



Oil separators, Type OUB

Introduction


The oil separator type OUB is for use in all refrigeration plant where the compressor lubricating oil must be returned direct to the compressor oil sump under all operating conditions.

In this way lubricating oil from the compressor is prevented from circulating with the refrigerant in the refrigeration system itself.

Features

- *Ensures oil return to compressor oil sump.*
Prevents compressor breakdown caused by lack of lubrication.
Increases compressor operating life.
- *High efficiency*
Caused by interaction of reduced flow velocity change of flow direction for oil concentration, oil separation collection of separated oil at high temperature, and automatic oil return to crankcase.
- *Protects against liquid hammer in compressor*
- *Better utilisation of condenser and evaporator capacity (no oil-gas collection).*
- *Pulsation and noise damping on high-pressure side of system.*

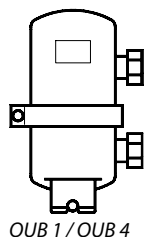
Approvals

- UL listed, file 3736
- CSA certified, LR51840

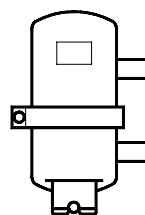
Technical data

<p><i>Refrigerants</i> CFC, HCFC, HFC</p> <p><i>Max. working pressure</i> PS = 28 bar</p> <p><i>Max. test pressure</i> p' = 36.5 bar</p>	<p><i>Temperature of medium</i> -40 to 120°C</p> <p><i>Net volume</i> OUB 1: 0.52 l OUB 4: 2.46 l</p> <p><i>Oil reservoir</i> OUB 1: 0.1 l OUB 4: 0.5 l</p>
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Ordering



OUB 1 / OUB 4



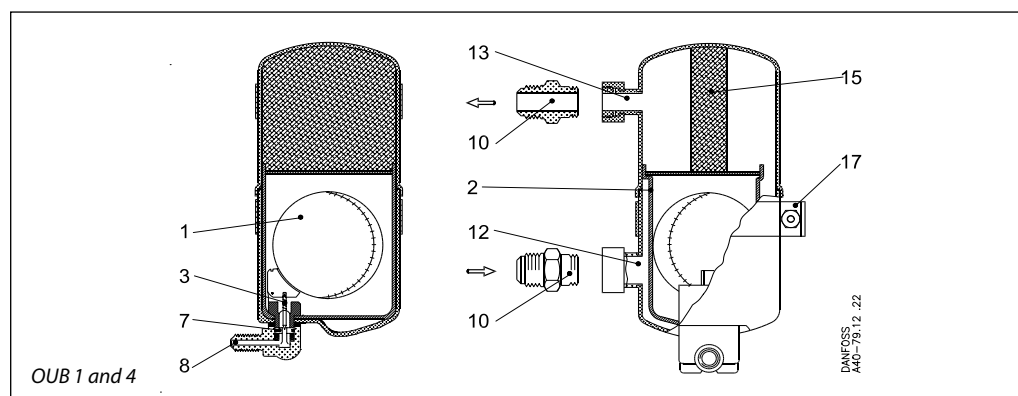
OUB 1s

Type	Connection			Rated plant capacity kW					Code no. for OUB + unions (straightway)						
	in.	mm	Version	R22	R134a	R404A	R507	R407C							
OUB 1	3/8	10	Flare	3.1	2.5	3.5	3.5	4.4	040B0010 + 2 × 040B0132						
	3/8		Solder						040B0010 + 2 × 040B0140						
		10	Solder						040B0010 + 2 × 040B0138						
	1/2	12	Flare						040B0010 + 2 × 040B0134						
	1/2		Solder						040B0010 + 2 × 040B0142						
		12	Solder						040B0010 + 2 × 040B0139						
	5/8	16	Flare						040B0010 + 2 × 040B0136						
	5/8	16	Solder						040B0010 + 2 × 040B0144						
Without connection unions									040B0010						
OUB 1s ¹⁾		10	Solder	3.1	2.5	3.5	3.5	4.4	040B0023						
OUB 1s ²⁾		10	Solder						040B0029						
OUB 4	5/8	16	Flare	11.6	9.6	12.8	12.8	16.0	040B0040 + 2 × 040B0256						
	5/8	16	Solder						040B0040 + 2 × 040B0266						
	3/4	18	Flare						040B0040 + 2 × 040B0258						
	3/4		Solder						040B0040 + 2 × 040B0268						
	7/8		Solder						040B0040 + 2 × 040B0270						
		22	Solder						040B0040 + 2 × 040B0264						
	1	25	Flare						040B0040 + 2 × 040B0260						
	1		Solder						040B0040 + 2 × 040B0272						
	1 1/8		Solder						040B0040 + 2 × 040B0274						
		28	Solder						040B0040 + 2 × 040B0265						
	Without connection unions									040B0040					

