Liquid Ring Vacuum Pumps
in compact design

FLOWSERVE
SIHI® Pumps

SIHI LEMD
Sizes 27, 52, 92, 127, 162, 252, 327, 427

Pressure range: 33 to 1013 mbar abs / up to 28.9 vac. inHg
Suction volume flow: 5 to 450 m³/h / 2.9 to 265 cfm

Design

Flowserve SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- Handling of nearly all gases and vapours
- Optimized for handling of additional liquid carry-over
- Non-polluting due to nearly isothermal compression
- Oil-free, as no lubrication in the working chamber
- Easy maintenance and reliable operation
- Low noise and nearly free from vibration
- Protection against cavitation as standard
- Incorporated central drain
- Standard motors, future-proof and conform with NEMA Premium-Efficiency and IE3, IE4, etc.

The Flowserve SIHI liquid ring vacuum pumps LEMD are single-stage ones.

APPLICATION

Handling and exhausting of dry and humid gases, entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33 to 900 mbar abs / 28.9 to 3.4 vac. inHg must be created by robust vacuum pumps.

NOTE

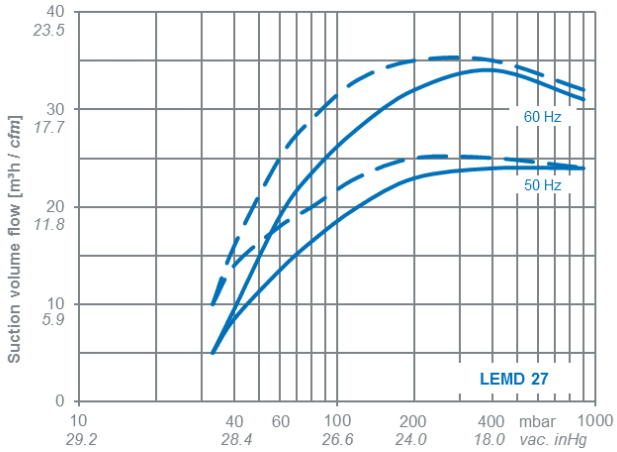
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator.
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (central drain), if necessary.
The direction of rotation is clockwise, when looking from the drive on the pump

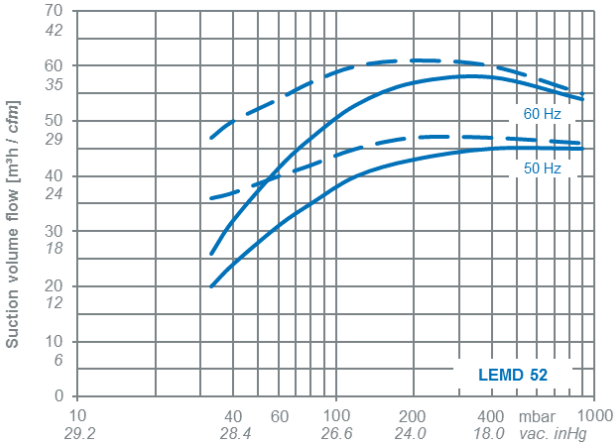
GENERAL TECHNICAL DATA

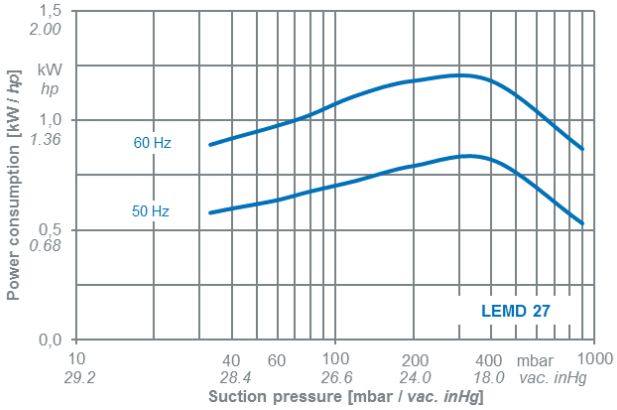
Pump type	unit	**LEM 27**	**LEM 52**	**LEM 92**	**LEM 127**	**LEM 162**	**LEM 252**	**LEM 327**	**LEM 427**
Speed 50 Hz / 60 Hz	rpm	2900 / 3500				1450 / 1750			
Maximum Overpressure	bar / psi	0.3 / 4.35							
Permissible pressure difference between suction and discharge side max. / min.	bar / psi	1.1 / 15.95 0.2 / 2.9							
Hydraulic test pressure (overpressure)	bar / psi	3.0 / 43.51							
Moment of inertia of rotating parts of pump and water	kg · m² lb · ft²	0.003 0.07	0.005 0.12	0.007 0.17	0.009 0.21	0.070 1.66	0.097 2.30	0.140 3.32	0.210 4.98
Acoustic emission level at 80 mbar / 27 vac. in Hg suction pressure and 1 m / 3 feet distance	dB (A)	64	70	69	70	73	72	69	74
Maximum gas temperature dry / saturated	°C / °F °C / °F	200 / 392 100 / 212							
Service liquid max. perm. Outlet temperature min. perm. Inlet temperature max. viscosity max. density	 °C / °F °C / °F mm²/s / ft²/s kg/m³ / lb/US.liq.gal	 80 / 176 10 / 50 4 / 4.3 · 10^{-5} 1200 12							
Liquid capacity up to middle of shaft	Liter US.liq.gal	0.5 .13	0.6 .16	1.0 .26	1.1 .29	2.9 .76	3.9 1.0	5.9 1.6	7.2 1.9
Maximum flow resistance of the heat exchanger	bar / psi	0.2 / 2.9							

