



2AL Series

Double Stage Liquid Ring Vacuum Pump

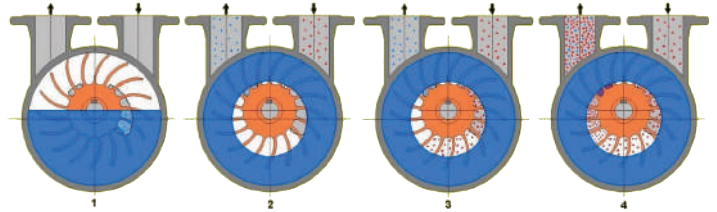
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PRODUCT INFORMATION

Liquid Ring Vacuum Technology

A liquid ring rotating in the working chamber of the pump, eccentrically to the shaft, takes up the drive power delivered to the vane wheel impellers and transfers it as compression power to the gas to be compressed.



Main Characteristics:

- LRVs are adaptable to most duties, with appropriate selection of materials & service liquid.
- Oil-Free operation.
- Applied to almost all gases and vapours.
- Gases being pumped can be saturated with vapour.
- Small quantities of entrained liquid can be handled.
- Compression of gases and vapours being pumped is nearly isothermal.
- Reliable operation with minimum maintenance.
- Low noise and vibration levels.

Standard Execution

The liquid ring vacuum pumps (LRVP) are of the double-stage displacement type. The only movable parts are the shaft and the vane wheel impellers. They do not touch the stationary pump parts. Both shaft ends run in antifriction bearings. For sealing, mechanical seals are applied.

Materials of Construction

- Standard Construction: Cast Iron Body / Stainless Steel Impeller
- Optional: Fully Stainless Steel or Duplex

Identification Code

2AL	140	S
<u>Series</u>		<u>Materials of Construction</u>
2AL : Double Stage Liquid Ring Vacuum Pump		I : Cast Iron / SS304 / S420
		S : SS304 / SS304 / SS304
		L : SS316L / SS316L / SS304
<u>Max. Flow Rate</u>		
110 : 110 m ³ /h		
140 : 140 m ³ /h		

Performance

Using water with a temperature of 15°C as service liquid and a pressure of 1013 mbar at the discharge branch, the lowest suction pressure achievable is 33 mbar. With other service liquid, such as oil, which has a low and stable vapour pressure, deeper vacuum of 25 mbar (abs) may be achieved.

I material pump



S/L material pump

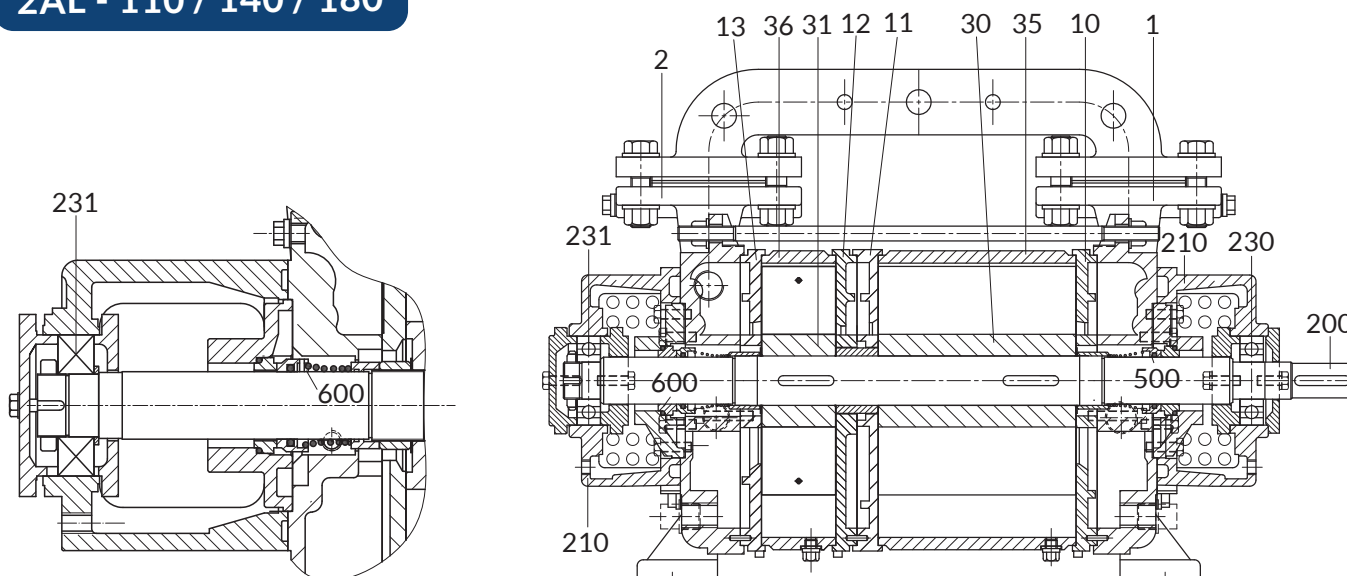


TECHNICAL PARAMETERS

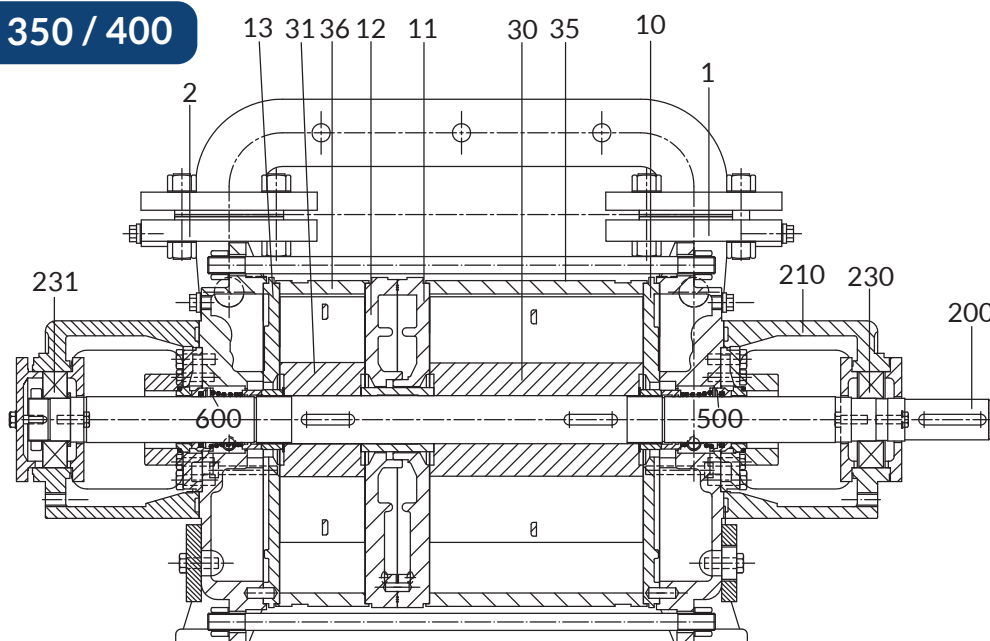
Model	Speed	Motor Power		Max. suction capacity		Min. inlet pressure		Water Supply
		kW	Hp	m ³ /h	cfm	mbar (abs)	inHg (abs)	m ³ /h
2AL-110	1450	3	4	100	58	33	1	0.65-0.9
	1750	4	5.5	125	75	33	1	0.65-0.9
2AL-140	1450	4	5.5	140	85	33	1	0.65-0.9
	1750	5.5	7.5	174	102	33	1	0.65-0.9
2AL-180	1450	5.5	7.5	180	109	33	1	0.65-1.0
	1750	7.5	10	223	131	33	1	0.6-1
2AL-300	1450	7.5	10	283	167	33	1	1.3-3
	1750	11	15	314	185	33	1	1.3-3
2AL-350	1450	11	15	340	201	33	1	1.3-3
	1750	15	20	411	242	33	1	1.3-3
2AL-400	1450	15	20	400	250	33	1	1.3-3.5
	1750	18.5	25	475	280	33	1	1.3-3.5
2AL-500	1450	18.5	25	500	303	33	1	2.5-6
	1750	22	30	590	357	33	1	2.5-6
2AL-600	1450	22	30	600	363	33	1	2.5-6
	1750	30	40	739	358	33	1	2.5-6
2AL-800	975	30	40	800	484	33	1	3-7
	1175	37	50	960	580	33	1	3-7
2AL-1200	975	37	50	1200	727	33	1	3-7
	1175	45	60	1400	848	33	1	3-7
2AL-1600	975	45	60	1580	970	33	1	3-7
	1175	75	100	1710	1036	33	1	3-7

