

# Liquid Ring Vacuum Pumps

two-stage



SIHI® Pumps

## LOH 05501

**Pressure Range:** 80 to 1013 mbar  
**Suction Volume:** 2.7 to 6.1 m<sup>3</sup>/h

### CONSTRUCTION

Sterling SIHI liquid ring vacuum pumps have a simple but robust construction with the following features and benefits:

- Capable of handling almost all gases and vapours
- Near isothermal compression
- Oil free, with no internal lubrication
- Low maintenance and safe operation
- Low noise and almost vibration free
- Available in a wide range of materials
- Broad range of applications
- Rotating metallic parts are non contacting to minimise wear
- ATEX compliance

The LOH 05501 operates according to side channel principle and therefore the pump has the advantage, besides the above-mentioned features to handle large quantities of entrained liquid. Sterling SIHI liquid ring vacuum pumps of the range LOH 05501 are two-stage pumps. They can be used as compressors up to a compression pressure of 2 bar without any modification. (See the Technical Catalogue - Liquid Ring Compressors)



### NOTE

By continuously feeding the pump with a small amount of service liquid (usually water), the heat due to gas/vapour compression is conducted away. This also replenishes the liquid ring and ensures that it does not become saturated with process media. Recharging the pump with service liquid at ambient temperature enables the unit to condense evacuated gases/vapours. It can therefore be used for solvent recovery. The condensed gas and liquid can be separated in a liquid separator. More information is provided in the accessory catalogues.

The service liquid can simply be re-circulated. The rotation of the pump is clockwise when viewed from the drive end.

### APPLICATIONS

Evacuation and pumping of dry gases and saturated vapours. The pumps can also handle liquids. These units offer pressures in the range of 33...900 mbar (a) to atmospheric.

Typical application areas include:

- Chemical and pharmaceutical industry for distillation, drying and degassing
- Electronic industry for impregnation and drying
- Plastics & Rubber industry for degassing etc.

