Model No.	Nominal Capacity[1] (Btu/h)	Danfoss Code No.[2]	Danfoss Model No.	Nominal Capacity[1] (Btu/h)	Danfoss Code No.[2]	Danfoss Model No.	Nominal Capacity[1] (Btu/h)	Danfoss Code No.[2]				
NTZ048A1LR1A	4547	**120F0072**	NTZ048A3LR1A	4490	**120F0026**	NTZ048A4LR1A	4490	**120F0001**	1¼ x 1	⅝ x ½	1	46
NTZ068A1LR1A	6649	**120F0073**	NTZ068A3LR1A	7518	**120F0027**	NTZ068A4LR1A	7518	**120F0002**	1¼ x 1	⅝ x ½	1	51
NTZ096A1LR1A	9155	**120F0074**	NTZ096A3LR1A	9110	**120F0028**	NTZ096A4LR1A	9110	**120F0003**	1¾ x 1¼	⅞ x ¾	2	77
NTZ108A1LR1A	10805	**120F0075**	NTZ108A3LR1A	10536	**120F0029**	NTZ108A4LR1A	10536	**120F0004**	1¾ x 1¼	⅞ x ¾	2	77
NTZ136A1LR1A	13901	**120F0076**	NTZ136A3LR1A	13901	**120F0030**	NTZ136A4LR1A	13901	**120F0005**	1¾ x 1¼	1⅛ x ¾	2	77
			NTZ215A3LR1A	21461	**120F0031**	NTZ215A4LR1A	21461	**120F0006**	1¾ x 1¼	1⅛ x ¾	4	137
			NTZ271A3LR1A	29788	**120F0032**	NTZ271A4LR1A	29788	**120F0007**	1¾ x 1¼	1⅛ x ¾	4	141

[1] Evaporating temperature = -25°F, condensing temperature = 105°F, superheat = 20°F, subcooling = 0°F
[2] Single compressor, threaded sight glass, ⅜" oil equalization connection

Capacitor values and relays for 1 phase compressors are available on page 51.
Spare parts and accessories are available on pages 53-55.

Introduction and Overview

Danfoss Residential and Light Commercial Air Conditioning Scroll Compressors install quickly and easily. These compressors feature a design that minimizes internal parts, decreasing overall weight, and significantly reducing the sound produced during operation. With a bolt pattern and liquid and suction line connections that match up almost identically to those of other major scroll compressor manufacturers, Danfoss scroll compressors can be used to replace compressors made by both Danfoss and other companies.

(See Code Nos. for wire harnesses on page 55)

Nomenclature / Model No.

H R M 025 U 1 L P 6

Application
- **H:** high temperature / air conditioning

Family
- **C:** light commercial scroll
- **R:** residential scroll (new platform)
- **L:** light commercial scroll (new platform)

Refrigerant & oil
- **M:** R-22, alkylbenzene (AB) oil
- **P:** R-407C, PVE oil
- **H:** R-410A, PVE oil
- **J:** R-410A, PVE oil

Nominal capacity
In thousand Btu/h at 60 Hz, ARI conditions

Model variation
- **T:** design optimized for 45° / 130°F
- **U:** design optimized for 45° / 100°F

Motor voltage code
- **1:** 208-230 V / 1ph / 60 Hz
- **2:** 200-220 V / 3 ph / 50Hz & 208-230 V /3 ph / 60 Hz
- **4:** 380-400 V /3 ph / 50 Hz & 460 V / 3 ph / 60 Hz
- **5:** 220-240 V / 1 ph / 50 Hz
- **7:** 500 V / 3 ph / 50 Hz & 575 V / 3 ph / 60 Hz
- **9:** 380 V / 3 ph / 60 Hz

Motor protection
- **L:** internal motor protection

Tubing and electrical connections
- **P:** brazed connections, spade terminals
- **C:** brazed connections, screw terminals

Other features
- **6:** none
- **7:** threaded oil sight glass
- **8:** brazed oil and gas equalization connections

Scan the QR Code for a video of a scroll compressor replacement or visit http://bit.ly/resscroll