SECTIONAL DRAWING

2AL - 110 / 140 / 180



2AL - 300 / 350 / 400

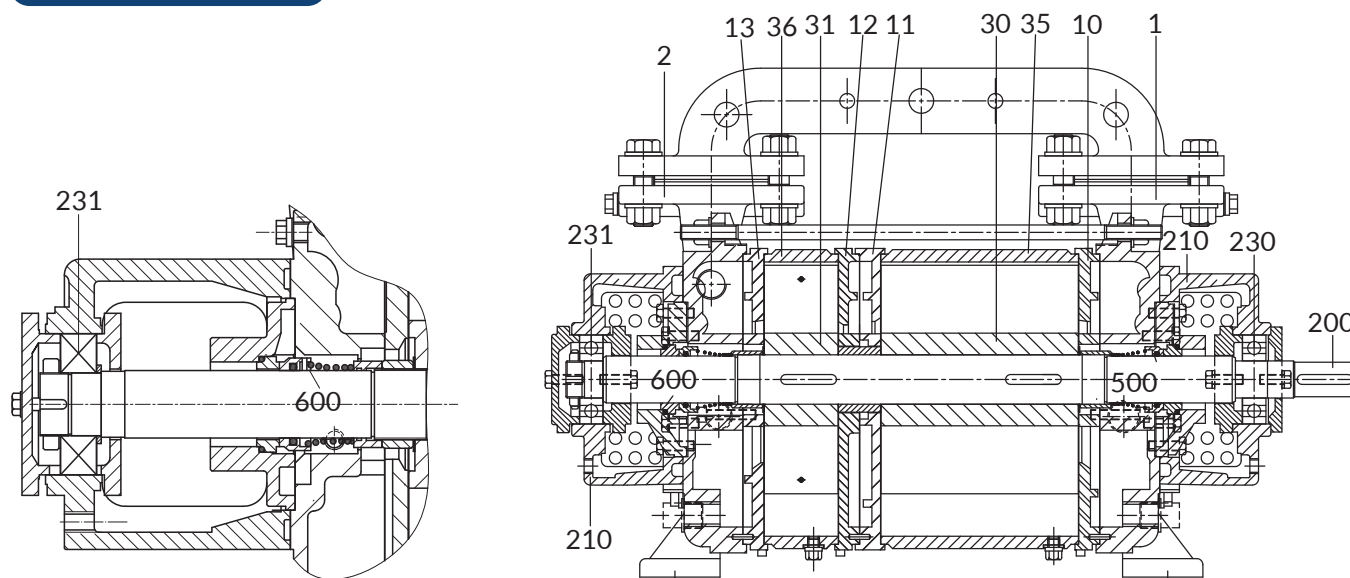


Pump Parts

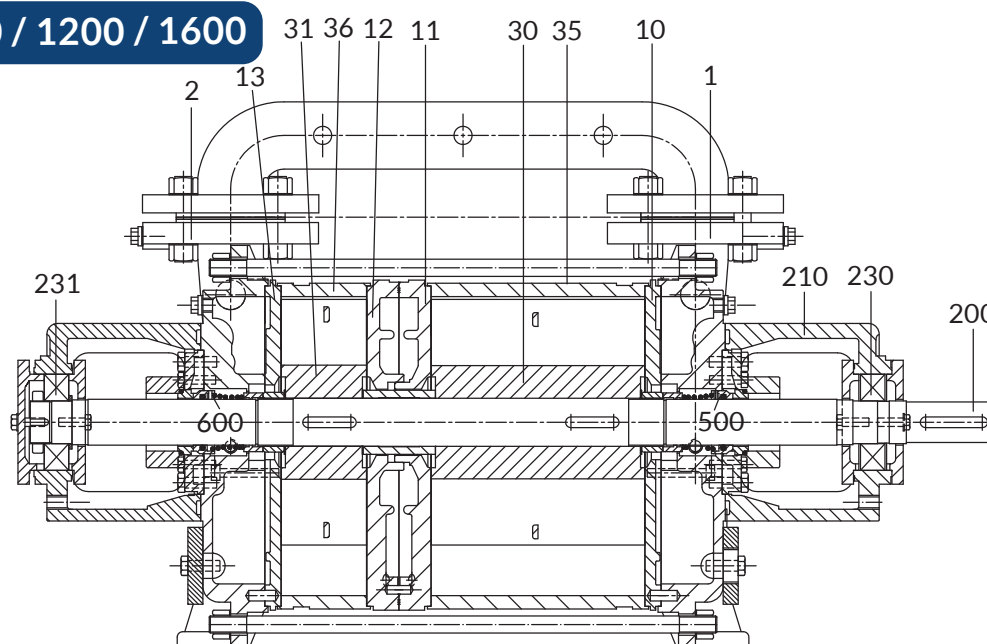
Pos No	Part Name	MOC
1 • 2	Suction • Discharge Covers	Cast Iron
10 • 11 • 12 • 13	Suction • Intermediate • Discharge Port-Plates	Cast Iron
30 • 31	1st • 2nd Stage Impellers	Stainless Steel
35 • 36	1st • 2nd Stage Centre Casing	Cast Steel
200	Pump Shaft	Chrome Steel
210	Bearing Brackets	Cast Iron
230 • 231	Anti-friction Bearing	SKF • NSK
500 • 600	Mechanical Seal	Carbon vs Sic / Viton