### GENERAL TECHNICAL DATA

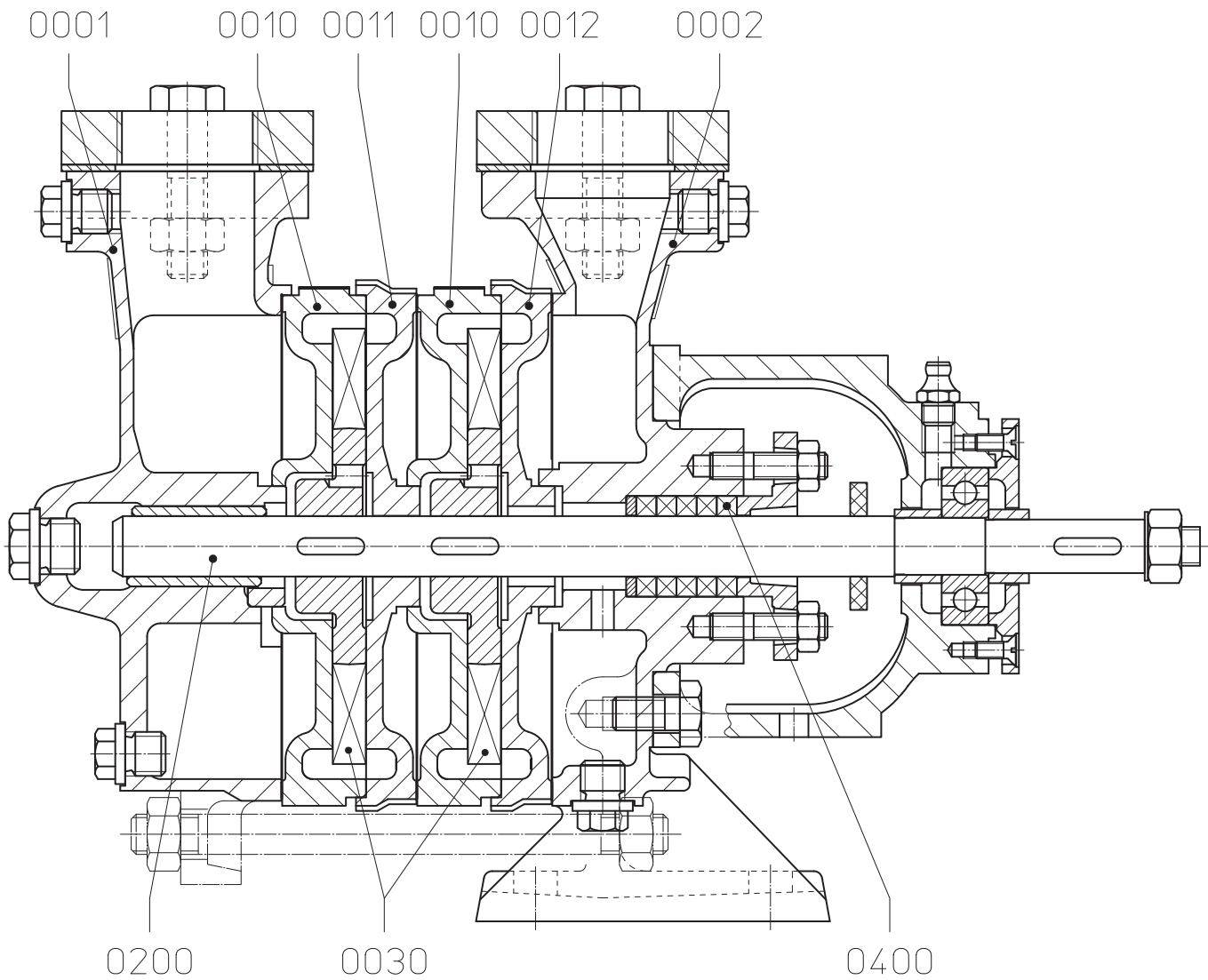
Pump Type	Units	LOH 05501		
		1150	1450	1700
Speed	rpm	1150	1450	1700
Maximum overpressure on compression	bar		2	
Maximum permissible pressure difference	bar		3	
Hydraulic test pressure (overpressure)	bar		4	
Moment of inertia of rotating parts of pump and water content	kg · m <sup>2</sup>		0.0033	
Noise level at 80 mbar suction pressure	dB (A)	64	65	66
Minimum permissible pulley diameter for V belt drive	mm		100	
Maximum gas temperature	dry		200	
	saturated		100	
Service liquid:				
Maximum permissible temperature	°C		100	
Maximum viscosity	mm <sup>2</sup> /s		90	
Maximum density	kg/m <sup>3</sup>		1200	
Liquid capacity up to middle of shaft	litre		1	
Maximum flow resistance of the heat exchanger	bar		0.2	

In selecting a pump, avoid choosing one which is likely to be operating at a combination of its maximum permissible limits e.g. maximum viscosity and maximum permissible pressure difference.