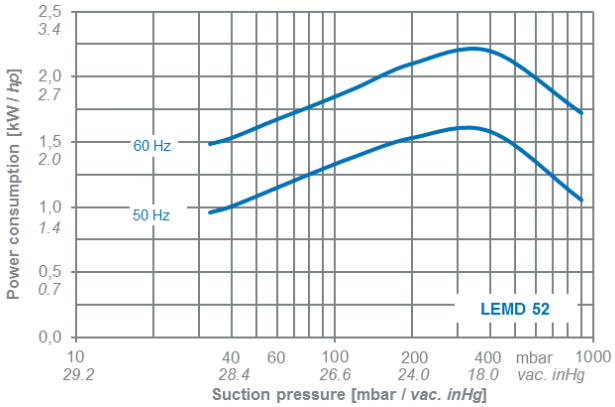
The combination of several limiting values is not admissible.

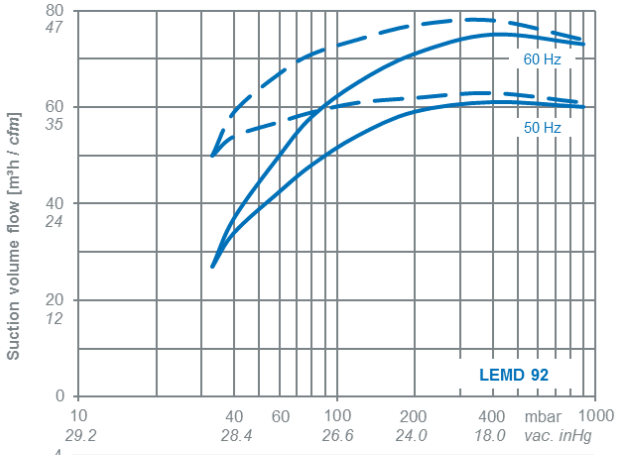
Performance Characteristics LEM 27, 52, 92, 127