SECTIONAL DRAWING

2AL - 500 / 600



2AL - 800 / 1200 / 1600



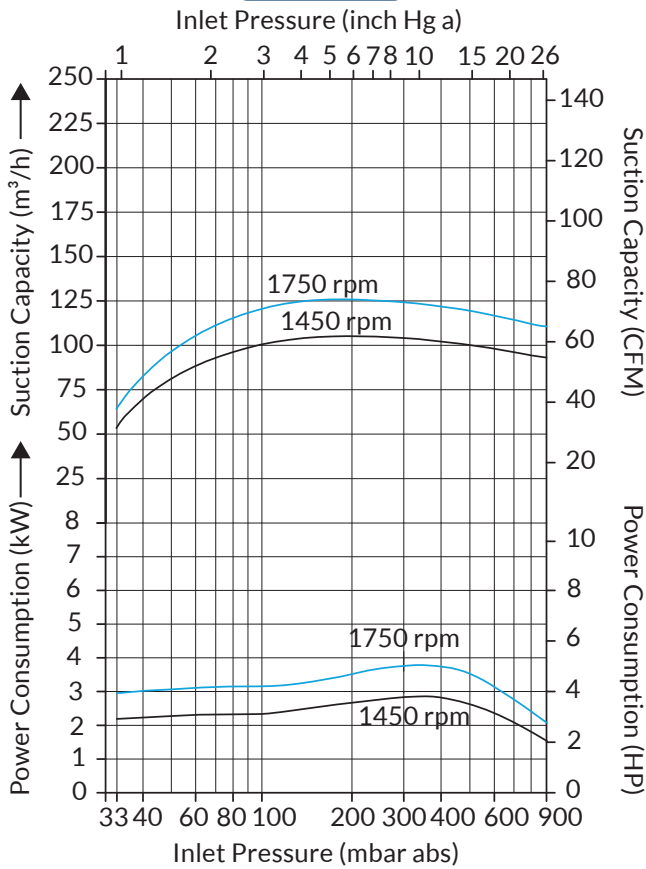
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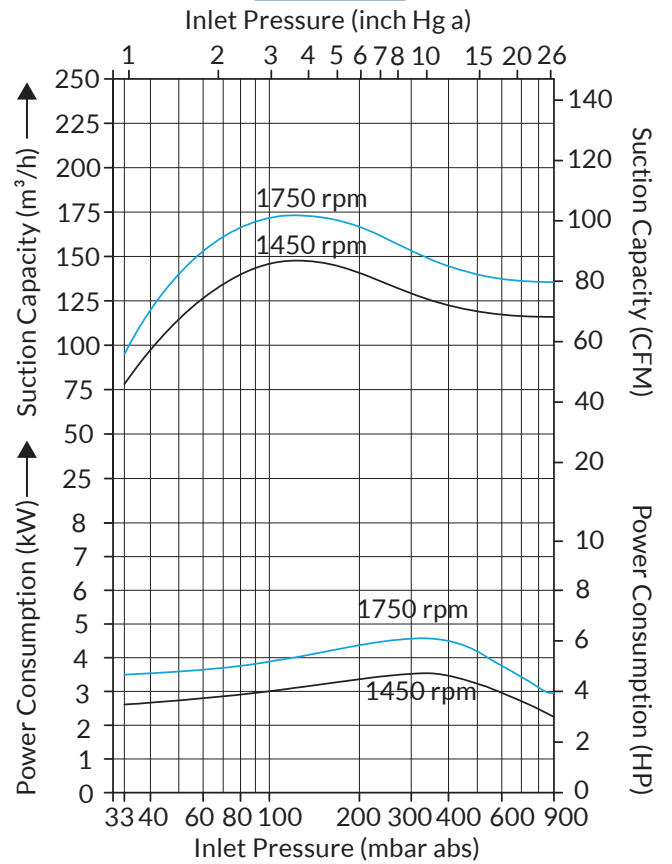
PERFORMANCE CURVES

2AL - 110 / 140 / 180

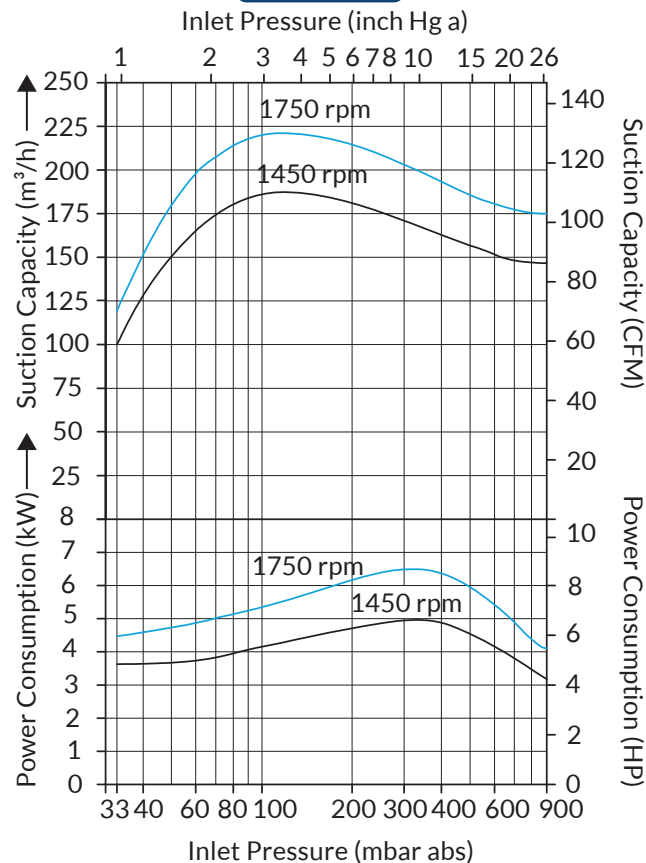
2AL - 110



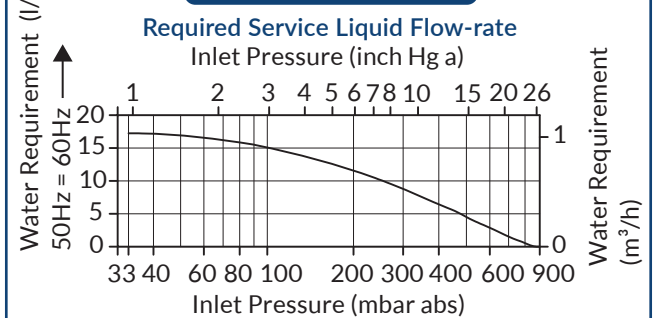
2AL - 140



2AL - 180



2AL - 110 / 140 / 180



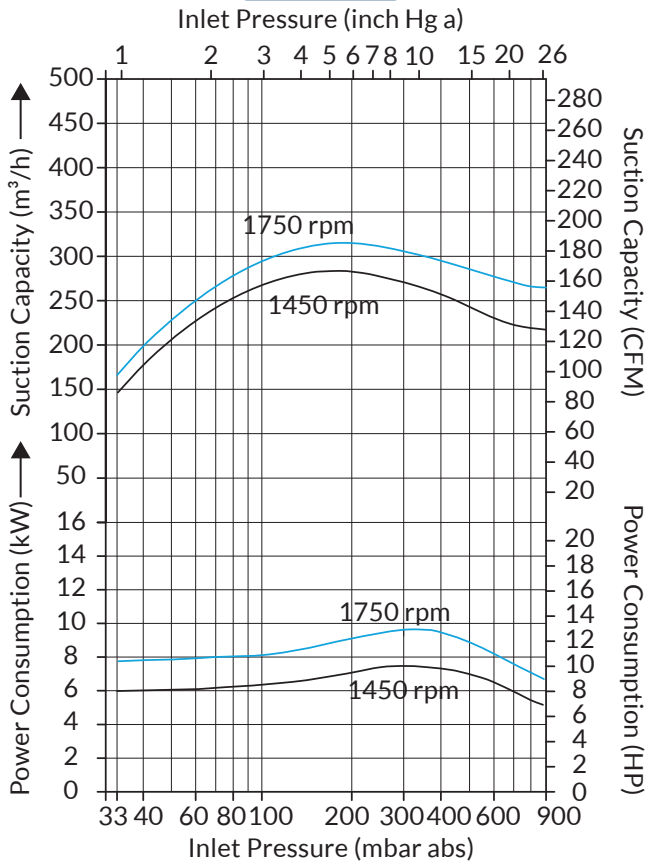
Suction capacity and power consumption depending on inlet pressure

The characteristics are applicable for compression of 20°C (68°F) dry air from inlet pressure to atmospheric pressure (30 inch Hg a). Service liquid is water at 15°C (59°F). The tolerance of the suction capacity is -10% and of the power consumption +10%. With different operating conditions, performance characteristics change (e.g. differing gas operating liquid conditions, conveying of additional liquids and/or pumping of gas-steam mixtures).

