

## KPH 65212, KPH 65218

**Compression pressures:** 2 to 7 bar  
**Suction volume flow:** 375 to 660 m<sup>3</sup>/h

### CONSTRUCTION TYPE

Sterling SIHI liquid ring compressors are displacement compressors of simple and robust construction having following special characteristics:

- Pumping of nearly all gases and vapours
- non polluting due to a nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- additional liquid can be handled with the gas flow
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly anywhere
- incorporated central drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring compressors KPH 65212 and KPH 65218 are two stage compressors, with double acting second stage.



### APPLICATION

Handling and compressing of dry and humid gases; entrained liquid can be handled during normal duty. The compressors are applied in all fields where a compression over pressure of up to 6,5 bar has to be created by robust compressors and only a small increase in temperature is admissible during compression.

Fields of application are e.g.

- the plastics industry, for recovery of process gases as vinyl chloride
- the petrochemical industry, for the compression of combustible gases as gasoline vapours or hydrogen
- transport of gases in general e.g. to a reactor

### NOTE

During the operation the compressor must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a pressure liquid separator (see catalogue part accessories). It is possible to reuse the service liquid.

The direction of rotation is clockwise when looking from the drive on the pump.

### GENERAL TECHNICAL DATA

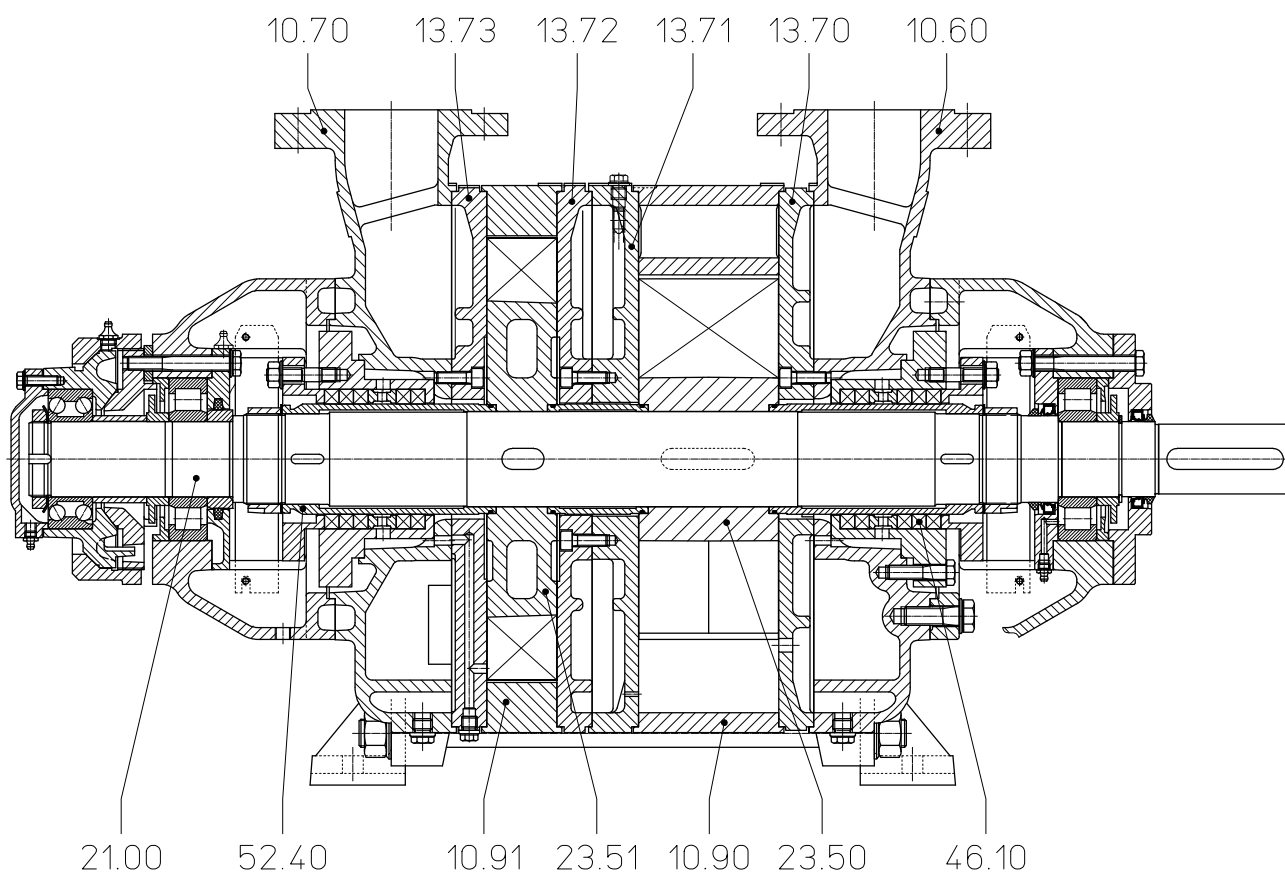
Pump type	unit	KPH 65212	KPH 65218
Speed	50 Hz 60 Hz	rpm 1450 1775	1450 1775
Max. compression over pressure	bar		7
Hydraulic test (over pressure)	bar		10,5
Moment of inertial of the rotating pump parts and of the water filling	kg · m <sup>2</sup>	0,68	0,95
Sound pressure level of measuring area	dB (A)	82 84	82 84
Min. pulley diameter permissible in case of V-belt drive	mm	355	355 450
Max. gas temperature	°C		100
Service liquid			
max. admissible temperature	°C		80
max. viscosity	mm <sup>2</sup> /s		90
max. density	kg/m <sup>3</sup>		1200
volume up to shaft level	liter	22	27