Product Selection

Refrigerant	Voltage/ Phase/ Frequency	Tons (approx.)	Competitor Model No.	Danfoss Standard Model No.	Danfoss Wholesale			
					Model No.	Solder ODF connection (in.)	Code No.	Weight (lbs.)
R-22	208-230/1/60	2	ZR25K-PFV	HRM025T1LP6	HRM025T1LP6	¾ x ½	**120U2780**	68
		2½	ZR28K*-PFV	HRM032U1LP6	HRM032U1LP6	¾ x ½	**120U0921**	68
			ZR32K*-PFV					
		3	ZR34K*-PFV	HRM034U1LP6	HRM038U1LP6	¾ x ½	**120U0931**	68
			ZR36K*-PFV	HRM038U1LP6				
		3½	ZR40K*-PFV	HRM040U1LP6	HRM042U1LP6	¾ x ½	**120U0941**	68
			ZR42K*-PFV	HRM042U1LP6				
		4	ZR47K*-PFV	HRM047U1LP6	HRM047U1LP6	⅞ x ½	**120U0951**	68
		4½	ZR54K*-TF5	HRM054U1LP6	HRM054U1LP6	⅞ x ½	**120U1511**	82
		5	ZR57K*-PFV	HRM058U1LP6	HRM060U1LP6	⅞ x ½	**120U1546**	82
			ZR61K*-PFV	HRM060U1LP6				
	208-230/3/60	3½	ZR42K*-TF5	HRM042U2LP6	HRM042U2LP6	¾ x ½	**120U1111**	68
		4	ZR47K*-TF5	HRM047U2LP6	HRM047U2LP6	⅞ x ½	**120U1131**	68
		4½	ZR54K*-TF5	HRM054U2LP6	HRM054U2LP6	⅞ x ½	**120U1871**	82
		5	ZR57K*-TF5	HRM058U2LP6	HRM060U2LP6	⅞ x ½	**120U1881**	82
			ZR61K*-TF5	HRM060U2LP6				
		6	ZR72K*-TF5	HLM072T2LC6	HLM075T2LC6	⅞ x ½	**120U1901**	82
				HLM075T2LC6				
		7	ZR81KC-TF5	HLM081T2LC6	HLM081T2LC6	⅞ x ¾	**120U1911**[1]	82
		8	ZR94KC-TF5	HCM094T2LC6	HCM094T2LC6	1⅛ x ⅞	**120U0891**[1]	97
		10	ZR125KC-TF5 ZR12M3*-TWC	HCM120T2LC6	HCM120T2LC6	1⅛ x ⅞	**120U0761**[1]	100
	460/3/60	4	ZR47K*-TFD	HRM047U4LP6	HRM047U4LP6	⅞ x ½	**120U1051**	68
		5	ZR57K*-TFD	HRM058U4LP6	HRM060U4LP6	⅞ x ½	**120U1736**	82
			ZR61K*-TFD	HRM060U4LP6				
		6	ZR72K*-TFD	HLM072T4LC6	HLM075T4LC6	⅞ x ½	**120U1761**	82
				HLM075T4LC6				
		7	ZR81KC-TFD	HLM078T4LC6	HLM081T4LC6	⅞ x ¾	**120U1776**	82
				HLM081T4LC6				
		8	ZR94KC-TFD	HCM094T4LC6	HCM094T4LC6	1⅛ x ⅞	**120U0581**[1]	97
		9	ZR108KC-TFD	HCM109T4LC6	HCM109T4LC6	1⅛ x ⅞	**120U0366**[1]	100
			ZR11M3-TWD					
		10	ZR12M3-TWD	HCM120T4LC6	HCM120T4LC6	1⅛ x ⅞	**120U0391**[1]	100

[1] Additional adjustments may be required when replacing a competitor's compressor over 81K Btu/h, as suction and discharge connections may vary significantly.
Full range of models (refrigerant, tons and voltage codes) available. Check Coolselector or visit our Online Datasheet Generator at www.danfoss.com/odsg.
Capacitor values and relays for 1 phase compressors are available on page 51.
Spare parts and accessories are available on page 55.