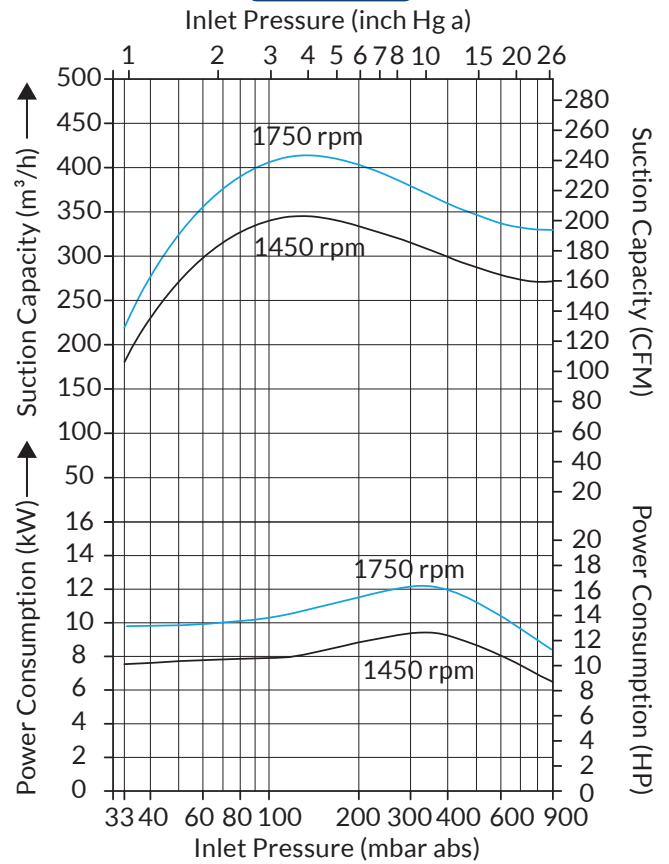
PERFORMANCE CURVES

2AL - 300 / 350 / 400

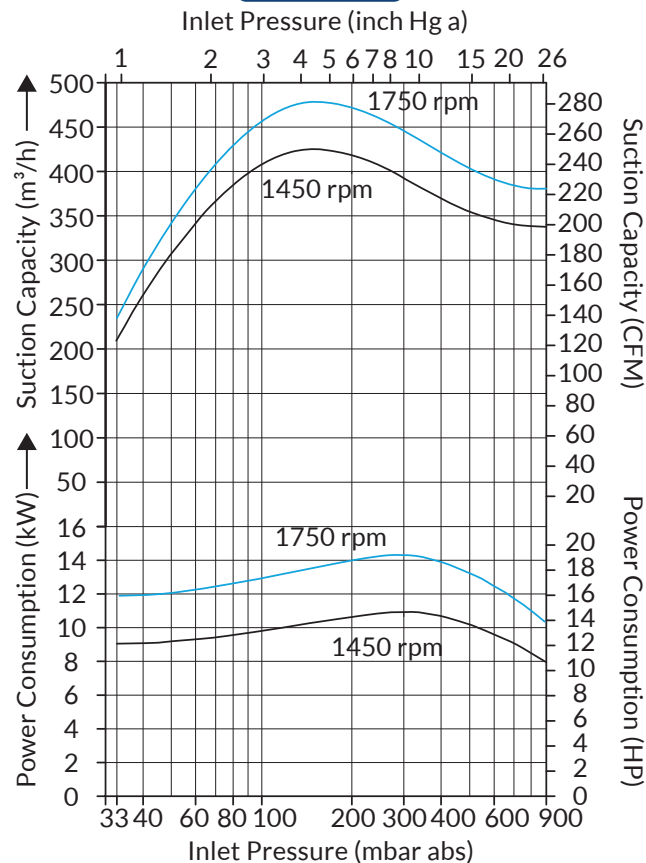
2AL - 300



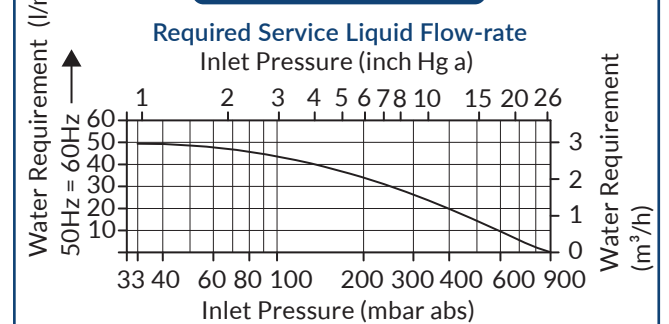
2AL - 350



2AL - 400



2AL - 300 / 350 / 400



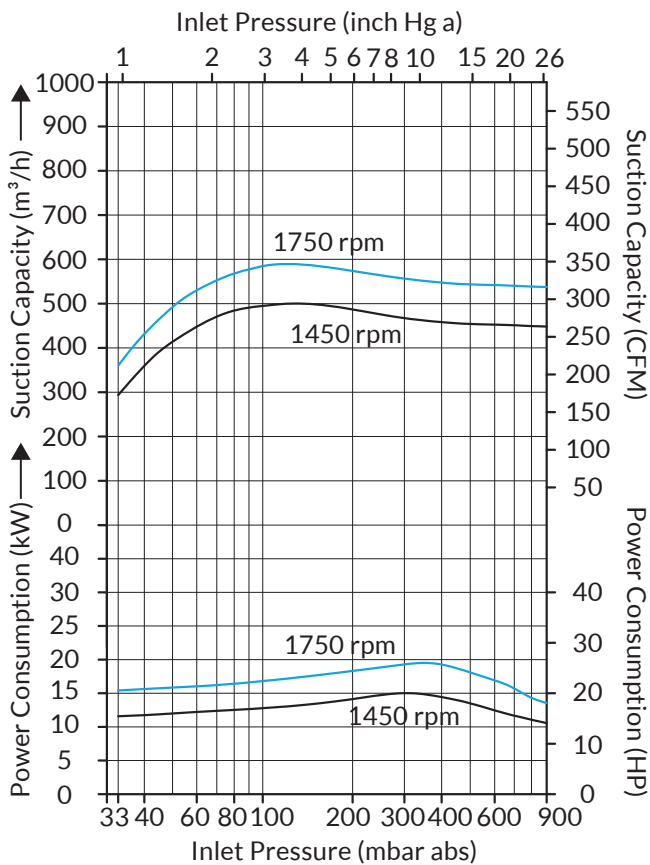
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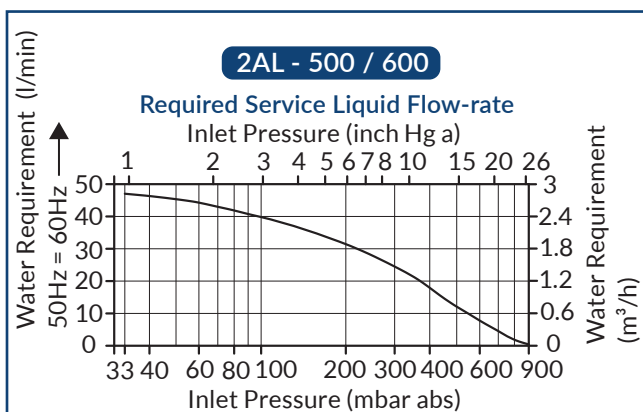
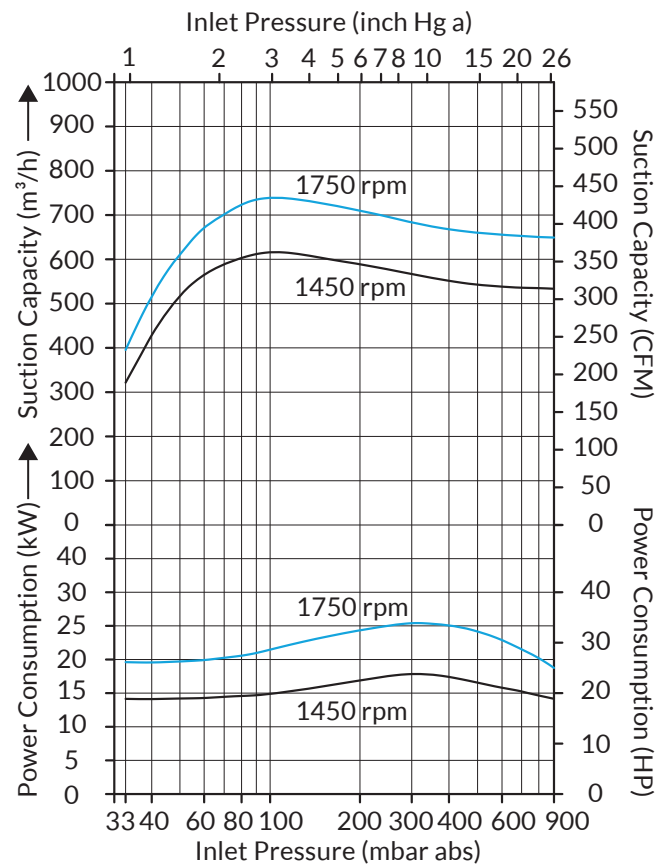
PERFORMANCE CURVES