The combination of several limiting values is not admissible.

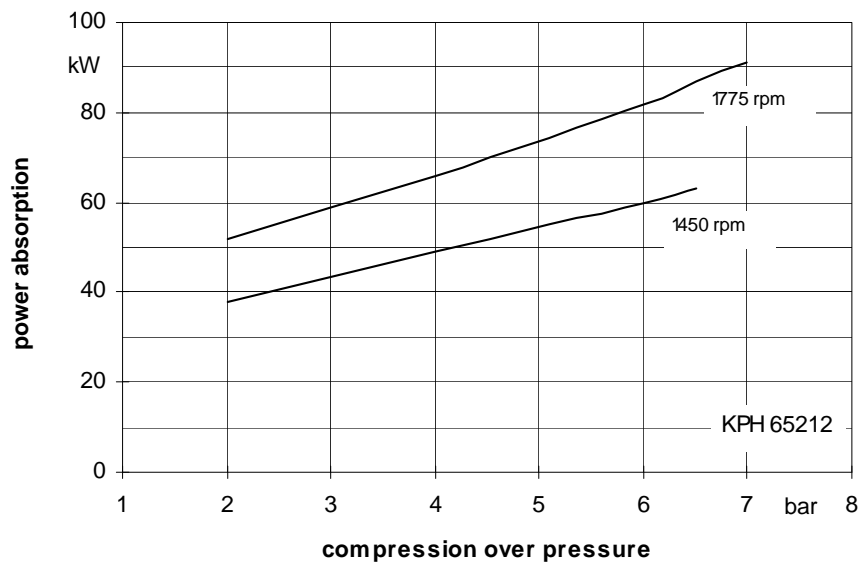
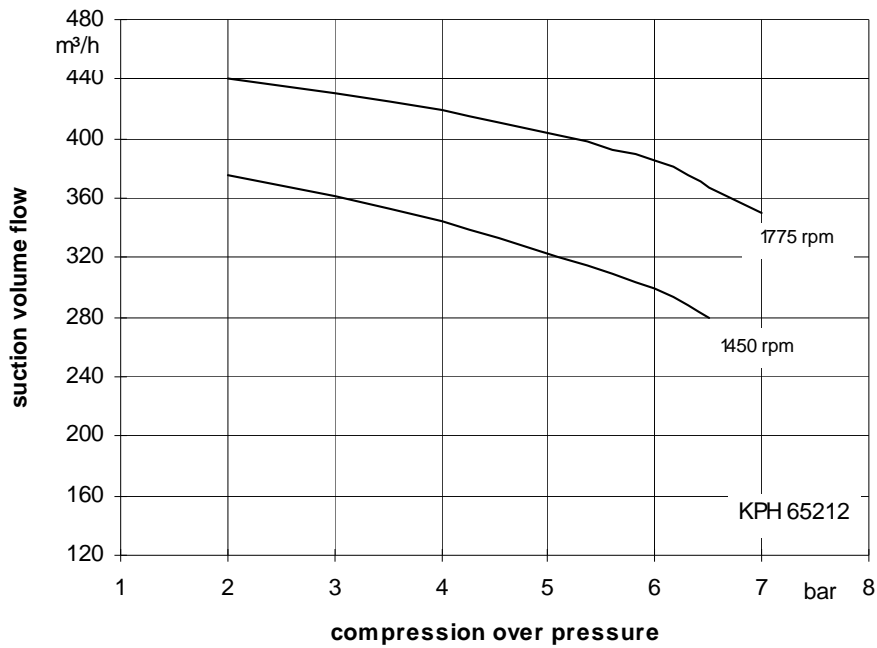
## Material design