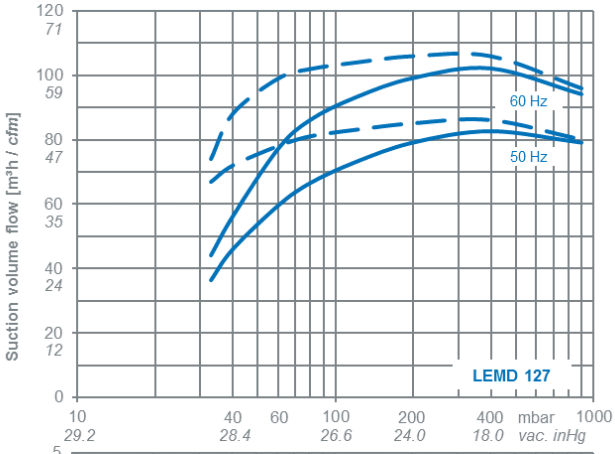


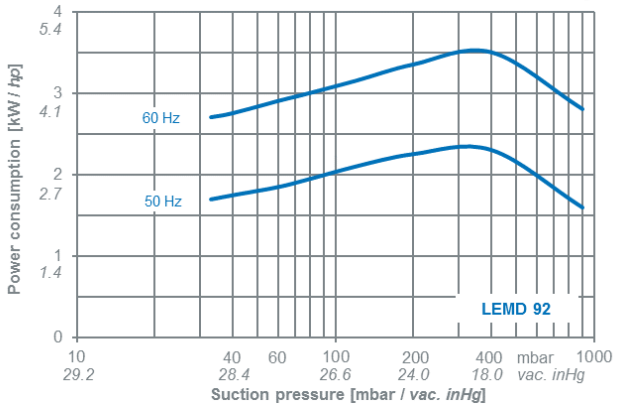


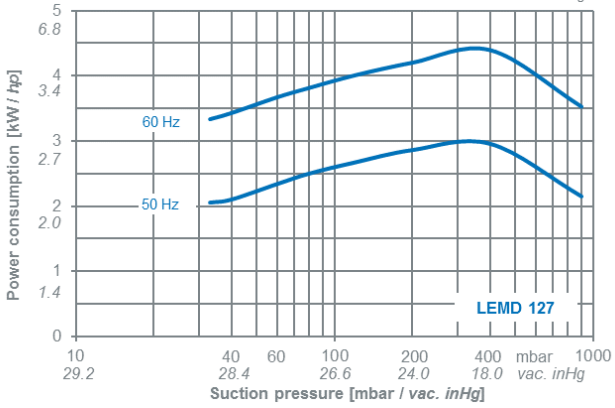










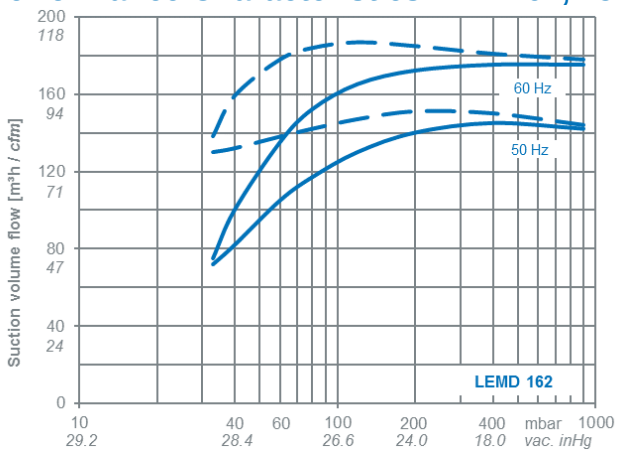


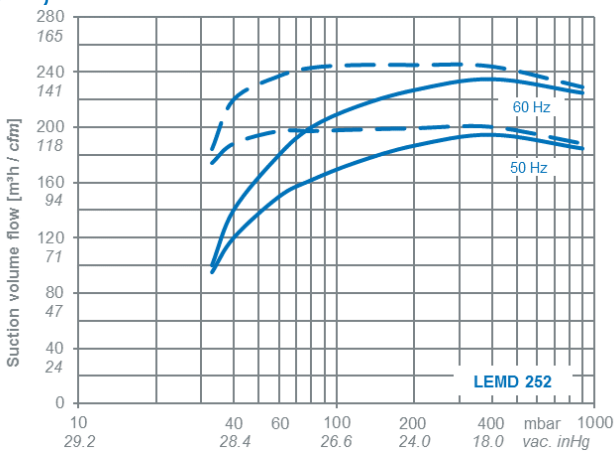
The operating data is valid under the following conditions:

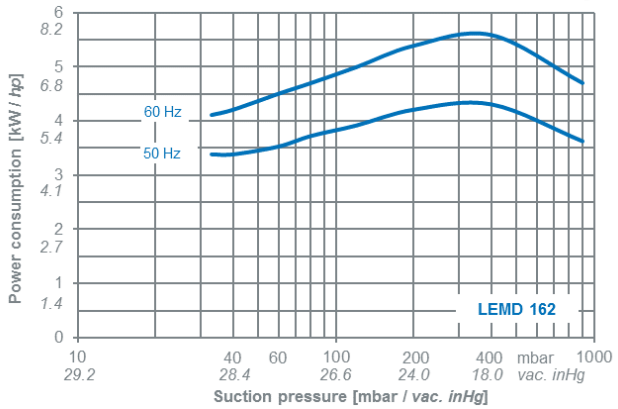
- Process medium: - dry air: 20°C / 68 °F
  - steam saturated air: 20°C / 68 °F
- Service liquid: - water: 15°C / 59 °F

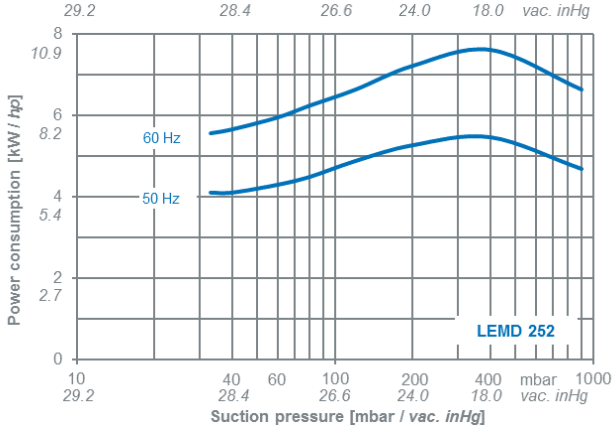
Pressure of gas to be evacuated = 1013 mbar / 0 vac. inHg (atmosph. pressure), suctions volume is related to suction pressure.
Tolerance 10%.

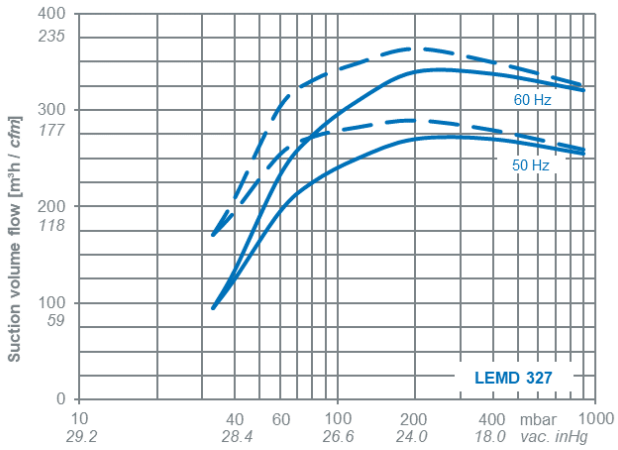
Performance Characteristics LEM 162, 252, 327, 427