Refrigerant	Voltage/ Phase/ Frequency	Tons (approx.)	Competitor Model No.	Danfoss Standard Model No.	Danfoss Wholesale			
					Model No.	Solder ODF connection (in.)	Code No.	Weight (lbs.)
R-410A	208-230/1/60	2½	ZP29K5E-PFV	HRH029U1LP6	HRH032U1LP6	¾ x ½	**120U1141**	68
			ZP31K5E-PFV	HRH031U1LP6				
			ZP32K3E-PFV	HRH032U1LP6				
		3	ZP34K5E-PFV	HRH034U1LP6	HRH038U1LP6	¾ x ½	**120U1156**	71
			ZP36K*E-PFV	HRH036U1LP6				
			ZP38K*E-PFV	HRH038U1LP6				
		3½	ZP39K5E-PFV	HRH039U1LP6	HRH040U1LP6	⅞ x ½	**120U1161**	71
			ZP41K3E-PFV	HRH040U1LP6				
		4	ZP49K5E-PFV	HRH047U1LP6	HRH048U1LP6	⅞ x ½	**120U2582**	71
				HRH048U1LP6				
		4½	ZP50K3E-PFV	HRH050U1LP6	HRH054U1LP6	⅞ x ½	**120U1301**	82
			ZP51K5E-PFV					
			ZP54K*E-PFV	HRH054U1LP6				
		5	ZP57K*E-PFV	HRH056U1LP6	HLH061T1LP6	⅞ x ½	**120U2042**	82
			ZP61K5E-PFV	HLH061T1LP6				
	208-230/3/60	3	ZP36K*E-TF5	HRH036U2LP6	HRH040U2LP6	⅞ x ½	**120U1276**	71
			ZP38K*E-TF5	HRH038U2LP6				
			ZP41K3E-TF5	HRH040U2LP6				
		4	ZP49K5E-TF5	HRH047U2LP6	HRH050U2LP6	⅞ x ½	**120U2859**	68
				HRH048U2LP6				
			ZP50K3E-TF5	HRH050U2LP6				
		5	ZP61KCE-TF5	HLH061T2LC6	HLH061T2LC6	⅞ x ½	**120U2062**	82
		5½	ZP67KCE-TF5	HLH068T2LC6	HLH068T2LC6	⅞ x ½	**120U1481**	82
		6	ZP72KCE-TF5	HLJ072T2LC6	HLJ072T2LC6	⅞ x ½	**120U1486**	82
		7	ZP83KCE-TF5	HLJ083T2LC6	HLJ083T2LC6	⅞ x ½	**120U1491**[1]	82
		7½	ZP90KCE-TF5	HCJ090T2LC6	HCJ090T2LC6	1⅛ x ⅞	**120U2307**[1]	100
		8½	ZP103KCE-TF5	HCJ105T2LC6	HCJ105T2LC6	1⅛ x ⅞	**120U2327**[1]	100
		10	ZP120KCE-TF5	HCJ120T2LC6	HCJ120T2LC6	1⅛ x ⅞	**120U2347**[1]	100
	460/3/60	3	ZP36K*E-TFD	HRH036U4LP6	HRH040U4LP6	⅞ x ½	**120U1211**	71
			ZP38K3E-TFD	HRH038U4LP6				
			ZP41K3E-TFD	HRH040U4LP6				
		4	ZP44K*E-TFD	HRH047U4LP6	HRH049U4LP6	⅞ x ½	**120U1366**	82
			ZP49K5E-TFD	HRH048U4LP6				
			ZP50K3E-TFD	HRH049U4LP6				
		5	ZP61KCE-TFD	HLH061T4LC6	HLH061T4LC6	⅞ x ½	**120U2052**	82
		5½	ZP67KCE-TFD	HLH068T4LC6	HLH068T4LC6	⅞ x ½	**120U1391**	82
		6	ZP72KCE-TFD	HLJ072T4LC6	HLJ072T4LC6	⅞ x ½	**120U1396**	82
		7	ZP83KCE-TFD	HLJ083T4LC6	HLJ083T4LC6	⅞ x ½	**120U1401**[1]	82
		7½	ZP90K*E-TFD	HCJ090T4LC6	HCJ090T4LC6	1⅛ x ⅞	**120U2302**[1]	100
		8½	ZP104KCE-TFD	HCJ105T4LC6	HCJ105T4LC6	1⅛ x ⅞	**120U2322**[1]	100
		10	ZP120K*E-TFD	HCJ120T4LC6	HCJ120T4LC6	1⅛ x ⅞	**120U2342**[1]	100

[1] Additional adjustments may be required when replacing a competitor's compressor over 81K Btu/h, as suction and discharge connections may vary significantly.
Full range of models (refrigerant, tons and voltage codes) available. Check CoolSelector or visit our Online Datasheet Generator at www.danfoss.com/odsg.
Capacitor values and relays for 1 phase compressors are available on page 51. Spare parts and accessories are available on page 55.

Introduction and Overview

Danfoss Performer® Universal Scroll Compressors are designed to serve as quick, easy replacements for most commercial air conditioning scroll compressors. These compressors come with a bolt pattern, suction and discharge lines, and performance characteristics that match up directly with some competitors' products.

Select compressor using the product selection table below based on refrigerant, nominal capacity, connection and voltage.

Nomenclature / Model No.

SM	**115**	**S**	**4**	**Q**	**C**
SH	**090**	**A**	**4**	**AL**	**C**

Refrigerant & oil
SM: R-22, mineral oil
SY: R-22, R-407C (SY185-300), POE oil
SZ: R-407C, R-134a, R-404A / R-507A (SZ084-185), POE oil
SH: R-410A, POE oil

Nominal Capacity
In thousand Btu/h at 60 Hz, ARI Conditions

UL index

Motor voltage code
3: 200-230 V / 3 ph / 60 Hz
4: 380-400 V / 3 ph / 50 Hz & 460 V / 3 ph / 60 Hz
6: 230 V / 3 ph / 50 Hz
7: 500 V / 3 ph / 50 Hz & 575 V / 3 ph / 60 Hz
9: 380 V / 3 ph / 60 Hz

Evolution index

Version (for SM, SY, SZ)	Motor protection module	Connection	Module voltage	Applies to
V	Internal overload protector	brazed		084, 090, 100, 110, 120, 148, 161
A		brazed		112, 124, 147
C	Internal thermostat	brazed		115, 125, 160, 175, 185
Q		brazed		
R		rotolock		
P	Electronic protection module	brazed	24V AC	
X		brazed	230V	
S		rotolock	24V AC	
Y		rotolock	230V	
CA		brazed	24V AC	240, 300, 380
CB		brazed	115/230V	
PA		rotolock	24V AC	
PB		rotolock	115/230V	
AC	contact OEM			

Version (for SH)	Motor protection module	Connection	Module voltage	Applies to
AL	Internal overload protector	brazed		090, 105, 120, 140, 161, 175, 184
AA	Electronic protection module	brazed	24V AC	240, 295, 300, 380, 485
AB		brazed	115/230V	
AB		brazed	230V	180
AC	contact OEM			