Item	COMPONENTS	MATERIAL DESING	
		0B	4B
10.60 / 10.70	Casing	0.6025	1.4408
10.90 / 10.91	Central body		
13.70 / 1371 13.72 / 13.73	Guide disk		
21.00	Shaft	1.0503	
23.50 / 23.51	Vane wheel impeller	1.4027.05	1.4517
46.10	Gland packing	GORE	
52.40	Shaft sleeve	1.4027.05	1.4581

## Sectional drawing KPH 65212, KPH 65218



## Suction volume flow and power absorption KPH 65212

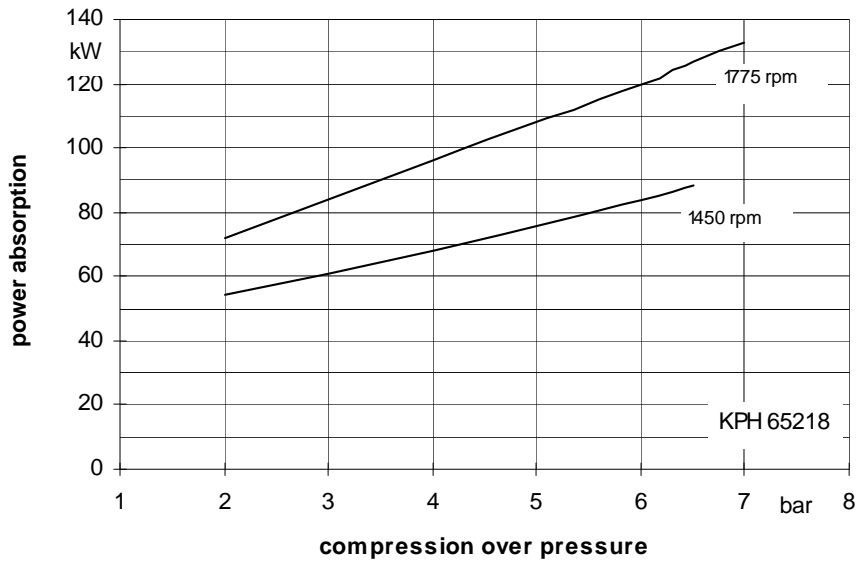
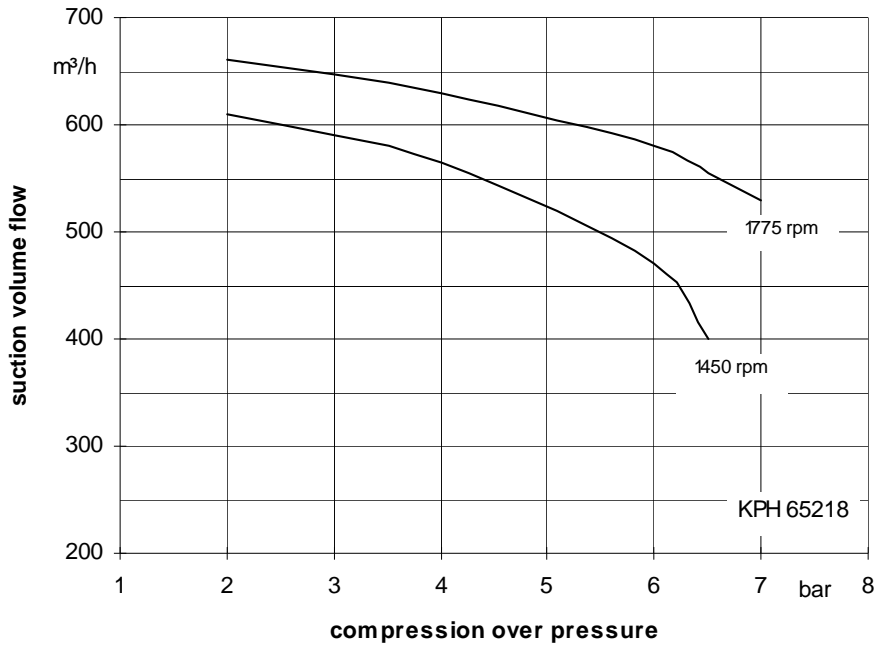


The values indicated for volume and power absorption are valid for compression of dry air at 20°C from atmospheric pressure (1013 mbar) of the respective compression pressure with water at 20°C as service liquid. Tolerance of the curve values is 10%. The compression pressure in bar is indicated as pressure above the atmospheric pressure.

