

Oil Diffusion Vacuum Pump **ULK Series**



ULK-10A

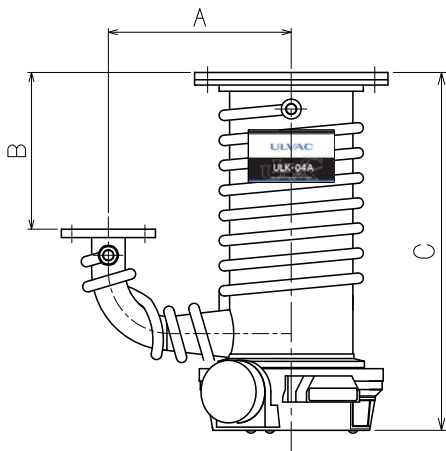
ULVAC's diffusion pumps ULK Series have been developed not only for superior performance, but also for extremely low operating cost.

Features

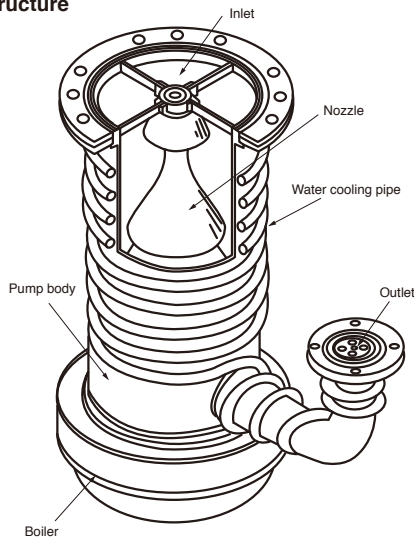
- Shorter pump body height
Loose flange system adopted (Except the outlet port flange for ULK-04A and 06A)
- Loose flange system allows specification and installation of an arbitrary size flange, like ISO, ANSI, IMSI, etc. (Except the outlet port flange for ULK-04A and 06A)
- Easy to clean due to simple disassembly of the pump
- Check mechanism prevents the working fluid from flowing to the fore pump side.
- Stable operation at the 10^{-2} Pa level.
- High critical backing pressure (see below list)

* Please specify the model, type of flange, working fluid, voltage and quantity when ordering.

External Dimension Diagram (unit: mm)



Structure



Item		Model				
		ULK-04A	ULK-06A	ULK-10A	ULK-14A	
Dimensions	A	mm	175	250	340	340
	B	mm	150	180	240	240
	C	mm	341	449	650	670
Inlet diameter	Flange		Corresponds to VG100	Corresponds to VG150	Corresponds to VG250	Corresponds to VG350
	Outside diameter	mm	185	235	350	450
	Bolt holes	No. - dia.	8-dia. 12	8-dia. 12	12-dia. 15	12-dia. 15
	P.C.D	mm	160	210	320	420
	Gasket groove diameter (Inside diameter x Width x Depth)		120 x 4 x 3	175 x 4 x 3	275 x 7.5 x 4.2	380 x 7.5 x 4.2
	*Gasket groove diameter (Inside diameter x Width x Depth)		120 x 4 x 4	175 x 4 x 4	275 x 8 x 8	380 x 8 x 8
Outside diameter	Flange		Corresponds to VG25	Corresponds to VG40	Corresponds to VG80	Corresponds to VG80
	Outside diameter	mm	90	105	160	160
	Bolt holes	No. - dia.	4-dia. 10	4-dia. 10	4-dia. 12	4-dia. 12
	P.C.D	mm	70	85	135	135
	Gasket groove diameter (Inside diameter x Width x Depth)		40 x 5 x 3	55 x 5 x 3	100 x 5 x 2.8	100 x 5 x 2.8
	*Gasket groove diameter (Inside diameter x Width x Depth)		V-40	V-55	V-100	V-100
	Cooling water connection		RC 1/4 (PT 1/4)	RC 1/4 (PT 1/4)	RC 3/8 (PT 3/8)	RC 3/8 (PT 3/8)
Materials	Pump body		Stainless steel			
	Nozzle		Aluminum			
	Cooling method		Water cooling pipe			
	Oil level gauge		None	None	Optional	Attached
	Weight	kg	7.5	13.5	47	56
	Shipping measurement (Height x Width x Length)		550 x 330 x 400	580 x 420 x 580	730 x 550 x 700	750 x 550 x 700
	Shipping weight	kg	10.5	17.5	54	64

* A NBR gasket is attached for inlet port as a standard accessory. Please use a fluorinated rubber gasket when pressure is needed below 10^{-5} Pa.