Product Selection

Refrigerant	Voltage/ Phase/ Frequency	Tons (approx.)	Competitor Model Nos.[1]		Danfoss Model No.	Solder ODF connection (in.)	Motor protection	Danfoss Code No.[2]	Weight (lbs.)	Solder sleeve adaptor set to rotolock connections
R-22	200-230/3/60	7½		ZR94KC-TF5	SM090S3VC	1⅛ x ¾	Internal overload protector	**SM090-3VI**	143	**7765005**
		9⅓	CSHA-093R CSHS-093R	ZR108KC-TF5 ZR11M3-TWC	SM115S3QC	1⅜ x ⅞	Internal thermostat, external overload needed	**SM115-3QAI**	172	**7765006**
		10	CSHA-100R CSHS-100R	ZR125KC-TF5 ZR12M3-TWC	SM125S3QC	1⅜ x ⅞	Internal thermostat, external overload needed	**SM125-3QAI**	172	**7765006**
		12½	CSHA-125R	ZR16M3-TWC	SM160T3CC	1⅝ x 1⅛	Internal thermostat, external overload needed	**SM160-3CBI**	198	**7765028**
		14	CSHA-140R CSHS-140R		SM175S3QC	1⅝ x 1⅛	Internal thermostat, external overload needed	**SM175-3QAI**	220	**7765028**
		15	CSHA-150R CSHS-150R	ZR190KC-TW5	SM185S3QC	1⅝ x 1⅛	Internal thermostat, external overload needed	**SM185-3QAI**	220	**7765028**
	460/3/60	7½		ZR94KC-TFD	SM090S4VC	1⅛ x ¾	Internal overload protector	**SM090-4VI**	143	**7765005**
		9⅓	CSHA-093K CSHS-093K	ZR108KC-TFD ZR11M3-TWD	SM115S4QC	1⅜ x ⅞	Internal thermostat, external overload needed	**SM115-4QAI**	172	**7765006**
		10	CSHA-100K CSHS-100K	ZR125KC-TFD ZR12M3-TWD	SM125S4QC	1⅜ x ⅞	Internal thermostat, external overload needed	**SM125-4QAI**	172	**7765006**
		12½	CSHA-125K	ZR160KC-TW5 ZR16M3-TWD	SM160T4CC	1⅝ x 1⅛	Internal thermostat, external overload needed	**SM160-4CBI**	198	**7765028**
		14	CSHA-140K CSHS-140K		SM175S4QC	1⅝ x 1⅛	Internal thermostat, external overload needed	**SM175-4QAI**	220	**7765028**
		15	CSHA-150K CSHS-150K	ZR190KC-TWD	SM185S4QC	1⅝ x 1⅛	Internal thermostat, external overload needed	**SM185-4QAI**	220	**7765028**

[1] Competitor Model Nos. beginning "ZR" may have different footprint, suction, discharge or height compared to Danfoss Model No.

[2] Code Nos. ending "QAI" include threaded sight glass, ⅜" ODF oil equalization connection, brazed suction and discharge connections and mounting bracket. Code Nos. ending "VI" and "CBI" have threaded sight glass, ⅜" flare SAE oil equalization connection and brazed suction and discharge connections.

Full range of models (refrigerant, tons and voltage codes) available. Check Coolselector or visit our Online Datasheet Generator at www.danfoss.com/odsg.

Spare parts and accessories are available on pages 55-56.

Refrigerant	Voltage/ Phase/ Frequency	Tons (approx.)	Competitor Model Nos.[1]		Danfoss Model No.	Solder ODF connection (in.)	Motor protection	Danfoss Code No.	Weight (lbs.)	Solder sleeve adaptor set to rotolock connections
R-410A	200-230/3/60	7½	CSHD-089J CSHD-092J	ZP90KCE-TF5 ZP91KCE-TF5	SH090A3ALC	1⅛ x ⅞	Internal overload protector	**120H0001**	128	**120Z0125**
		8¾	CSHD-105J	ZP103KCE-TF5	SH105A3ALC	1⅜ x ⅞	Internal overload protector	**120H0209**	142	**120Z0405**
		10	CSHD-125J	ZP120KCE-TF5	SH120A3ALC	1⅜ x ⅞	Internal overload protector	**120H0011**	142	**120Z0405**
		11⅔	CSHD-142J	ZP137KCE-TF5	SH140A3ALC	1⅜ x ⅞	Internal overload protector	**120H0199**	148	**120Z0405**
		13½	CSHD-161J	ZP154KCE-TW5	SH161A3ALC	1⅜ x ⅞	Internal overload protector	**120H0021**	152	**120Z0405**
		15		ZP182KCE-TW5	SH184A3ALC	1⅜ x ⅞	Internal overload protector	**120H0359**	159	**120Z0405**
		20		ZP235KCE-TW5[2]	SH240A3AAE	1⅝ x 1⅛	24V ac	**120H0289**	238	**7765028**
					SH240A3ABE		115/230V	**120H0297**		
		25		ZP285KCE-TW5[2] ZP295KCE-TWC[2]	SH295A3AAE	1⅝ x 1⅛	24V ac	**120H0851**	245	**7765028**
					SH295A3ABE		115/230V	**120H0853**		
		30		ZP385KCE-TWC[2] ZP385KCE-TW5[2]	SH380A3AAE	1⅝ x 1⅛	24V ac	**120H0151**	355	**7765028**
					SH380A3ABE		115/230V	**120H0152**		
	460/3/60	7½	CSHD-089K CSHD-092K	ZP90KCE-TFD	SH090A4ALC	1⅛ x ⅞	Internal overload protector	**120H0003**	128	**120Z0125**
		8¾	CSHD-105K	ZP103KCE-TFD	SH105A4ALC	1⅜ x ⅞	Internal overload protector	**120H0211**	142	**120Z0405**
		10	CSHD-125K	ZP120KCE-TFD	SH120A4ALC	1⅜ x ⅞	Internal overload protector	**120H0013**	142	**120Z0405**
		11⅔	CSHD-142K	ZP137KCE-TFD	SH140A4ALC	1⅜ x ⅞	Internal overload protector	**120H0201**	148	**120Z0405**
		13½	CSHD-161K	ZP154KCE-TFD[2] ZP154KCE-TWD[2]	SH161A4ALC	1⅜ x ⅞	Internal overload protector	**120H0023**	152	**120Z0405**
		15		ZP182KCE-TWD[2]	SH184A4ALC	1⅜ x ⅞	Internal overload protector	**120H0361**	159	**120Z0405**
		20		ZP235KCE-TWD[2]	SH240A4AAE	1⅝ x 1⅛	24V ac	**120H0291**	238	**7765028**
					SH240A4ABE		115/230V	**120H0299**		
		25		ZP285KCE-TWD[2] ZP295KCE-TWD[2]	SH295A4AAE	1⅝ x 1⅛	24V ac	**120H0825**	245	**7765028**
					SH295A4ABE		115/230V	**120H0827**		
		30		ZP385KCE-TWD[2]	SH380A4AAE	1⅝ x 1⅛	24V ac	**120H0253**	351	**7765028**
					SH380A4ABE		115/230V	**120H0255**		