The data indicated change with deviating service conditions, such as deviating physical data of the gas to be handled or of the service liquid (vapour pressure, temperature, density, viscosity) when handling entrained liquid, at a suction pressure deviating from atmospheric pressure handling gas-vapours mixtures.

For determination of service data for deviating service conditions please see catalogue section TH.

## Suction volume flow and power absorption KPH 65218

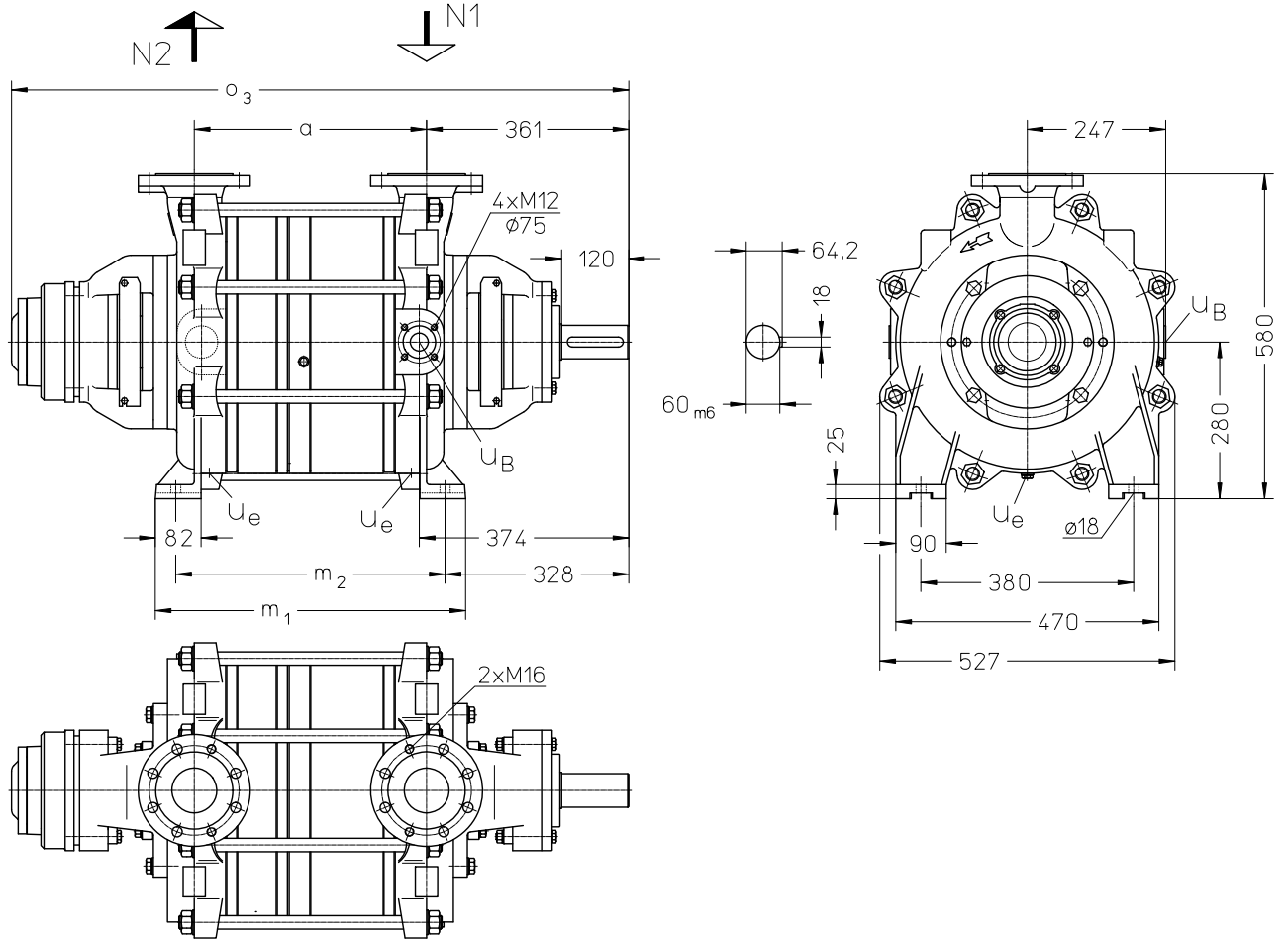


The values indicated for volume and power absorption are valid for compression of dry air at 20°C from atmospheric pressure (1013 mbar) of the respective compression pressure with water at 20°C as service liquid. Tolerance of the curve values is 10%. The compression pressure in bar is indicated as pressure above the atmospheric pressure.