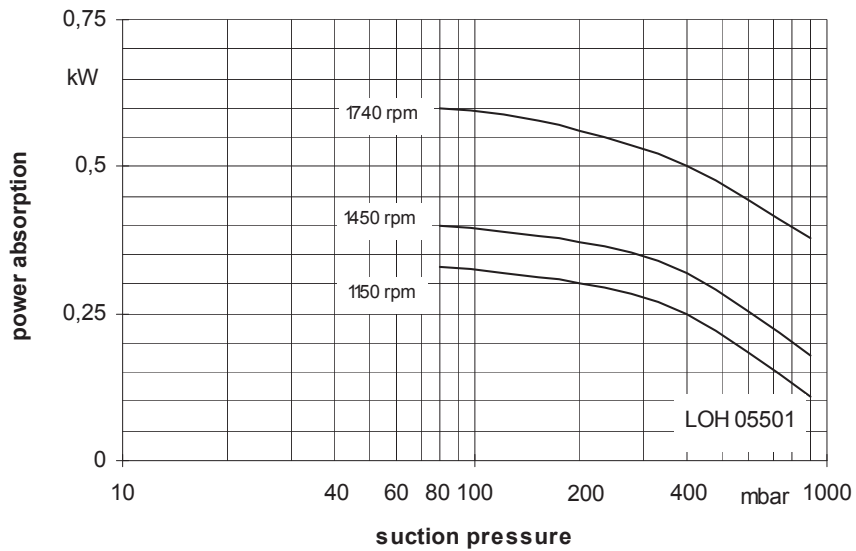
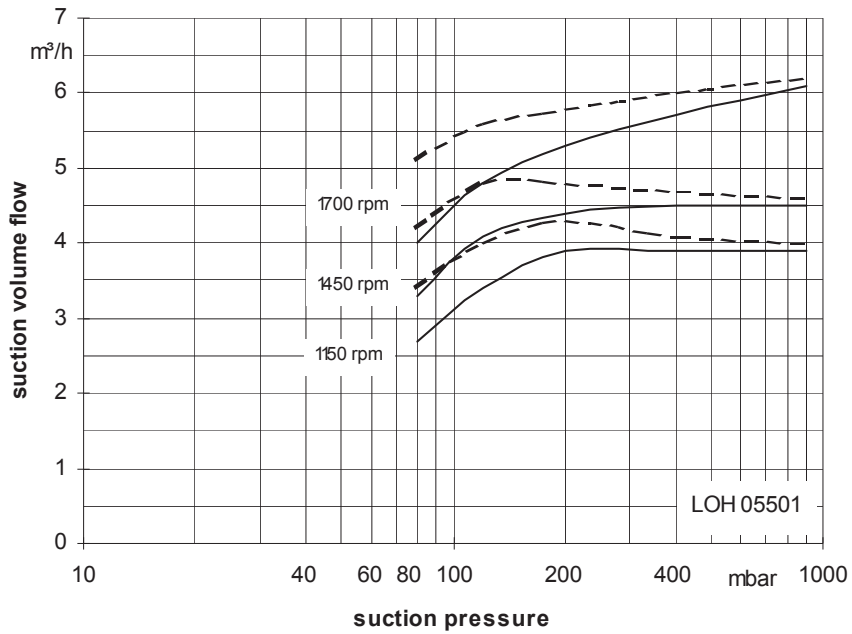
## Materials

Position Number	Component	Materials	
		01	32
0001, 0002	Casing	0.6025	2.1050.01
0010, 0011, 0012	Intermediate pieces		G Sn Bz 16
0030	Impeller	2.0550	2.1052.01
0200	Shaft	1.4021	1.4401
0400	Gland Packing	RAMIE	

## Cut-away diagram LOH 05501



# Performance Characteristics LOH 05501



The operating data is valid under the following conditions:

- Process media:
  - dry air: 20°C —————
  - steam saturated air: 20°C - - - - -
- Service liquid:
  - water: 15°C