[1] Competitor Model Nos. beginning "ZP" may have different footprint, suction, discharge or height compared to Danfoss Model No.

[2] Control voltage of external motor protection module must be checked before crossing to Danfoss Model No with 24V ac or 115/230V motor protection module.

Full range of models (refrigerant, tons and voltage codes) available. Check Coolselector or visit our Online Datasheet Generator at www.danfoss.com/odsg.

Spare parts and accessories are available on pages 55-56.

Danfoss Models	Start capacitor (µF)	Start capacitor voltage (V)	Run capacitor (µF)	Run capacitor voltage (V)	Start relay
MT/MTZ18 JA-1	100	330	25	440	RVA 6AMKL (Electrica)
MT/MTZ22 JC-1	100	330	45	440	
MT/MTZ28 JE-1	135	330	50	440	
MT/MTZ32 JF-1	100	330	45	440	
MT/MTZ36 JG-1	100	330	45	440	
MT/MTZ40 JH-1	100	330	55	440	
MT/MTZ44 HJ-1	135	330	45	440	
MT/MTZ50 HK-1	135	330	45	440	
MT/MTZ56 HL-1	200	330	55	440	
MT/MTZ64 HM-1	235	330	55	440	
NTZ048A1LR1A	100	330	25	440	RVA 6AMKL (Electrica)
NTZ068A1LR1A	135	330	50	440	
NTZ096A1LR1A	135	330	45	440	
NTZ108A1LR1A	135	330	45	440	
NTZ136A1LR1A	135	330	45	440	
HRM025	145-175	330	45	370	RVA 2AC3D (Electrica)
HRM032-034	145-175	250	45	370	RVA 2AC3D (Electrica)
HRM038	88-108	330	55	370	RVA 2AB3D (Electrica)
HRM040-045	88-108	330	60	370	RVA 2AB3D (Electrica)
HRM047	88-108	250	60	370	RVA 2AB3D (Electrica)
HRM048	161-193	250	60	370	RVA 2AB3D (Electrica)
HRM051-054	161-193	250	70	370	RVA 2AB3D (Electrica)
HRM058T1-060T1	88-108	250	55	440	RVA 4AG3D (Electrica)
HRM058U1-060U1, HLM068-081	189-227	330	80	370	RVA 2AB3D (Electrica)
HRP051	161-193	250	70	370	RVA 2AB3D (Electrica)
HLP068-081	189-227	330	80	370	RVA 2AB3D (Electrica)
HRH031	145-175	250	45	370	RVA 2AC3D (Electrica)
HRH032-034	88-108	330	50	370	RVA 2AB3D (Electrica)
HRH036	88-108	330	55	370	RVA 2B3D (Electrica)
HRH038-040	88-108	330	60	370	RVA 2AB3D (Electrica)
HRH041-051	161-193	250	70	370	RVA 2AB3D (Electrica)
HRH054-056, HLH068, HLJ072-083	189-227	330	80	370	RVA 2AB3D (Electrica)

Introduction and Overview

The most commonly replaced spare parts and accessories for the products included in this Quick Select Guide are outlined in this section. For additional accessories please consult individual product Technical brochures or contact Danfoss at 1-888-Danfoss.