2AL - 500 / 600

2AL - 500



2AL - 600



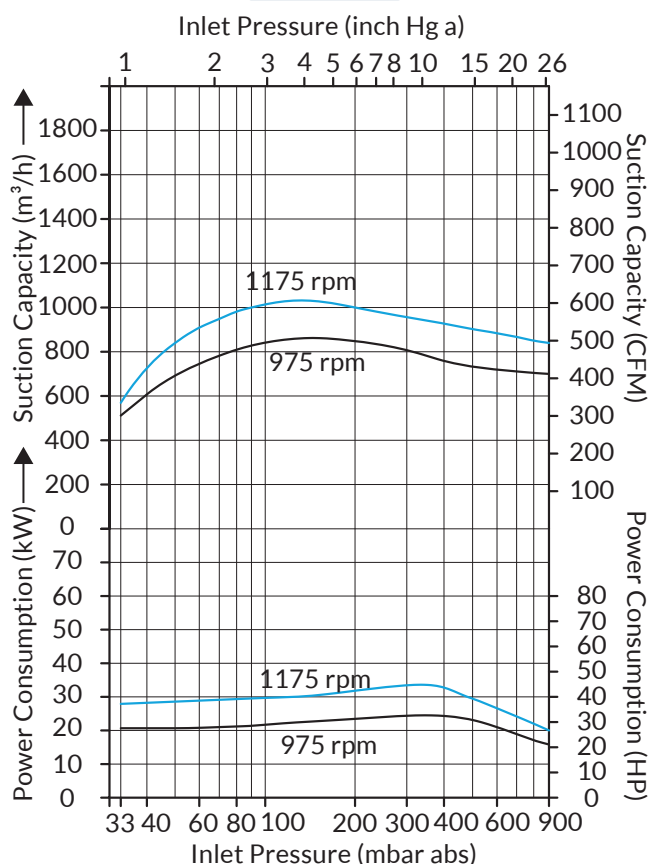
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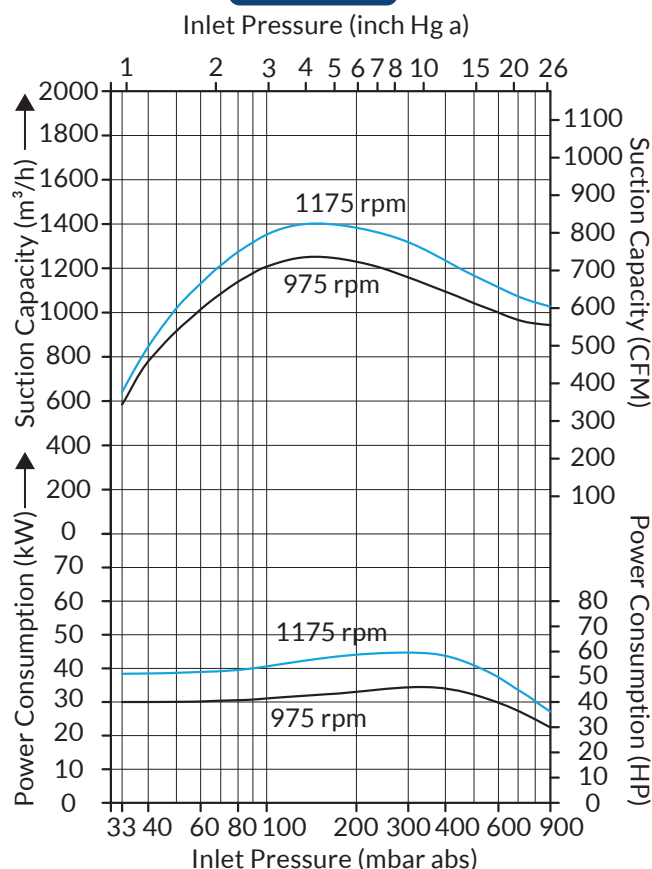
PERFORMANCE CURVES

2AL - 800 / 1200 / 1600

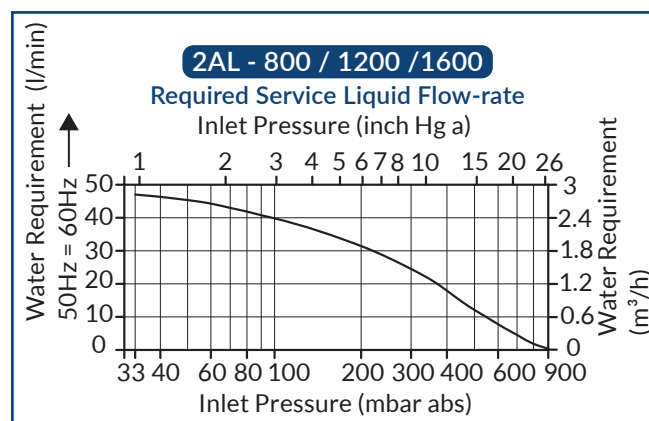
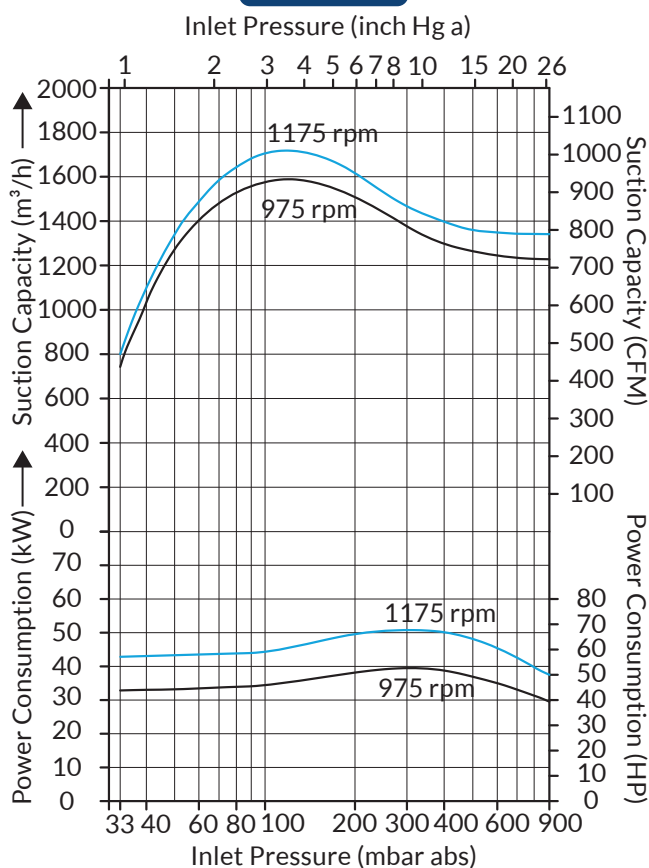
2AL - 800