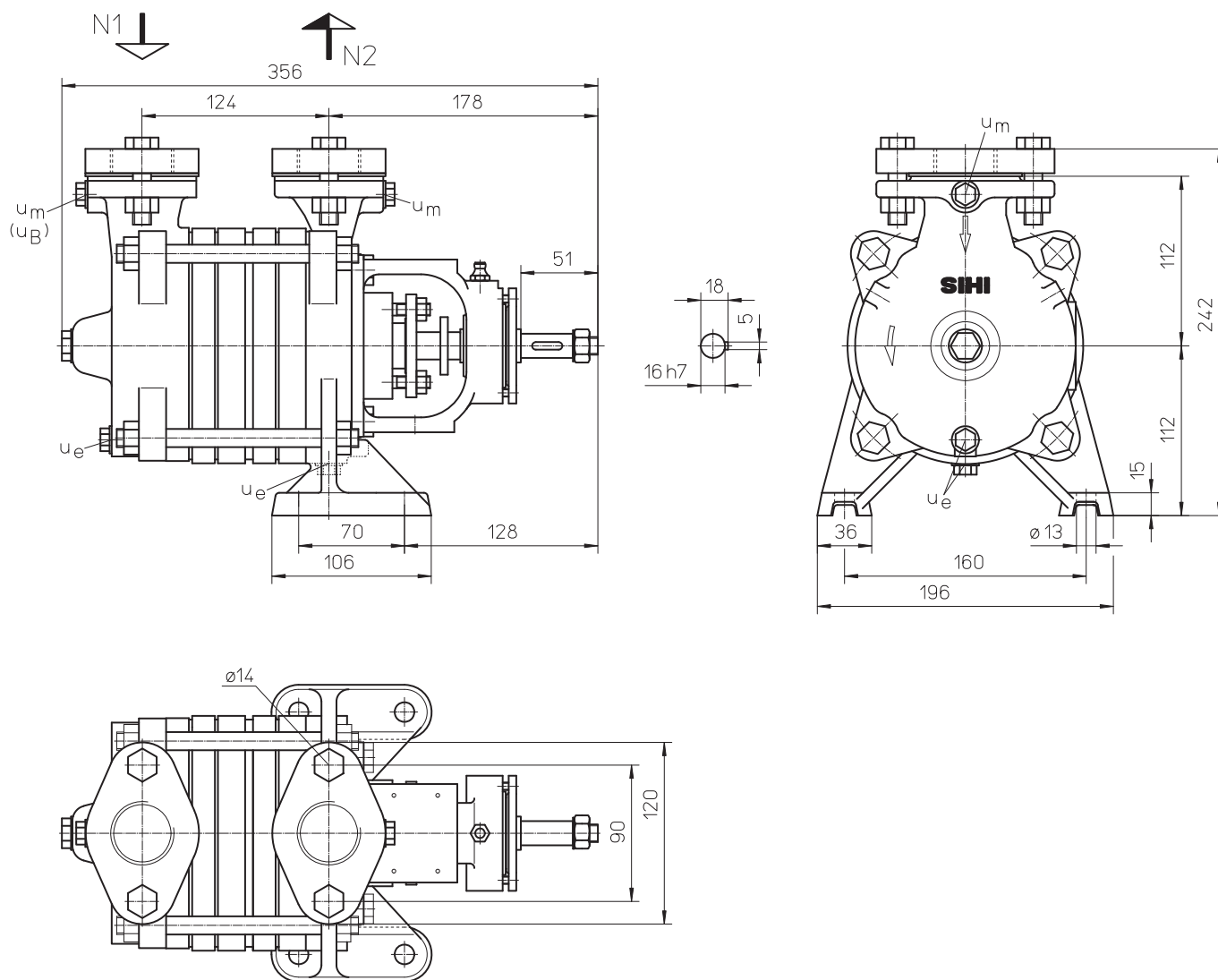
Pressure of gas to be evacuated: 1013 mbar (atmospheric pressure)

The suction volume is related to the suction pressure.

Tolerance on operating data is 10%.

The maximum consumption of make up water occurs at the lowest suction pressure.