¹⁾ 1/4 in. flare connection to oil return line.
²⁾ 6 mm ODF solder connection to oil return line.

Design Function

1. Float
2. Oil container
3. Float needle
7. Orifice
8. Return oil connection (1/4 in. / 6 mm flare / solder)
10. Connection nipple
12. Inlet connection refrigerant vapour
13. Outlet connection refrigerant vapour
15. Oil concentrator
17. Fixing strap



The very effective function of the OUB is due to the interaction of the following:

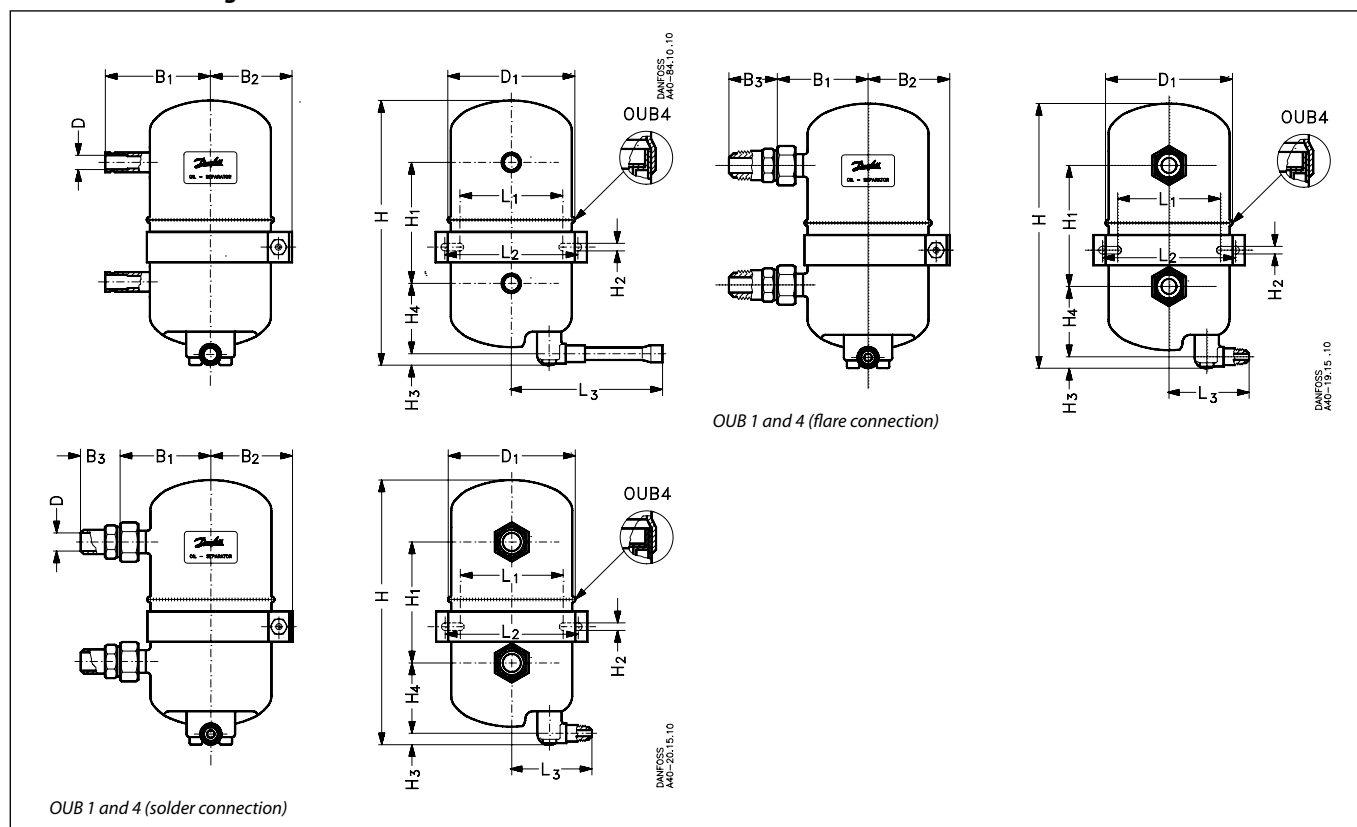
- velocity and change of flow direction of the incoming mixture of oil and refrigerant
- oil concentration, separation, and filtration
- storage of separated oil at high temperature, thus preventing absorption of refrigerant.