2AL - 1200



2AL - 1600

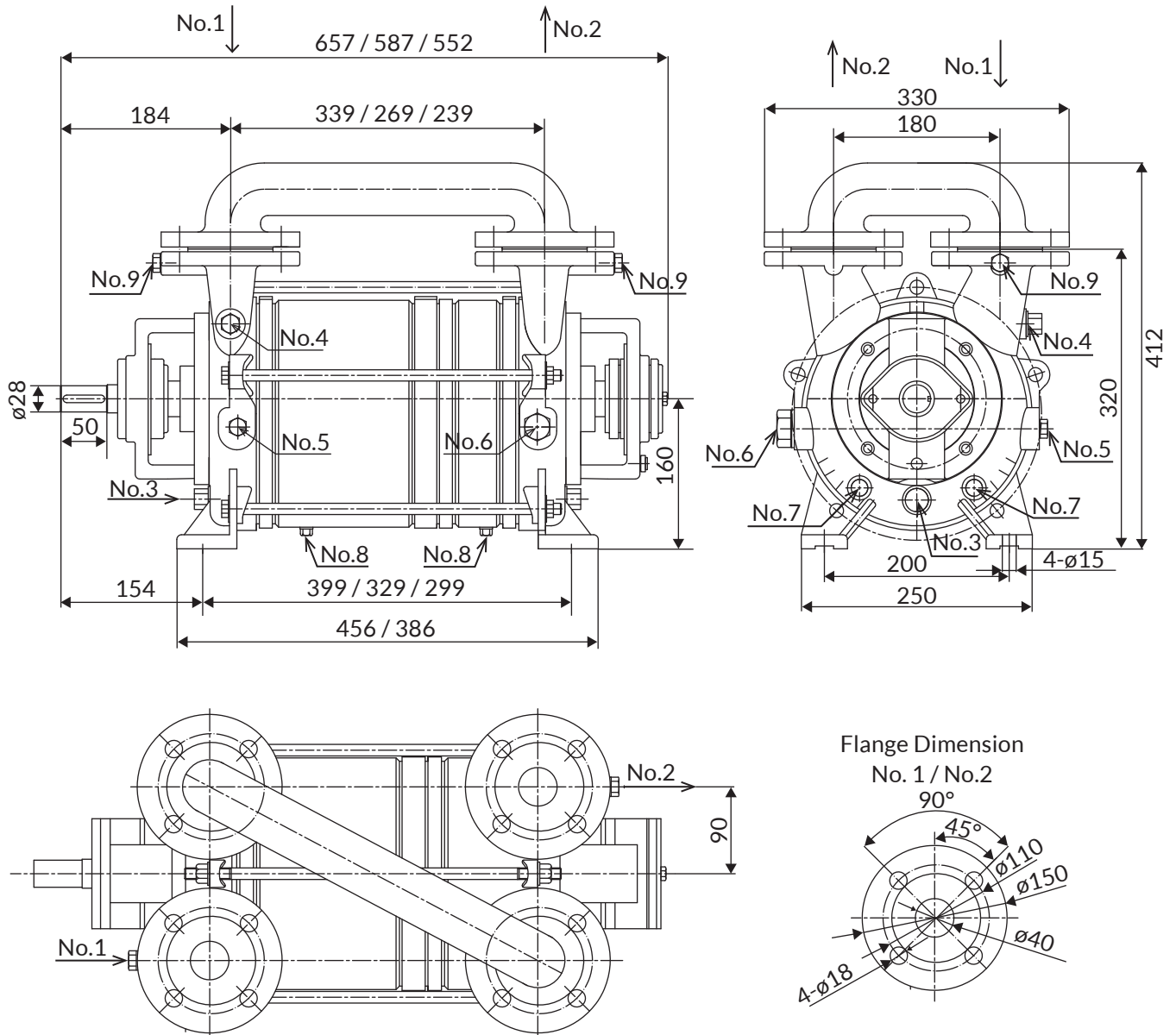


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INSTALLATION & DIMENSION DRAWING

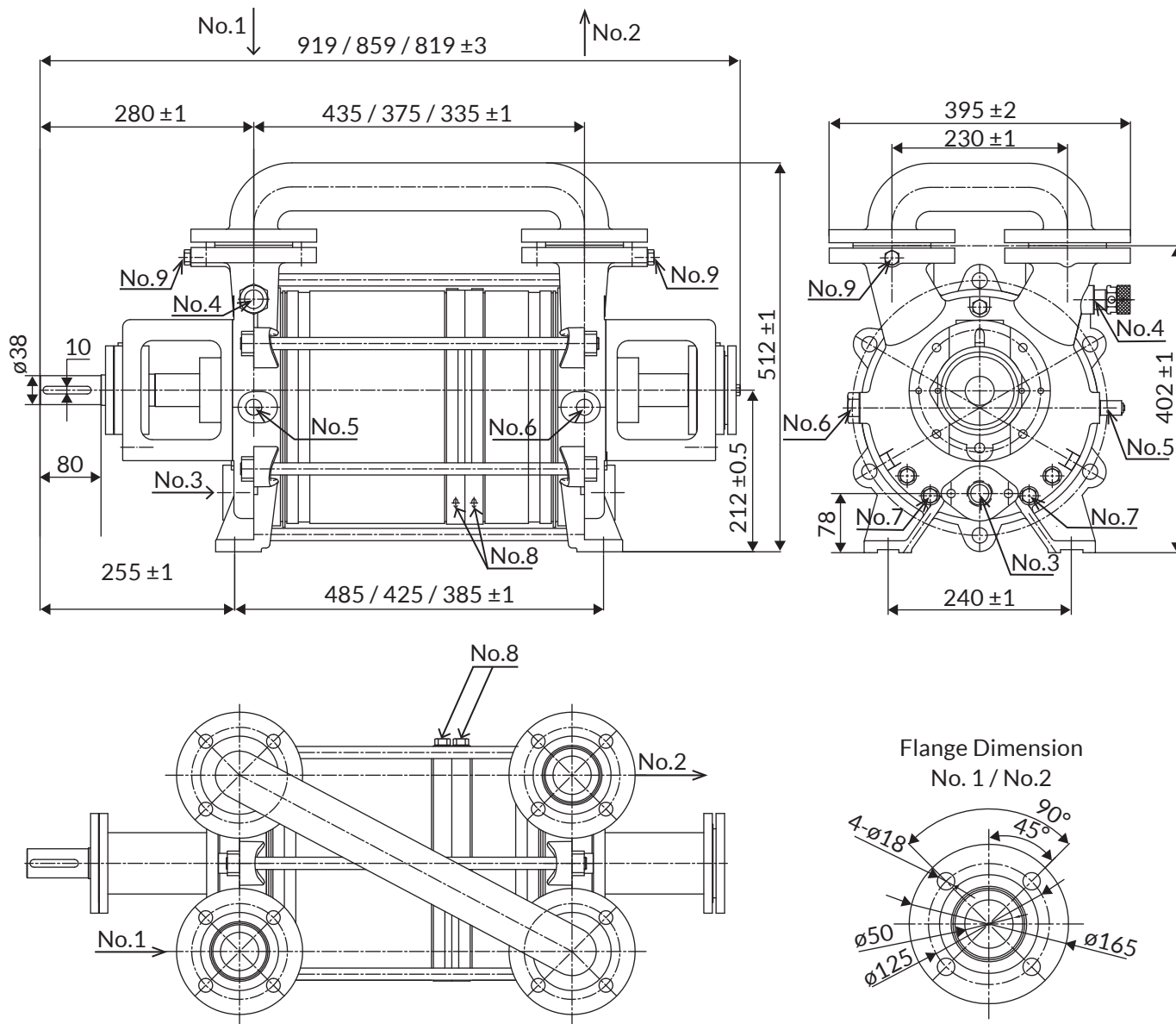
2AL - 110 / 140 / 180



No	Part Name	Dimension
1	Inlet	DN 40 PN 1.0
2	Outlet	DN 40 PN 1.0
3	Service Liquid	G 1/2
4	Relief Valve	G 1/2
5	Auto-drain Valve	G 1/4
6	Spare Connector	G 3/4
7	Inlet Plug	G 1/4
8	Drain Plugs	G 1/4
9	Spare Connector	G 1/4