The data indicated change with deviating service conditions, such as deviating physical data of the gas to be handled or of the service liquid (vapour pressure, temperature, density, viscosity) when handling entrained liquid, at a suction pressure deviating from atmospheric pressure handling gas-vapours mixtures.

For determination of service data for deviating service conditions please see catalogue section TH.

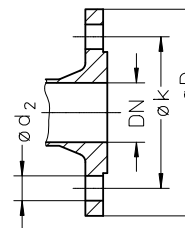
**Dimension table KPH 65212, KPH 65218**



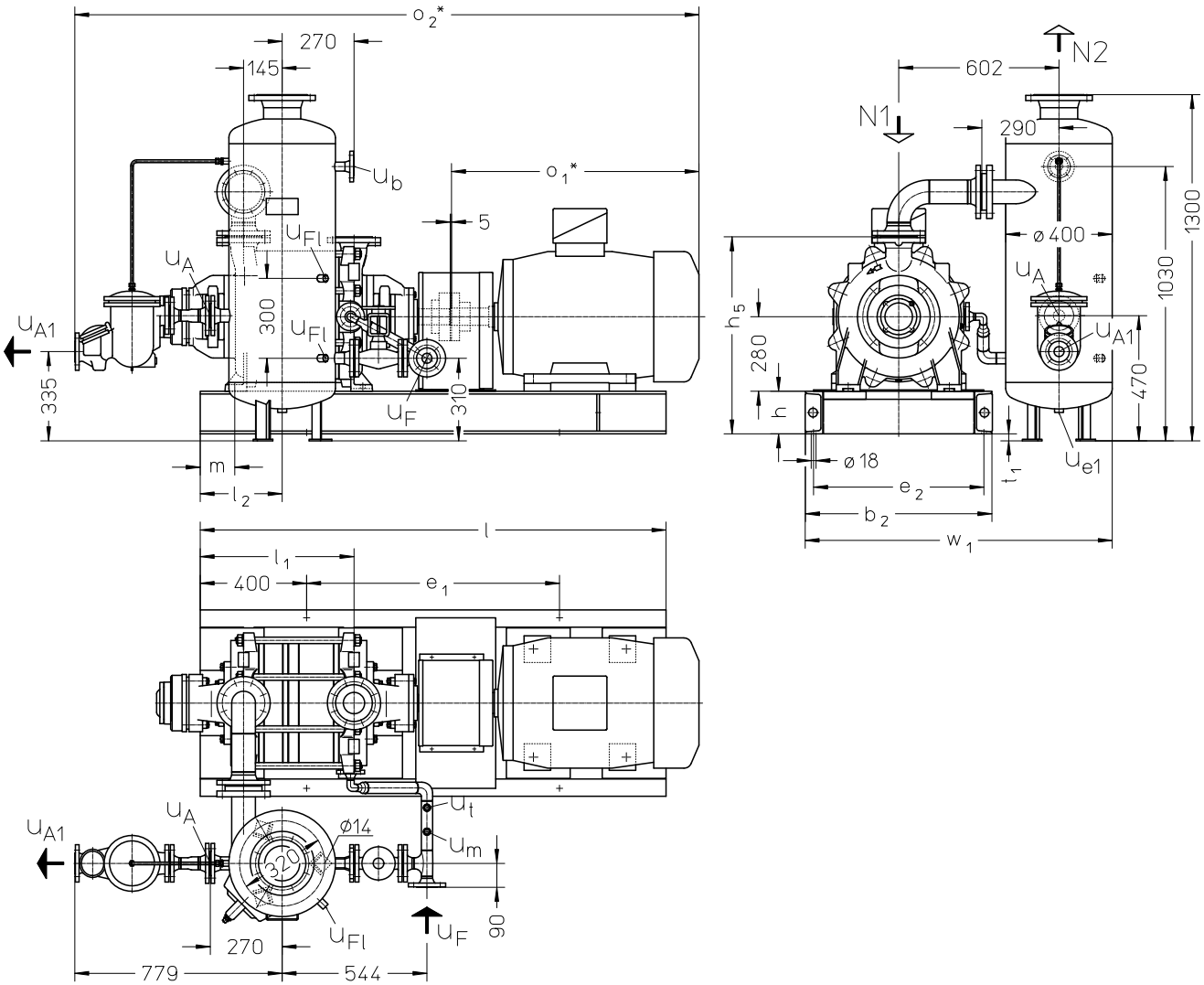
- N 1 = gas-inlet DN 80
- N 2 = gas-outlet DN 80
- u<sub>B</sub> = connection for service liquid DN 20
- u<sub>e</sub> = drain connection (screwed plug) G 3/8