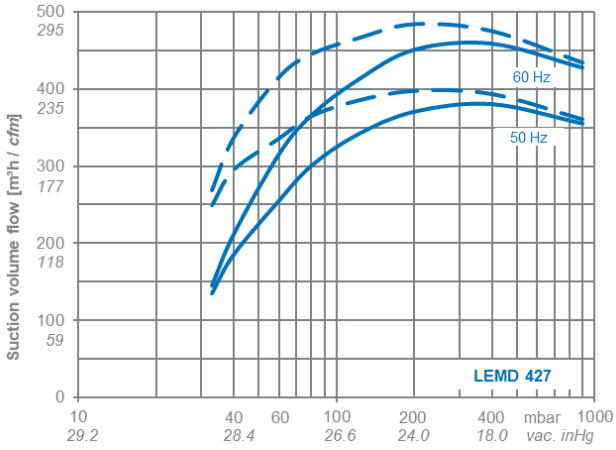


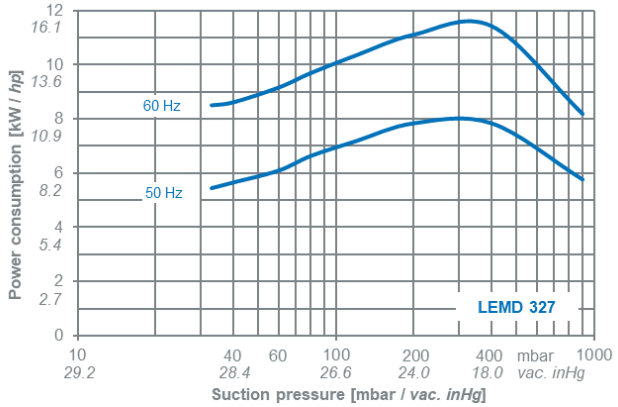


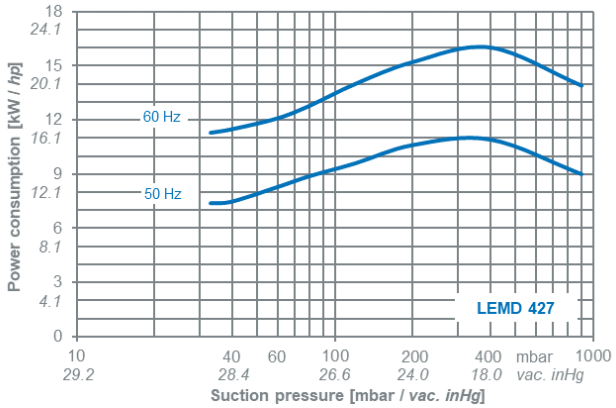












The operating data is valid under the following conditions:

- Process medium: - dry air: 20°C / 68 °F
  - steam saturated air: 20°C / 68 °F
- Service liquid: - water: 15°C / 59 °F

Pressure of gas to be evacuated = 1013 mbar / 0 vac. inHg (atmosph. pressure), suctions volume is related to suction pressure. Tolerance 10%.

Liquid ring vacuum pumps
in compact design

LEM 26, LEM 51

FLOWSERVE
SIHI® Pumps

Pressure range: **33 to 1013 mbar**
Suction volume flow: **3 to 58 m³/h**

CONSTRUCTION TYPE

SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- handling of nearly all gases and vapours
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- protection against cavitation as standard
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The SIHI liquid ring vacuum pumps LEM are single-stage ones.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33 to 900 mbar must be created by robust vacuum pumps.

NOTE

During operation the pump 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 liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.

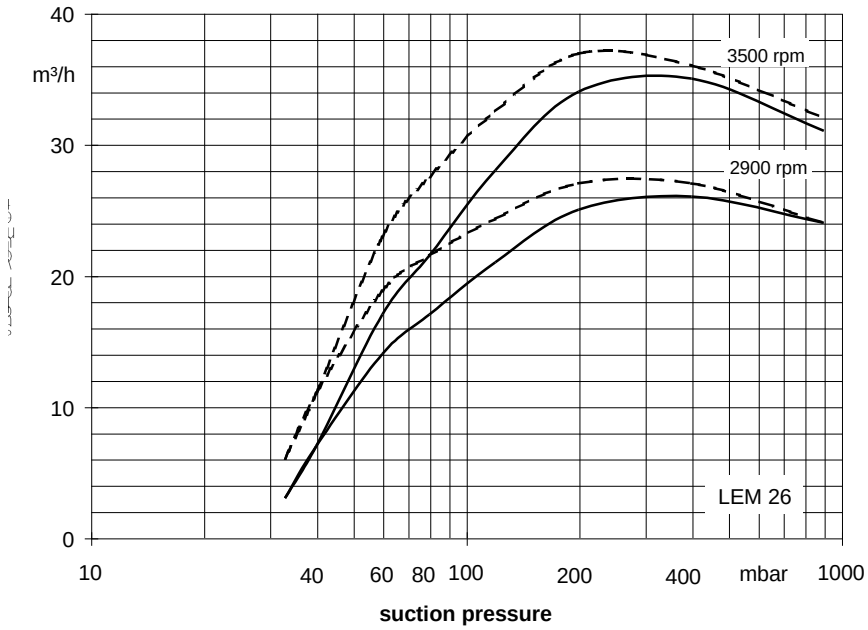
The direction of rotation is clockwise, when looking from the drive on the pump.