## Dimensions LOH 05501

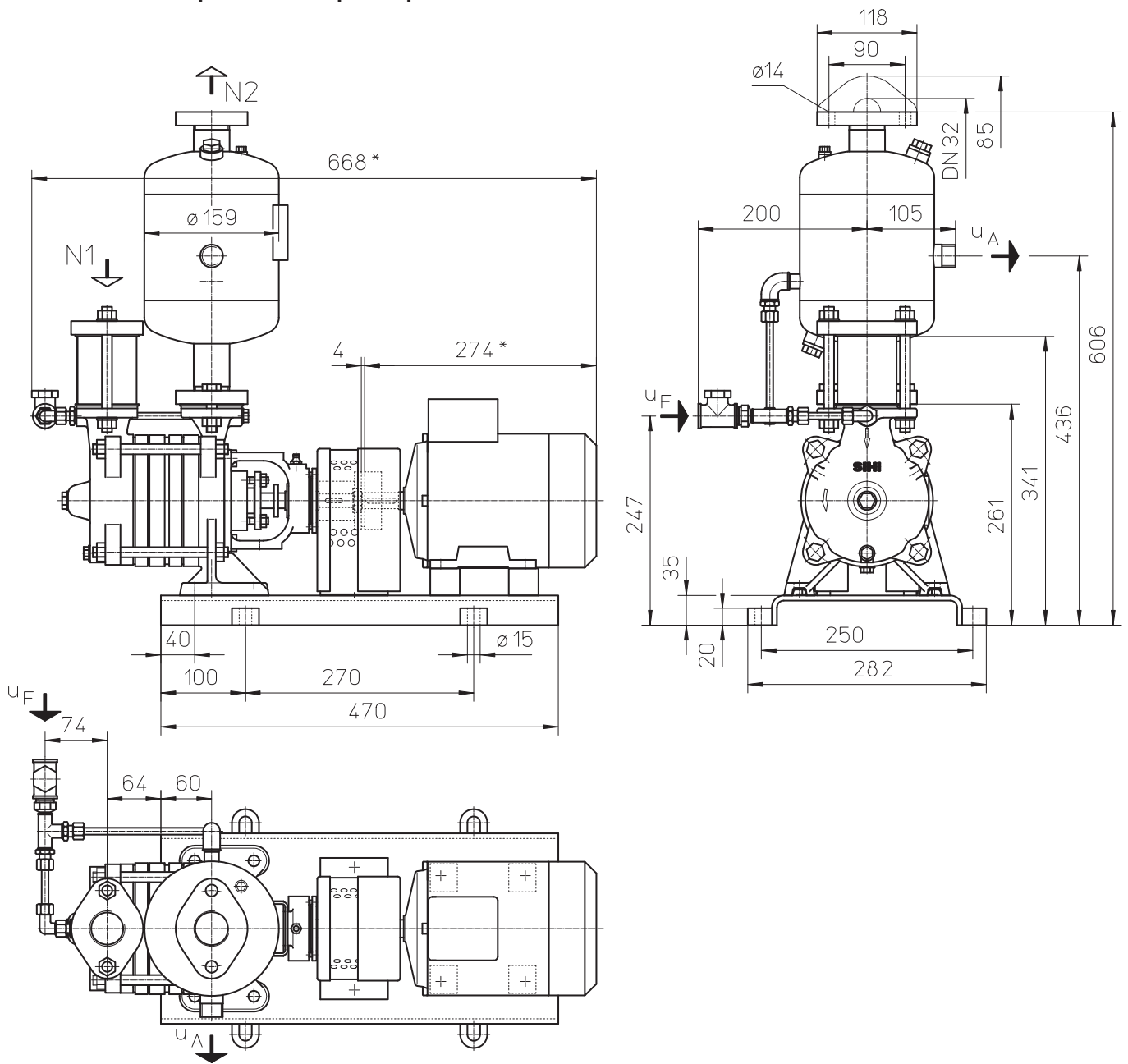


- N 1 = gas inlet      G 1 ¼
- N 2 = gas outlet    G 1 ¼
- u<sub>e</sub> = connection for drain G ¼
- u<sub>m</sub> = connection for pressure gauge G ¼

weight: 17 kg

The service liquid is fed into the suction line of the pump.