	a	m <sub>1</sub>	m <sub>2</sub>	o <sub>3</sub>	weight abt. kg
KPH 65212	415	554	481	1103	445
KPH 65218	505	644	571	1193	510

flange connections to DIN 2501 PN 10 / PN 16		
DN	20	80
k	75	160
D	105	200
number x d <sub>2</sub>	4 x M12	8 x 18



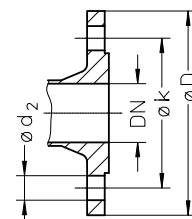
**Arrangement drawing KPH 65212 with pressure liquid separator**  
 (Dimensions and scheme of the liquid discharge trap XUk for combined operation only)



- N 1 = gas-inlet DN 80
- N 2 = gas-outlet DN 125
- u<sub>A</sub> = connection for liquid drain DN 40
- u<sub>A1</sub> = connection for liquid drain DN 32
- u<sub>b</sub> = connection for safety valve DN 25
- u<sub>e1</sub> = drain connection G ¾
- u<sub>F</sub> = connection for fresh liquid DN 32
- u<sub>m</sub> = connection for pressure gauge G ½
- u<sub>F1</sub> = connection for liquid level indicator G ½
- u<sub>t</sub> = connection for thermometer G ½

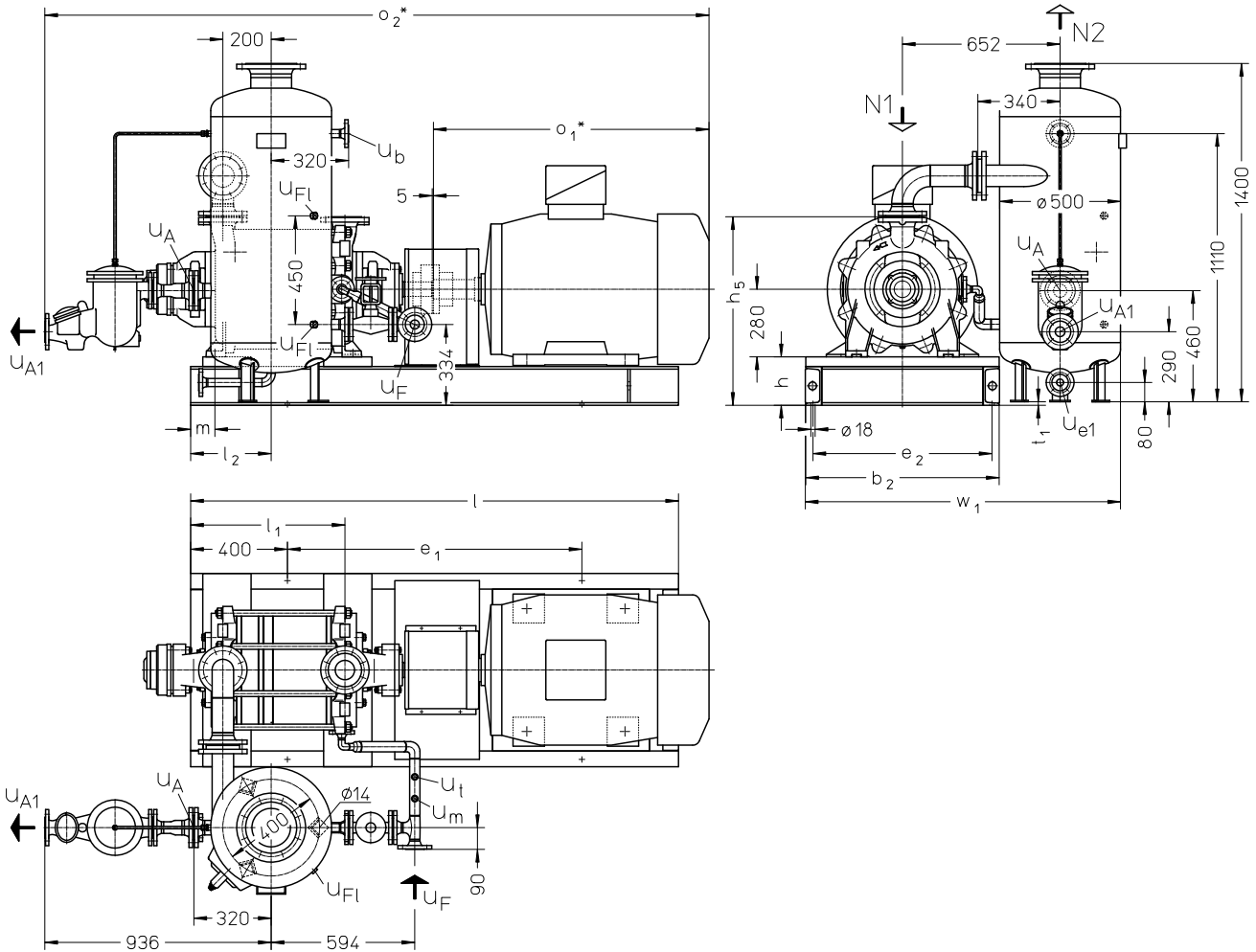
	electric motor 50 Hz			b <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>5</sub>	l	l <sub>1</sub>	l <sub>2</sub>	m	o <sub>1</sub> *	o <sub>2</sub> *	t <sub>1</sub>	w <sub>1</sub>	weight abt. kg
	size	IP 55	kW EEx e II T3														
KPH 65212	250 M	55	-	700	950	640	160	740	1750	578	308	130	930	2345	26	1154	1300
	280 S	75	-										1005	2420			1470
	280 S	-	58										1044	2459			1430
	280 M	-	70										1095	2510			1500
	315 S	-	84	800	1218	740	200	780	2018	618	348	170	1220	2635	-14	1202	1850