Specifications

Item	Model	ULK-04A		ULK-06A		ULK-10A		ULK-14A	
		L/s							
Pumping speed	L/s	550	500	1200	1100	3400	3000	5400	4900
Working fluid	ULVOIL	D-11	D-31	D-11	D-31	D-11	D-31	D-11	D-31
Ultimate pressure	Pa	$<2.6 \times 10^{-5}$	$<2.6 \times 10^{-6}$	$<2.6 \times 10^{-5}$	$<2.6 \times 10^{-6}$	$<2.6 \times 10^{-5}$	$<2.6 \times 10^{-6}$	$<2.6 \times 10^{-5}$	$<2.6 \times 10^{-6}$
	Torr	$<2.0 \times 10^{-7}$	$<2.0 \times 10^{-8}$	$<2.0 \times 10^{-7}$	$<2.0 \times 10^{-8}$	$<2.0 \times 10^{-7}$	$<2.0 \times 10^{-8}$	$<2.0 \times 10^{-7}$	$<2.0 \times 10^{-8}$
	mbar	$<2.6 \times 10^{-7}$	$<2.6 \times 10^{-8}$	$<2.6 \times 10^{-7}$	$<2.6 \times 10^{-8}$	$<2.6 \times 10^{-7}$	$<2.6 \times 10^{-8}$	$<2.6 \times 10^{-7}$	$<2.6 \times 10^{-8}$
Critical backing (foreline) pressure	Pa	4.0×10^1	6.0×10^1	4.0×10^1	6.0×10^1	3.5×10^1	4.0×10^1	3.1×10^1	4.0×10^1
	Torr	3.0×10^{-1}	4.5×10^{-1}	3.0×10^{-1}	4.5×10^{-1}	2.6×10^{-1}	3.0×10^{-1}	2.3×10^{-1}	3.0×10^{-1}
	mbar	4.0×10^{-1}	6.0×10^{-1}	4.0×10^{-1}	6.0×10^{-1}	3.5×10^{-1}	4.0×10^{-1}	3.1×10^{-1}	4.0×10^{-1}
Maximum throughput	Pa·m ³ /s	8.6×10^{-2}	1.3×10^{-1}	1.5×10^{-1}	2.0×10^{-1}	3.5×10^{-1}	4.3×10^{-1}	3.5×10^{-1}	4.7×10^{-1}
	Torr·L/s	1.2×10^{-2}	1.7×10^{-2}	2.0×10^{-2}	2.7×10^{-2}	4.7×10^{-2}	5.7×10^{-2}	4.7×10^{-2}	6.3×10^{-2}
	mbar·L/s	8.6×10^{-3}	1.3×10^{-2}	1.5×10^{-2}	2.0×10^{-2}	3.5×10^{-2}	4.3×10^{-2}	3.5×10^{-2}	4.7×10^{-2}
Warm up time	min	9	8.5	16.5	15	20	20	24	25
Power required *1	kW	0.55	0.73	0.9	1.2	2	2.4	2.25	3.15
Fluid capacity	L	0.15	0.15	0.35	0.35	0.8	0.8	1.5	1.5
Cooling water consumption *2	L/min	1	1	1	1.5	2.5	3	2.5	3.5
Recommended fore pump		VD151/VD201 PVD-180/PVD-360		VD301/VD401/VD601		PKS-016/PKS-030 VD901/VS1501		PKS-030 VS1501/VS2401	

*1 Please specify power line voltage when ordering.
*2 Cooling water temperature: inlet 19 °C, outlet 29 °C

Pumping Speed Curve