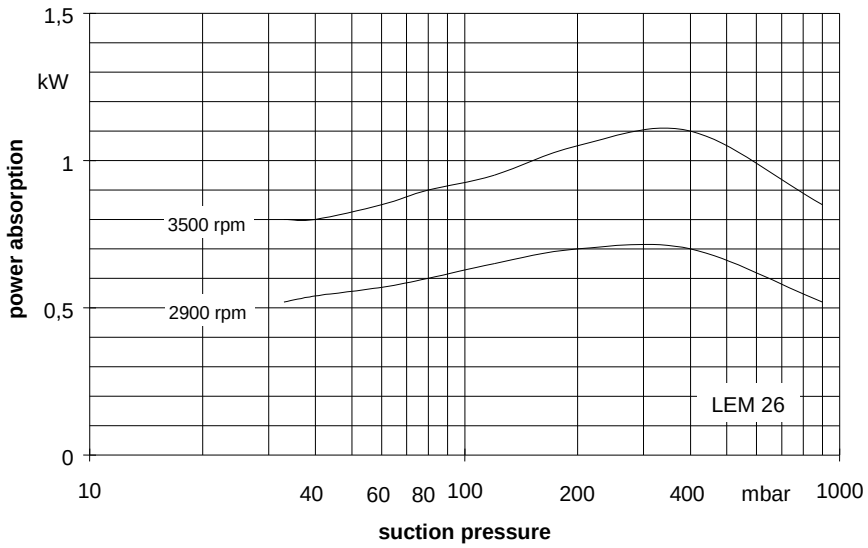
GENERAL TECHNICAL DATA

Pump type	units	LEM 26	LEM 51
Speed 50 Hz 60 Hz	rpm	2900 3500	
Maximum overpressure on compression	bar	0.3	
Permissible pressure difference between suction and discharge side	bar	1.1 0.2	
Hydraulic test pressure (overpressure)	bar	3	
Moment of inertia of rotating parts of pump and water content	kg · m²	0.003	0.005
Noise level at 80 mbar suction pressure	dB (A)	68	
Maximum gas temperature dry saturated	°C °C	200 100	
Service liquid: Maximum permissible temperature Minimum permissible temperature Maximum viscosity Maximum density Liquid capacity up to middle of shaft	 °C °C mm²/s kg/m³ litre	 80 10 4 1200 0.4	 0.6
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.

Performance Characteristics LEM 26



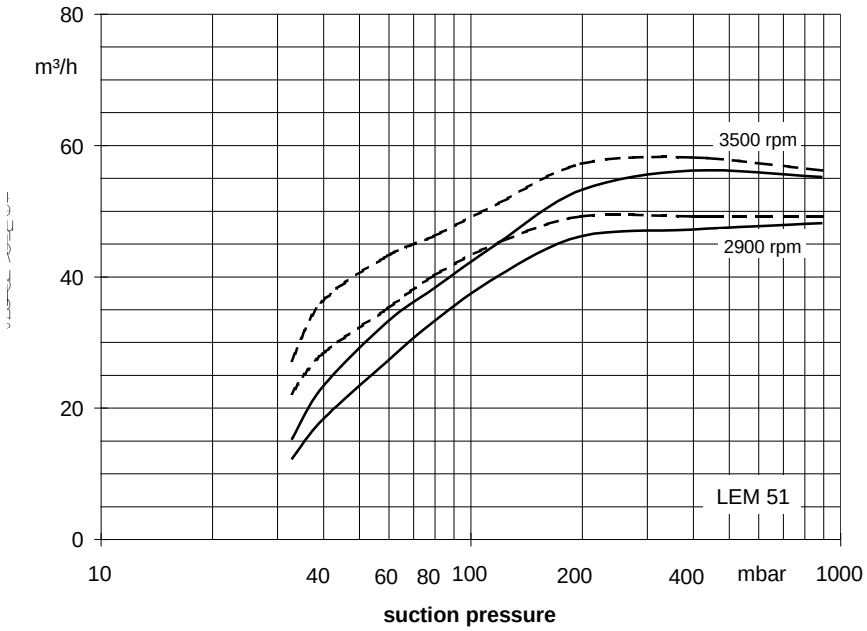


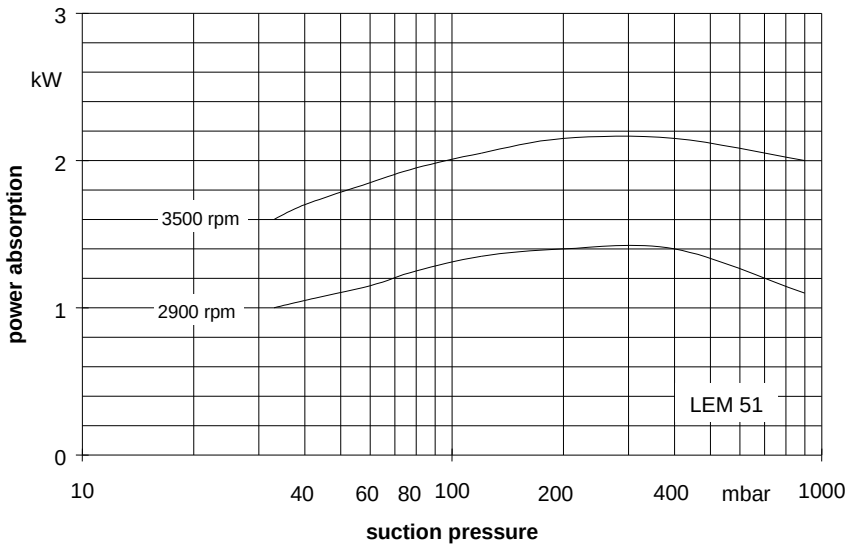
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LEM 51





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.