flange connections to DIN 2501 PN 10 / PN 16					
DN	25	32	40	80	125
k	85	100	110	160	210
D	115	140	150	200	250
number x d <sub>2</sub>	4 x 14	4 x 18	4 x 18	8 x 18	8 x 18



\* Dimensions depend on the motor make

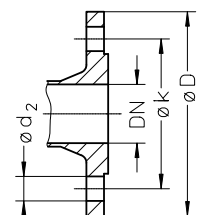
**Arrangement drawing KPH 65218 with pressure liquid separator**  
 (Dimensions and scheme of the liquid discharge trap XUk for combined operation only)



- N 1 = gas-inlet DN 80
- N 2 = gas-outlet DN 150
- U<sub>A</sub> = connection for liquid drain DN 50
- U<sub>A1</sub> = connection for liquid drain DN 40
- U<sub>b</sub> = connection for safety valve DN 25
- U<sub>e1</sub> = drain connection DN 25
- U<sub>F</sub> = connection for fresh liquid DN 32
- U<sub>Fl</sub> = connection for liquid level indicator G ½
- U<sub>m</sub> = connection for pressure gauge G ½
- U<sub>t</sub> = connection for thermometer G ½

	electric motor 50 Hz			b <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>5</sub>	l	l <sub>1</sub>	l <sub>2</sub>	m	o <sub>1</sub> *	o <sub>2</sub> *	t <sub>1</sub>	w <sub>1</sub>	weight abt. kg
	size	IP 55	kW EEx e II T3														
KPH 65218	280 M	90	-	700	950	640	160	740	1750	578	273	40	1005	2612	-26	1254	1650
	280 M	-	70										1095	2702			1620
	315 S	110	-	800	1218	740	200	780	2018	638	333	100	1140	2747	14	1304	1900
	315 S	-	84										1220	2827			1970
	315 M	-	100														
	315 M	-	115														2010

flange connections to DIN 2501 PN 10 / PN 16						
DN	25	32	40	50	80	150
k	85	100	110	125	160	240
D	115	140	150	165	200	285
number x d <sub>2</sub>	4 x 14	4 x 18	4 x 18	4 x 18	8 x 18	8 x 22