**LOH 05501 with top-mounted liquid separator**



- N 1 = gas inlet      G 1 ¼
- N 2 = gas outlet    DN 32
- u<sub>A</sub> = connection for liquid drain G ¾
- u<sub>F</sub> = connection for fresh liquid G ½

oval flanges according to DIN 2558 PN 6

	electric motor 50 Hz			approx. weight [kg]
	size	kW		
		IP 55	EEx e II T3	
LOH 05501	80	0.55	-	42
	80	-	0.55	
	80	-	0.75	44

\* dimensions dependent upon motor supplier

**Make-up liquid consumption** in [m<sup>3</sup>/h] dependent upon suction pressure, speed, drive type and temperature difference

Suction pressure in [mbar]		80			120			200			400						
Pump Type	Speed [rpm]	KB			FB	KB			FB	KB			FB				
		Temperature Difference [°C]				Temperature Difference [°C]				Temperature Difference [°C]							
		10	5	2		10	5	2		10	5	2					
LOH 05501	1150	0.02	0.04	0.08	0.2	0.02	0.04	0.08	0.2	0.02	0.04	0.08	0.2	0.02	0.03	0.07	0.17
	1450	0.03	0.05	0.09		0.03	0.05	0.09		0.03	0.05	0.09		0.02	0.04	0.08	
	1750	0.04	0.07	0.11		0.04	0.07	0.11		0.04	0.06	0.11		0.03	0.06	0.09	

FB = Total service liquid flow rate on once-through system

KB = Flow of make-up water when combined with partial recirculation liquid at a temperature of 10 °C, 5 °C, 2 °C warmer than make-up water.

### Product code - order details

Range + Size	Bearings + Sense of rotation	Shaft Seal	Materials	Casing Sealing
	<ul style="list-style-type: none"> <li>A• One sleeve bearing, one greased roller bearing</li> <li>•N One shaft end, clockwise rotating</li> </ul>	001 Gland Packing, standard design	01 Main parts of cast iron 32 Main parts of bronze	0 Liquid seal
LOH 05501	AN	001	01, 32	0

### Motor Selection

For our products we offer a lot of different motor types. To identify the right motor please specify frequency, voltage and protection class.

### Example of an Order:

LOHE 05501 AN 001 01 0 with 0.55 kW AC motor, 50 Hz, 230V Δ, IP55

## Accessories

Recommended Accessory	Material Execution		LOH 05501
<b>Top Mounted Liquid Separator</b>		Type / Weight	XBa 342 / 5 kg
Top mounted separator	Steel, galvanised	SIHI-Part No.	35 000 377
Service liquid pipework	Steel, galvanised	SIHI-Part No.	20 054 547
<b>Sterling SIHI – Non Return Ball valve</b>			
Intermediate flange execution XCK 32	0.6025 + Butadiene rubber 0.6025 + Teflon 1.4408 + Teflon	SIHI-Part No. Weight	20 072 744 / 1.2 kg 20 072 769 / 1.3 kg 20 029 488 / 3.0 kg
Flange execution with glass cylinder XCK 324	0.6025 + Butadiene rubber 0.6025 + Teflon 1.4408 + Teflon	SIHI-Part No. Weight	20 072 832 / 7.0 kg 20 072 833 / 7.0 kg 20 072 831 / 7.0 kg
<b>Motor</b>			
Motor Standard execution IP 55		Size Power Weight	80 0.55 kW 9 kg
Coupling for Motor IP 55		Type / Weight	B 68 / 0.6 kg
Pump side		SIHI-Part No.	43 040 236
Motor side		SIHI-Part No.	43 021 404
Coupling guard	Steel	SIHI-Part No.	43 042 205
<b>Motor</b>			
Motor in EEx e II T3 execution		Size Power Weight	80 0.55 kW 9 kg
Coupling for Motor EEx e II T3		Type / Weight	BDS 76 / 0.8 kg
Pump side		SIHI-Part No.	43 040 236
Motor side		SIHI-Part No.	43 025 690
Coupling guard	Brass	SIHI-Part No.	43 042 206
<b>Baseplate</b>			
	Steel	Type / Weight SIHI-Part No.	S 005 / 7 kg 43 040 645

Designs subject to change without prior notice.

### Sterling SIHI GmbH

Lindenstraße 170, D-25524 Itzehoe, Germany, Telephone +49 (0) 48 21/ 7 71 - 01, Fax +49 (0) 48 21/ 771-274