Liquid ring vacuum pumps
in compact design

FLOWSERVE
SIHI® Pumps

LEM 91, LEM 126, LEM 161
LEL 91, LEL 126, LEL 161
with flange connection

Pressure range: **33 to 1013 mbar**
Suction volume flow: **24 to 195 m³/h**

CONSTRUCTION

SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- handling of nearly all gases and vapours
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- protection against cavitation as standard
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The SIHI liquid ring vacuum pumps LEM/LEL are single-stage ones.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33 to 900 mbar must be created by robust vacuum pumps.

NOTE

During operation the pump 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 liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.

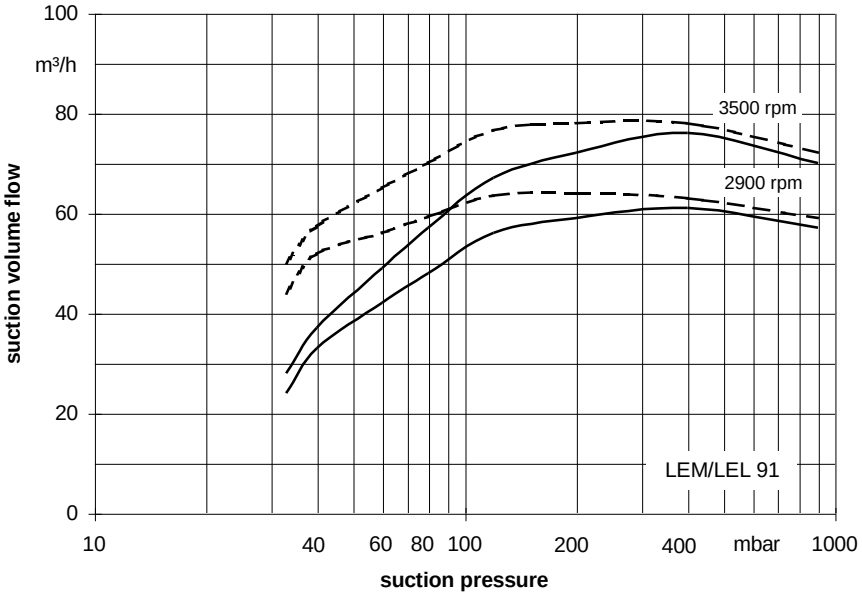
The direction of rotation is clockwise, when looking from the drive on the pump.

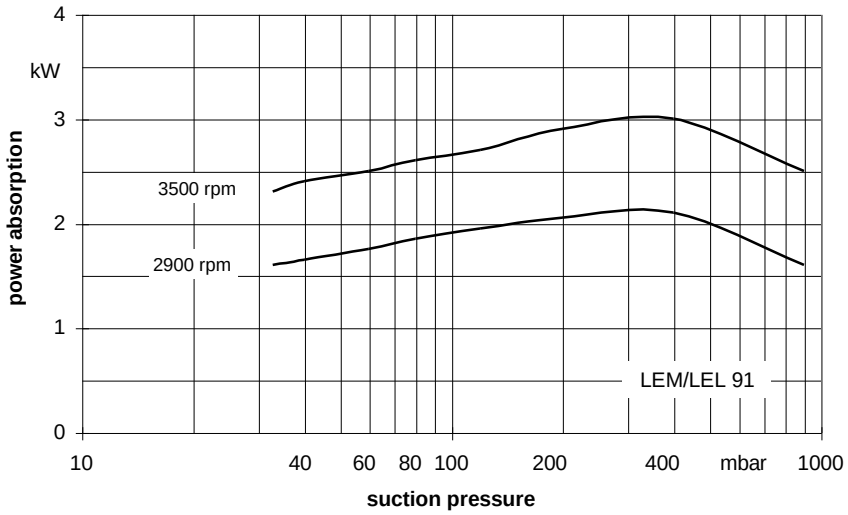
GENERAL TECHNICAL DATA

Pump type		unit	LEM 91 LEL 91	LEM 126 LEL 126	LEM 161 LEL 161
Speed	50 Hz 60 Hz	rpm rpm	2900 3500		1450 1750
Maximum overpressure on compression		bar	LEM 0.3 / LEL 0.5		
Permissible pressure difference between suction and discharge side	max. min.	bar	LEM 1.1 / LEL 1.3 0.2		
Hydraulic test pressure (overpressure)		bar	3		
Moment of inertia of rotating parts of pump and water content		kg · m²	0.007	0.009	0.070
Noise level at 80 mbar suction pressure		dB (A)	72 (67)*		65
Maximum gas temperature	dry saturated	°C °C	200 100		
Service liquid Maximum permissible temperature Minimum permissible temperature Maximum viscosity Maximum density Liquid capacity up to middle of shaft		 °C °C mm²/s kg/m³ litre	 80 10 4 1200 0.5	 0.6	 2.0
Maximum flow resistance of the heat exchanger		bar	0.2		

The combination of several limiting values is not admissible.
* value in parenthesis for measuring with sound insulation cup