Product Selection

Product, Type	Description	Danfoss Code No.	Type(s) applied to
Thermostatic Expansion Valves, Types TUA/TUAE/ T2/TE2	Bulb strap	**068U3507**	all
	Metal Gasket (24 pcs)	**068U0015**	TUA/TUAE
	Filter for orifices 0-4 (clear, 24 pcs)	**068U1706**	TUA/TUAE
	Filter for orifices 5-9 (blue, 24 pcs)	**068U0016**	TUA/TUAE
Thermostatic Expansion Valves, Type TR6	Bulb strap	**068U3507**	all
	Fitting; ⅜" ODM x Chatleff	**119F3965**	
	Fitting; ⅜" ODM x Aeroquip	**119F3966**	
Thermostatic Expansion Valves, Type TGE	Bulb strap	**067N0557**	all
Pressure Controls, Types KPU/MP	Capillary tube; 39" with ¼" flare coupling nuts on each end	**060-017166**	KPU and MP with ¼" M flare
Solenoid Valves, Type EVR	Permanent magnet coil for servicing and testing	**018F0091**	all
	Service kit; o-ring, (4) screws, armature assembly, rubber gasket	**032F0181**	EVR 2, 3
	Service kit; diaphragm, o-ring for armature tube, (4) screws T20, (4) screws T15, armature assembly, rubber gasket, o-ring for steel cover, square gasket for steel cover, support ring	**032F8166**	EVR 6
	Service kit; diaphragm assembly, o-ring, (4) screws, armature assembly, rubber gasket	**032F0185**	EVR 10
	Service kit; diaphragm assembly, o-ring, (4) screws, armature assembly, rubber gasket, flange gasket	**032F0187**	EVR 15, 18
	Service kit; diaphragm assembly, o-ring, (4) screws, armature assembly, compression spring, rubber gasket	**032F0189**	EVR 20, 22
	Manual spindle	**032F0193**	EVR 20, 22
	Piston service kit; (2) o-ring, spring, piston assembly, plastic block, rubber gasket, piston ring	**032F3236**	EVR 25
	Pilot service kit; armature tube assembly, armature, (2) Al. gaskets, orifice, o-ring	**042H0161**	EVR 25
	Seal kit; (2) Al. gaskets, (3) o-rings, (2) rubber gaskets	**032F3235**	EVR 25
	Piston service kit; (5) o-rings, Al. gasket, piston assembly, platic block, gasket, piston ring, spring	**042H0172**	EVR 32
	Pilot service kit; (2) Al. gaskets, o-ring, orifice, armature tube assembly, armature	**042H0165**	EVR 32
	Seal kit; (4) o-rings, (2) Al. gaskets, gasket	**042H0160**	EVR 32
	Piston seal kit; (5) o-rings, Al. gasket, piston assembly, plastic block, gasket, piston ring, spring	**042H0173**	EVR 40
	Seal kit; (5) o-rings, (2) Al. gaskets, gasket	**042H0160**	EVR 40
Pressure Controlled Water Valves, Types WVFX	Rebuild kit; valve disc, (2) o-rings, (8) screws, (2) diaphragms, grease and key	**003N4006**	WVFX 10, 15
	Rebuild kit; valve disc, (2) o-rings, (8) screws, (2) diaphragms, grease and key	**003N4007**	WVFX 20
	Rebuild kit; valve disc, (2) o-rings, (8) screws, (2) diaphragms, grease and key	**003N4008**	WVFX 25
	Capillary tube; 39" with ¼" flare coupling nuts on each end	**060-017166**	WVFX with ¼" M flare
	Bracket	**003N0388**	all
Pressure Regulators, Types KVP/KVR/ KVL/KVC/CPCE	Schrader valve	**034L0006**	all KVP, KVR

Product, Type	Description	Danfoss Code No.	Type(s) applied to
Ball Valves, Type GBC	Ball valve service kit	**009G7012**	GBC 6, 10, 12, 16, 18, 22
	Ball valve service kit	**009G7014**	GBC 28, 35
	Ball valve service kit	**009G7016**	GBC 42, 54, 67
	Ball valve replacement cap	**009G7210**	GBC 6, 10, 12, 16, 18, 22
	Ball valve replacement cap	**009G7211**	GBC 28, 35
	Ball valve replacement cap	**009G7212**	GBC 42, 54, 67
Condensing Units, Optyma™	Compressors, fan motors, fan blades, relays, capacitors	**various - contact Danfoss**	various
	Enclosure - E1	**119-6040**	⅛ to ⅝ hp
	Enclosure - E2	**119-6041**	⅝ to 2 hp
	Enclosure - E3	**119-6042**	2½ to 3 hp
	Enclosure - E4	**119-6043**	4 hp
	Enclosure - E5	**119-6044**	5 to 7 hp
	Enclosure - E6	**119-6045**	9 to 13½ hp
Reciprocating Compressors, Types MT/MTZ/ NTZ	Belt type crankcase heater; 54W, 230V	**7773106**	MT(Z) 018-040, NTZ048-068
	Belt type crankcase heater; 65W, 110V	**7773109**	MT(Z) 044-081, NTZ096-136
	Belt type crankcase heater; 65W, 230V	**7773107**	
	Belt type crankcase heater; 65W, 400V	**7773117**	
	Belt type crankcase heater; 65W, 460V	**120Z0466**	
	Belt type crankcase heater; 75W, 110V	**7773110**	MT(Z) 100-160, NTZ215-271
	Belt type crankcase heater; 75W, 230V	**7773108**	
	Belt type crankcase heater; 75W, 400V	**7773118**	
	Belt type crankcase heater; 75W, 460V	**120Z0464**	
	PTC heater	**PTC**	all
	Mounting kit - 1&2 cylinder compressors	**8156001**	MT(Z) 18-81, NTZ048-136
	Mounting kit - 4 cylinder compressors	**8156007**	MT(Z) 100-160, NTZ215-271
	Mineral oil, 160P; 2 liter can	**7754001**	all MT
	Mineral oil, 160P; 5 liter can	**7754002**	all MT
	POE lubricant, 160PZ; 1 liter can	**7754019**	all MTZ
	Oil sight glass and gasket	**8156019**	all
	Terminal box; include cover and clamp	**8156134**	MT(Z) 18-44 for 208-230/1/60 18-72 for 200-230/3/60 18-80 for 460/3/60, NTZ048-136 (except 136-1)
	Terminal box; include cover and clamp	**8156135**	MT(Z) 50-64 for 208-230/1/60 80-160 for 200-230/3/60 100-160 for 460/3/60, NTZ136-1, NTZ215-271