INSTALLATION & DIMENSION DRAWING

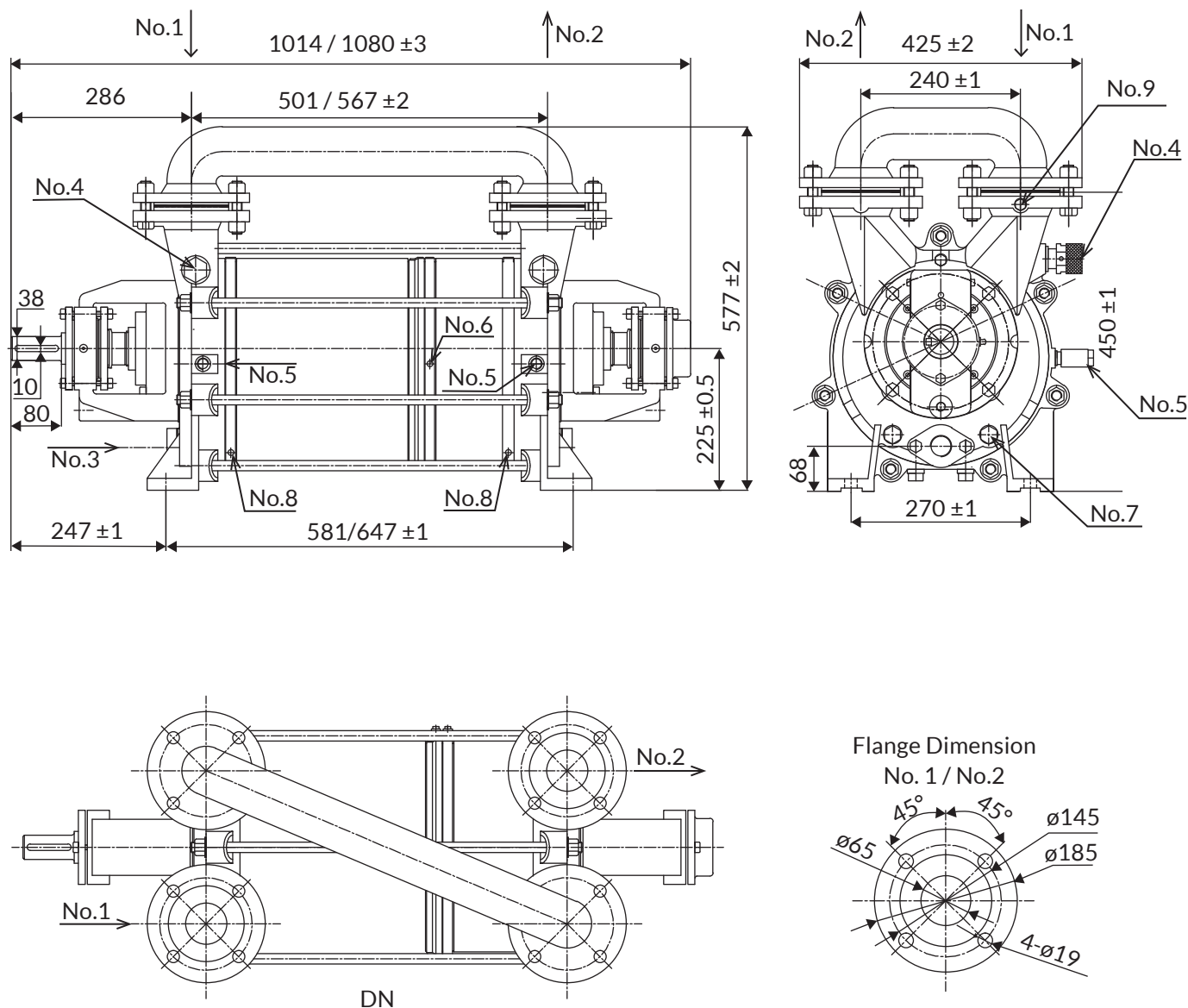
2AL - 300 / 350 / 400



No	Part Name	Dimension
1	Inlet	DN 50 PN 1.0
2	Outlet	DN 50 PN 1.0
3	Service Liquid	G 1
4	Relief Valve	G 3/4
5	Auto-drain Valve	G 1/4
6	Spare Connector	G 3/4
7	Inlet Plug	G 1/4
8	Drain Plugs	G 1/4
9	Spare Connector	G 1/4

INSTALLATION & DIMENSION DRAWING

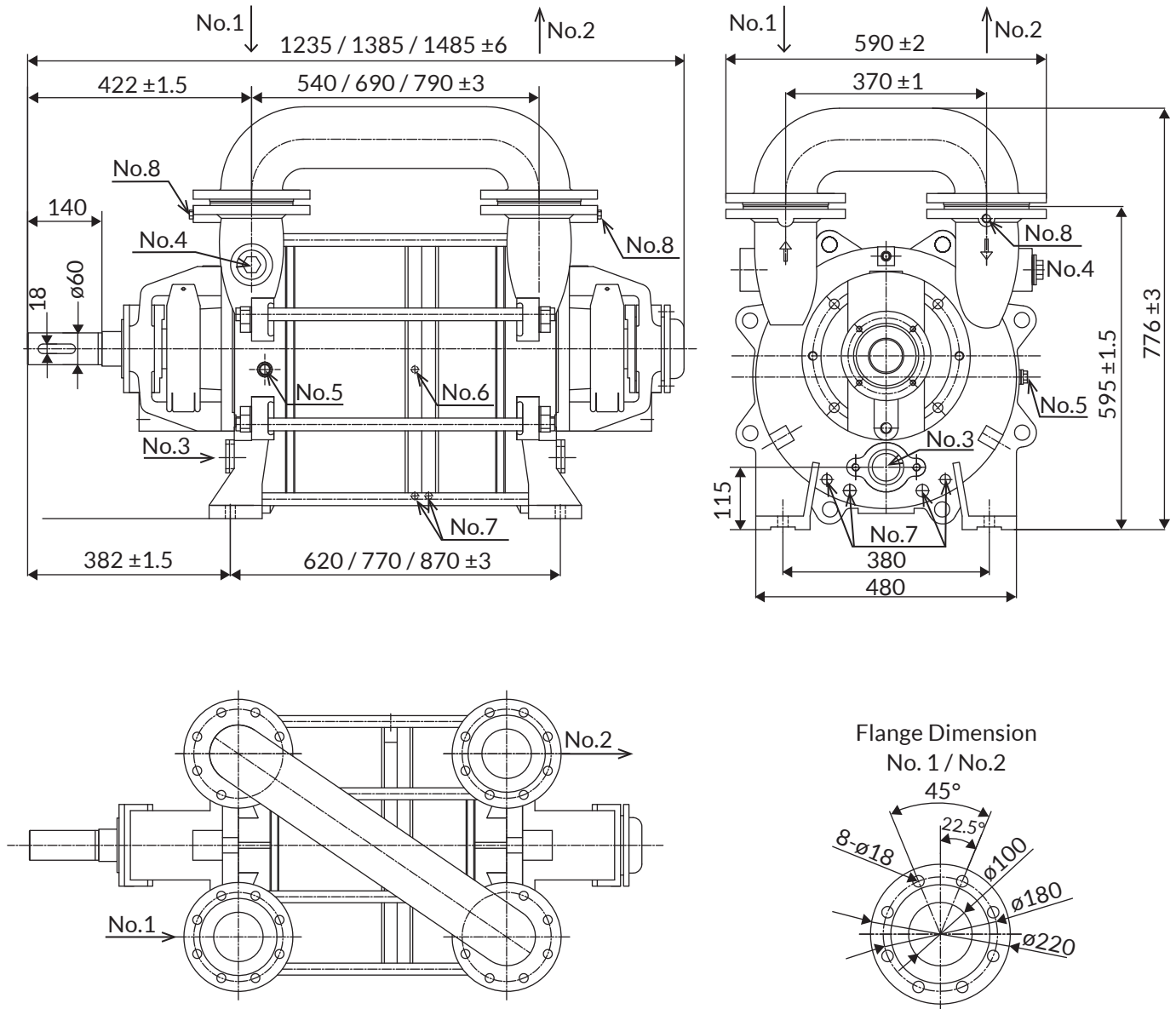
2AL - 500 / 600



No	Part Name	Dimension
1	Inlet	DN 65 PN 1.0
2	Outlet	DN 65 PN 1.0
3	Service Liquid	G 1
4	Relief Valve	G 3/4
5	Auto-drain Valve	G 3/8
6	Spare Connector	G 1/4
7	Inlet Plug	G 1/2
8	Drain Plugs	G 1/2
9	Spare Connector	G 1/4