Performance Characteristics LEM 91 / LEL 91



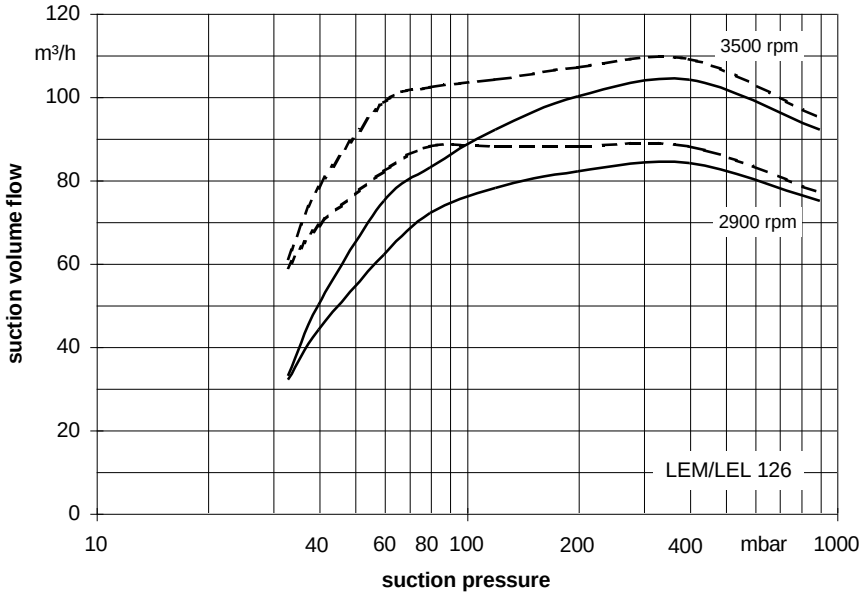


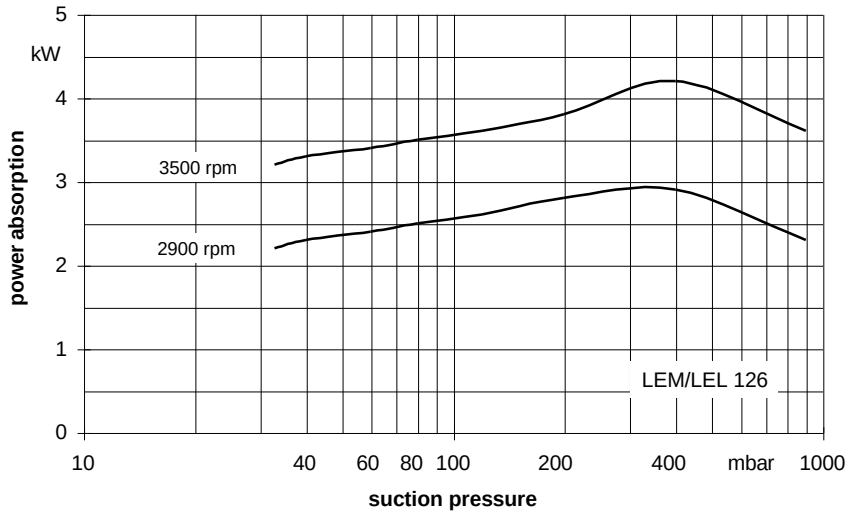
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LEM 126 / LEL 126



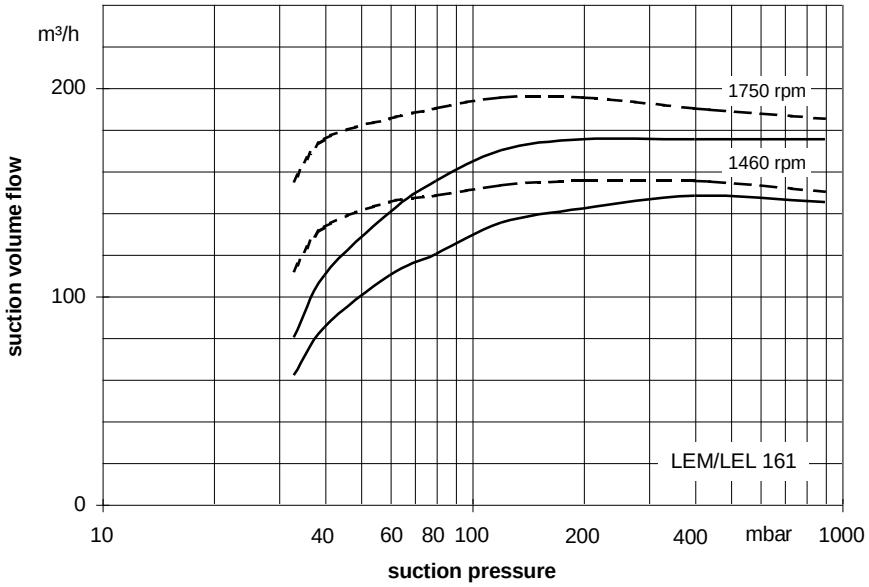


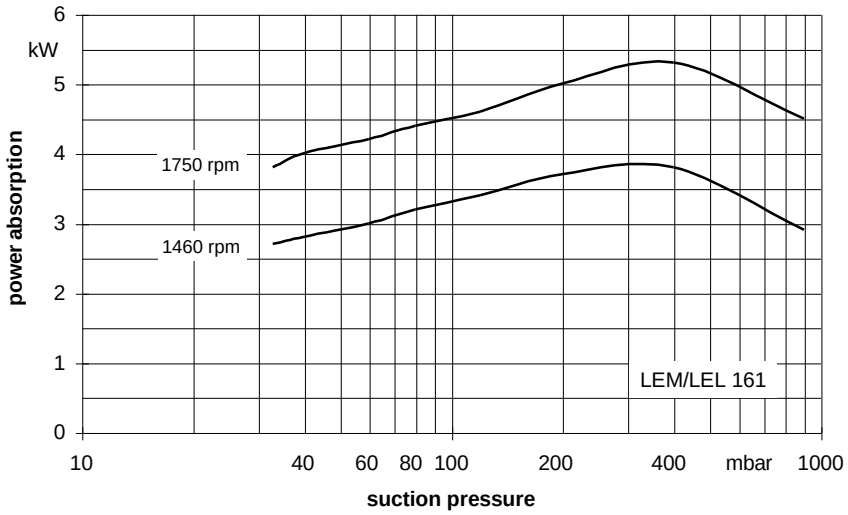
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LEM 161 / LEL 161





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.