Product, Type	Description	Danfoss Code No.	Type(s) applied to
Reciprocating Compressors, Types MT/MTZ, NTZ	Blue spray paint	**8154001**	all
	Gasket Set; 1 of each size gasket for the MT(Z) line	**8156009**	all - need 2 for: MT(Z)18 for 208-230 & 460 MT(Z)22-28 for 208-230/3 and 460
	Rotolock Service Valve Set (no gaskets) Suction and Discharge	**7703004**	MT(Z)18 for 208-230 & 460 MT(Z)22-28 for 208-230/3 and 460
	Rotolock Service Valve Set (no gaskets) Suction and Discharge	**7703005**	MT(Z) 22-40 for 208-230/1 MT(Z) 32-40 for 208-230/3 & 460, NTZ048-068
	Rotolock Service Valve Set (no gaskets) Suction and Discharge	**7703006**	MT(Z) 44 to 64 for 208-230/1 MT(Z) 44-72 for 208-230/3 and 460, NTZ096-108
	Rotolock Service Valve Set (no gaskets) Suction and Discharge	**7703009**	MT(Z)80 to 160 for 208-230/3 and 460, NTZ136-271
	Solder Sleeve P02 (1¾" rotolock, 1⅛" ODF)	**8153004**	Suction: MT(Z) 80-160 for 208-230/3 and 460, NTZ
	Solder Sleeve P06 (1" rotolock, ½" ODF)	**8153007**	Suction: MT(Z) 18 for 208-230/1 MT(Z) 18-28 for 208-230/3 and 460 Discharge: MT(Z) 22-40 for 208-230/1 MT(Z) 32-40 for 208-230/3 and 460, NTZ
	Solder Sleeve P04 (1¼" rotolock, ¾" ODF)	**8153008**	Discharge: MT(Z) 44-64 for 208-230/1 MT(Z) 44-160 for 208-230/3 and 460, NTZ
	Solder Sleeve P01 (1" rotolock, ⅜" ODF)	**8153010**	Discharge: MT(Z) 18 for 208-230/1 MT(Z) 18-28 for 208-230/3 and 460, NTZ
	Solder Sleeve P09 (1¼" rotolock, ⅝" ODF)	**8153011**	Suction: MT(Z) 22-40 for 208-230/1 MT(Z) 32-40 for 208-230/3 and 460, NTZ
	Solder Sleeve P07 (1¾" rotolock, ⅞" ODF)	**8153013**	Suction: MT(Z) 44-64 for 208-230/1 MT(Z) 44-72 for 208-230/3 and 460, NTZ
	Rotolock Nut, 1"	**8153122**	Suction: MT(Z) 18 for 208-230/1 MT(Z) 18-28 for 208-230/3 and 460 Discharge: MT(Z) 18-40 for 208-230/1 MT(Z) 18-40 for 208-230/3 and 460, NTZ