Refrigerant vapour is led through the inlet connection (12). The oil contained in the vapour is separated as a result of the change in velocity and direction through the oil concentrator (15) which at the same time also acts as an oil filter. When the superheated refrigerant vapour flows

around the oil container (2) some of the superheat is given off. In this way the oil container reaches a constant high temperature and the separated oil becomes stored in the warm state, i.e. with as low a refrigerant content as possible. Thus, refrigerant is prevented from flowing to the crankcase where it could cause violent boiling.

The float (1) opens the needle valve (3) depending on the amount of oil, whereupon the condensing pressure forces the oil back to the crankcase so ensuring automatic oil return.

Dimensions and weights



Type	Flare connection		H mm	H ₁ mm	H ₂ mm	H ₃ mm	H ₄ mm	L ₁ mm	L ₂ mm	L ₃ mm	B ₁ mm	B ₂ mm	B ₃ mm	∅ D ₁ mm	Weight kg
	in.	mm													
OUB 1	3/8	10	177	80	5.5	9	49	69	89	50	60	55	30	81	1.2
	1/2	12	177	80	5.5	9	49	69	89	50	60	55	33	81	1.3
	5/8	16	177	80	5.5	9	49	69	89	50	60	55	38	81	1.4
OUB 4	5/8	16	263	126	8.5	9	67	111	143	72	94	85	44	131	4.6
	3/4	18	263	126	8.5	9	67	111	143	72	94	85	49	131	4.7
	1	25	263	126	8.5	9	67	111	143	72	94	85	51	131	4.8

Type	Solder connection		H mm	H ₁ mm	H ₂ mm	H ₃ mm	H ₄ mm	L ₁ mm	L ₂ mm	L ₃ mm	B ₁ mm	B ₂ mm	B ₃ mm	∅ D ₁ mm	∅ D mm	Weight kg
	in.	mm														
OUB 1	3/8	10	177	80	5.5	9	49	69	89	50	60	55	34	81	9.6	1.2
	1/2	12	177	80	5.5	9	49	69	89	50	60	55	38	81	12.8	1.2
	5/8	16	177	80	5.5	9	49	69	89	50	60	55	42	81	16.0	1.3
OUB 1s		10	177	80	5.5	9	49	69	89	50	65	55		81	10.0	1.2
		10	177	80	5.5	9	49	69	89	81	65	55		81	10.0	1.2
OUB 4	5/8	16	263	126	8.5	9	67	111	143	72	94	85	40	131	16.0	4.3
	3/4	18	263	126	8.5	9	67	111	143	72	94	85	45	131	19.1	4.3
	7/8	22	263	126	8.5	9	67	111	143	72	94	85	45	131	22.3	4.3
	1	25	263	126	8.5	9	67	111	143	72	94	85	45	131	25.5	4.3
	1 1/8	28	263	126	8.5	9	67	111	143	72	94	85	47	131	28.7	4.3

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