\* Dimensions depend on the motor make

**Fresh water requirements** in [m<sup>3</sup>/h] dependent on compression pressure, speed, mode of operation and temperature difference

compressor	speed [rpm]	* [bar]	FB not dependin ~ on the pressure [m <sup>3</sup> /h]	KB= combined liquid service with service liquid 30°C, 20°C, 10°C, 5°C warmer than the make up-water															
				compression over pressure															
				2 bar				4 bar				6 bar				6,5 resp. 7 bar			
				difference in temperature [°C]				difference in temperature [°C]				difference in temperature [°C]				difference in temperature [°C]			
30	20	10	5	30	20	10	5	30	20	10	5	30	20	10	5				
KPH· 65212	1450	1,4	3	0,80	1,06	1,56	2,06	0,96	1,24	1,75	2,21	1,09	1,39	1,90	2,32	1,13	1,42	1,93	2,35
	1775	2,0	3,6	1,05	1,38	1,99	2,57	1,24	1,59	2,20	2,73	1,42	1,78	2,38	2,87	1,51	1,87	2,47	2,93
KPH· 65218	1450	2,0	4,2	1,13	1,49	2,20	2,89	1,33	1,72	2,44	3,09	1,53	1,94	2,65	3,25	1,58	1,99	2,70	3,29
	1775	2,8	5	1,46	1,91	2,77	3,56	1,77	2,26	3,11	3,84	2,04	2,54	3,37	4,02	2,16	2,67	3,48	4,10

FB = make-up liquid service

\* = In order to secure the service liquid flow the service liquid pressure shall be higher than the suction pressure by the following values

#### Data regarding the pump size - order notes

series + size	hydraulic + bearings	shaft sealing	material design	Case sealing
	<ul style="list-style-type: none"> <li>B• two antifriction bearings</li> <li>•N one shaft end clockwise rotating</li> </ul>	041 double gland packing	0B main parts cast iron, without non-ferrous metal 4B main parts high-grade steel	0 liquid seal
KPH 65212 65218	BN	041	0B, 4B	0



## Accessories

recommended accessories			KPH 65212		KPH 65218			
<b>Pressure liquid separator</b>			type weight		XBd 1370 105 kg		XBd 2070 150 kg	
material design	130 / galvanized 172 / 1.4571	SIH part No.	35 000 323 35 000 324		35 018 053 35 000328			
Service liquid line			SIH part No.		35 009 157		35 018 080	
Shutoff valve			SIH part No.		On request			
Bend			SIH part No.		35 003 229 35 003 230			
<b>Liquid discharge trap (KB)</b>			type / weight		XUk 3308 / 22 kg		XUk 4108 / 31 kg	
material design	762 / GG20+1.4541	SIH part No.	43 014 806		43 014 812			
Reduction			SIH part No.		35 009 225		35 009 226	
Air vent pipe			SIH part No.		35 009 242		35 009 245	
<b>Liquid discharge trap (FB)</b>			type / weight		XUk 4108 / 31 kg		XUk 5108 / 46 kg	
material design	762 / GG20+1.4541	SIH part No.	43 014 812		43 014 815			
Air vent pipe			SIH part No.		on request		on request	
<b>Motor</b> in case of standard design			size		250 M		280 S	
IP 55			power		55 kW		75 kW	
			weight		435 kg		610 kg	
EEx e II T3			size		280 S		280 M	
			power		58 kW		70 kW	
			weight		570 kg		630 kg	
					315 M		280 M	
					84 kW		315 S	
					900 kg		110 kW	
					630 kg		830 kg	
					70 kW		100 kW	
					630 kg		940 kg	
					84 kW		115 kW	
					900 kg		940 kg	
					100 kg		115 kg	
					940 kg		940 kg	
					940 kg		940 kg	
<b>Coupling</b>			type		A 180		A 180	
for motor IP 55			weight		14 kg		14 kg	
pump side			SIH part No.		43 035 527		43 035 527	
motor side					43 034 392		43 021 495	
for motor EEx e II T3			type		ADS 194		ADS 218	
pump side			weight		17 kg		24 kg	
motor side			SIH part No.		43 040 600		4304060	
					43 038 678		2	
							4304060	
							0	
							4303867	
							8	
<b>Contact safety device</b>			SIH part No.		43 042 350			
material design	076 / steel 345 / 2.0321				43 042 351			
for motor size 315			SIH part No.		43 042 359			
	076 / steel 345 / 2.0321				43 042 360			
<b>Base frame</b>			SIH part No.		on request			
material design	081 / RSt 37-2				35 002 946			
for motor size 315			SIH part No.		310 kg			
	081 / RSt 37-2							

Any changes in the technical development are reserved.

**Sterling SIHI GmbH**

Lindenstraße 170, D-25524 Itzehoe, Germany, Telephone +49 (0) 48 21 / 7 71 - 01, Fax + 49 (0) 48 21 / 7 71 - 274