INSTALLATION & DIMENSION DRAWING

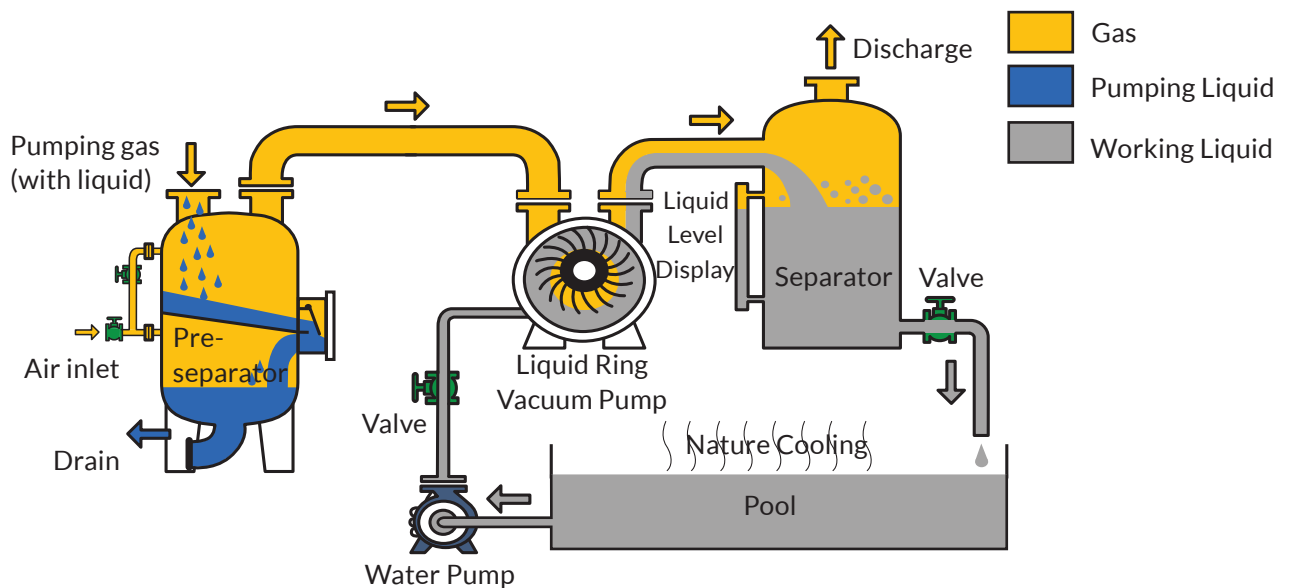
2AL - 800 / 1200 / 1600



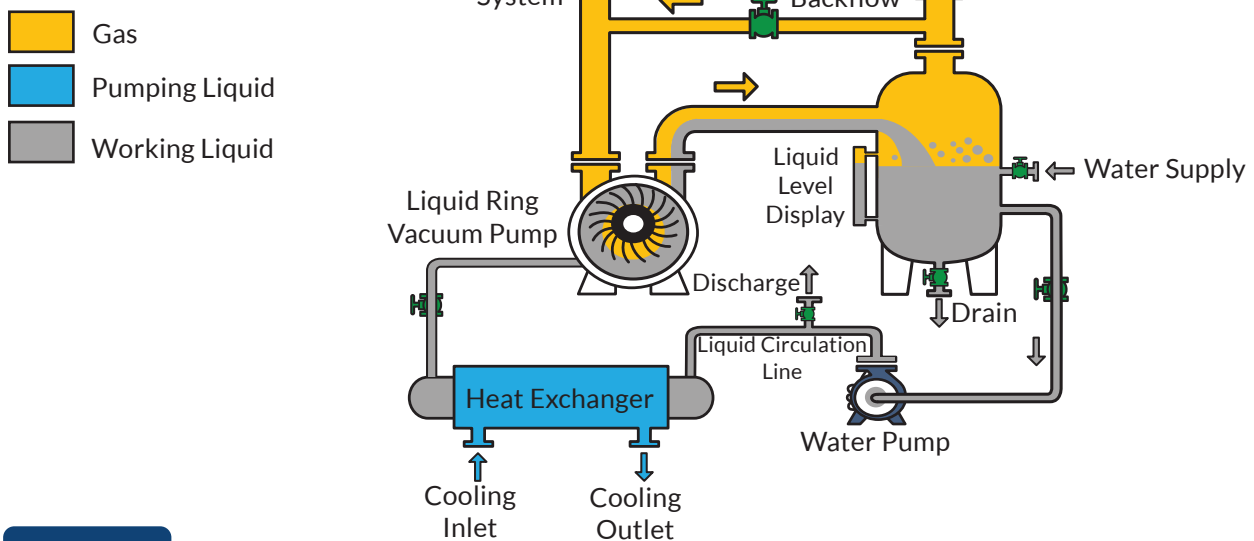
No	Part Name	Dimension
1	Inlet (Gas)	DN 100 PN 10
2	Outlet (Gas)	DN 100 PN 10
3	Service Liquid	G 2
4	Air Relief Valve	G1 1/2
5	Drain Valve Connector	G 1/2
6	Cavitation Protection Connector	G 3/8
7	Liquid Drain Up Connector	G 1/4 G1/2
8	Pressure and Vacuum Gauge Connector	G 1/4

2AL SYSTEMS

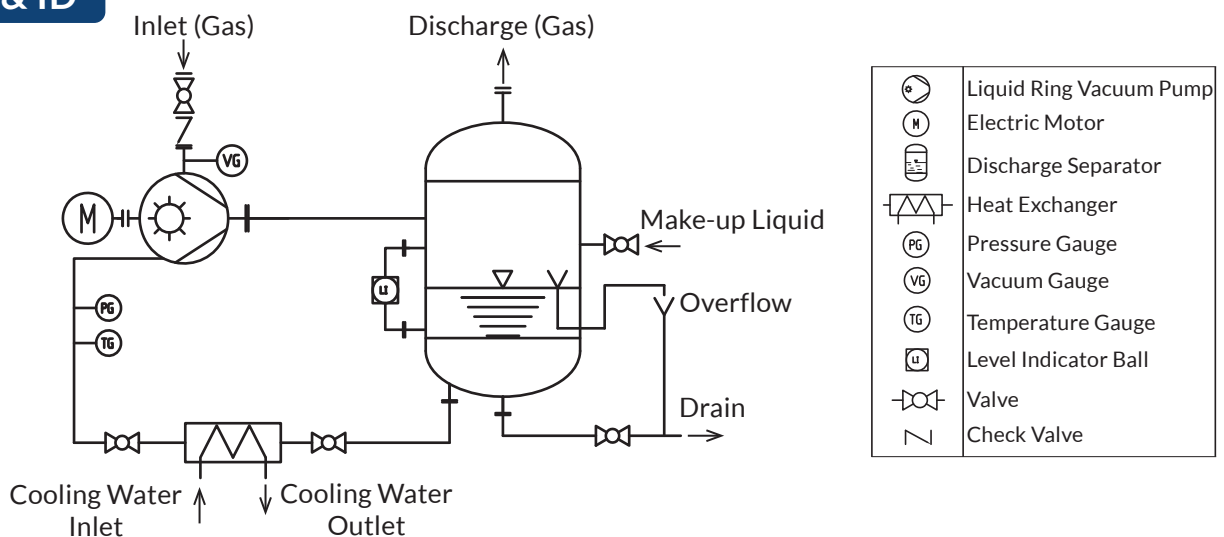
Open Cycle Diagram



Closed Cycle Diagram



P & ID





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