Product, Type	Description	Danfoss Code No.	Type(s) applied to
Reciprocating Compressors, Types MT/MTZ, NTZ	Rotolock Nut, 1¼"	**8153123**	Suction: MT(Z) 22-40 for 208-230/1 MT(Z) 32-40 for 208-230/3 and 460 Discharge: MT(Z) 44-64 for 208-230/1 MT(Z) 44-160 for 208-230/3 and 460, NTZ
	Rotolock Nut, 1¾"	**8153124**	Suction: MT(Z) 44-64 for 208-230/1 MT(Z) 44-160 for 208-230/3 and 460, NTZ
Scroll Compressors, Types HRM/HLM/ HCM/ HRH/HLH/ HLJ/HCJ	Wire harness; 5 feet, for 200-230V scroll compressor	**120Z5056**	models with spade terminals
	Wire harness; 5 feet, for 380-575V scroll compressor	**120Z5057**	models with spade terminals
	Belt type crankcase heater; 40W, 230V	**120Z0055**	HRM032-047, HRH031-040
	Belt type crankcase heater; 40W, 400V	**120Z0056**	
	Belt type crankcase heater; 50W, 230V	**120Z0057**	HRM048-060, HLM068-075, HRH044-056, HLH061-068, HLJ072-075
	Belt type crankcase heater; 50W, 400V	**120Z0058**	
	Belt type crankcase heater; 65W, 230V	**120Z0059**	HLM078-081, HCM094-120, HLJ083, HCJ090-120
	Belt type crankcase heater; 65W, 400V	**120Z0060**	
	Belt type crankcase heater; 70W, 230V	**120Z5040**	
	Belt type crankcase heater; 70W, 400/440V	**120Z5041**	
	POE lubricant ; 1 liter can	**120Z5033**	HRH, HLH except HLH061
	PVE lubricant, 210HV (FVC68D); 1 liter can	**120Z5034**	HRH, HLH, HLJ, HCJ
	Mounting kit for 1 compressor; 4 grommets, 4 sleeves, 4 bolts, 4 washers	**120Z5005**	all
	Terminal cover, spade terminals (round)	**120Z5015**	all
	Terminal cover, screw terminals (square)	**120Z5018**	all
Scroll Compressors, Type SM/SH	Solder sleeve adapter set (1¾" rotolock, 1⅛" ODF), (1¼" rotolock, ⅞" ODF)	**120Z0125**	SH090
	Solder sleeve adapter set (1¾" rotolock, 1⅜" ODF), (1¼" rotolock, ⅞" ODF) **diameter restrictor*	**7765006**	SM115, 125, 160 SH105, 120, 140, 161, 184
	Solder sleeve adapter set (1¾" rotolock, 1⅜" ODF), (1¼" rotolock, ⅞" ODF)	**120Z0405**	SM115, 160 SH105, 120, 140, 161, 184
	Solder sleeve adapter set (2¼" rotolock, 1⅝" ODF), (1¾" rotolock, ⅞" ODF)	**7765028**	SM175, 185 SH240, 380
	Motor protection module, 24V DC	**120Z0141**	SM115, 125, 160, 185
	Motor protection module, 24V AC	**8169020**	SM115, 125, 160, 185
	Motor protection module, 230V	**8169021**	SM115, 125, 160, 185
	Motor protection module, 24V DC	**120Z0140**	SH240, 295, 380
	Motor protection module, 24V AC	**8169015**	SH240, 295, 380
	Motor protection module, 115/230V	**8169016**	SH240, 295, 380
	Belt type crankcase heater; 65W, 460V	**120Z0466**	SM115, 125, 160 SH090, 105, 120, 140, 161, 175, 184
	Belt type crankcase heater; 65W, 110V	**7773109**	
	Belt type crankcase heater; 65W, 230V	**7773107**	
	Belt type crankcase heater; 65W, 400V	**7773117**	
	Belt type crankcase heater; 65W, 400V	**120Z0039**	

Product, Type	Description	Danfoss Code No.	Type(s) applied to
Scroll Compressors, Type SM/SH	Belt type crankcase heater; 75W, 110V	**7773110**	SM175, 185 SH240, 295
	Belt type crankcase heater; 75W, 230V	**7773108**	
	Belt type crankcase heater; 75W, 400V	**7773118**	
	Belt type crankcase heater; 75W, 460V	**120Z0464**	
	Belt type crankcase heater; 130W, 110V	**7773121**	SH380
	Belt type crankcase heater; 130W, 230V	**7773122**	
	Belt type crankcase heater; 130W, 400V	**7773123**	
	Service kit for terminal box; includes cover, clamp, terminal block connector	**8156135**	SH090, 105, 120, 140, 161
	Terminal box, including cover	**8156139**	SM115, 125, 160, 175, 185
	Terminal box cover	**120Z0413**	SH140-3, 161-3, 184, 175
	Terminal box, including cover	**120Z0458**	SH240, 295, 380
	Oil sight glass with gaskets	**8156019**	SM090, 115, 125, 160, 175, 185
	Mounting kit for 1 compressor; 4 grommets, 4 sleeves, 4 bolts, 4 washers	**8156138**	SM115-185
	Mounting kit for 1 compressor; 4 grommets, 4 sleeves, 4 bolts, 4 washers	**120Z0066**	SH090, 105, 120, 140, 161, 175, 184
	Mounting kit for 1 compressor; 4 rigid grommets, 4 sleeves, 4 bolts, 4 washers	**7777045**	SH240, 295, 380
	Mineral oil, 160P; 2 liter can	**7754001**	all SM
	Mineral oil, 160P; 5 liter can	**7754002**	all SM
	Blue spray paint	**8154001**	all
	Oil equalization adaptor. To connect ⅞" tube on 22mm oil sight glass connection; includes (1) 22mm to ⅞", (2) gaskets.	**120Z0164**	all SM, SH
	Oil equalization adaptor. To connect ½" tube on 22mm oil sight glass connection; includes (1) 22mm to ½", (2) gaskets.	**120Z0165**	all SM, SH
	Oil equalization adaptor kit for trio mounting; oil fittings, gasket and adaptors (copper pipes not included).	**7773112**	SM 160, 185

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