Liquid ring vacuum pumps
in compact design

LEM 251
LEL 251

Pressure range: **33 to 1013 mbar**
Suction volume flow: **100 to 280 m³/h**

CONSTRUCTION

SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- handling of nearly all gases and vapours
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- protection against cavitation as standard
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The SIHI liquid ring vacuum pumps LEM/LEL are single-stage ones.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33 to 900 mbar must be created by robust vacuum pumps.

NOTE

During operation the pump 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 liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.

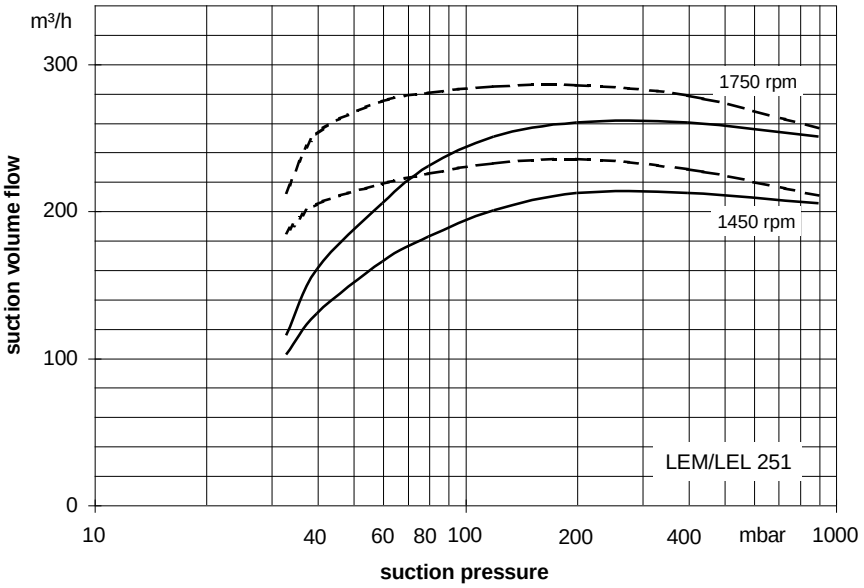
The direction of rotation is clockwise, when looking from the drive on the pump.

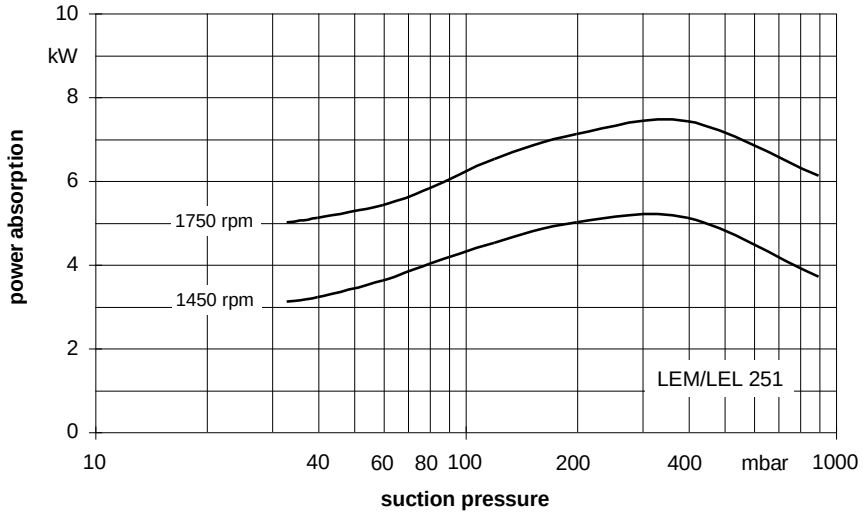
GENERAL TECHNICAL DATA

Pump type		unit	LEM 251 LEL 251
Speed	50 Hz 60 Hz	rpm	1450 1750
Maximum overpressure on compression		bar	LEM 0.3 / LEL 0.5
Permissible pressure difference between suction and discharge side	max. min.	bar	LEM 1.1 / LEL 1.3 0.2
Hydraulic test pressure (overpressure)		bar	3
Moment of inertia of rotating parts of pump and water content		kg · m²	0.097
Noise level at 80 mbar suction pressure		dB (A)	65
Maximum gas temperature	dry saturated	°C °C	200 100
Service liquid Maximum permissible temperature Minimum permissible temperature Maximum viscosity Maximum density Liquid capacity up to middle of shaft		 °C °C mm²/s kg/m³ litre	 80 10 4 1200 2.7
Maximum flow resistance of the heat exchanger		bar	0.2

The combination of several limiting values is not admissible.

Performance Characteristics LEM 251 / LEL 251





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

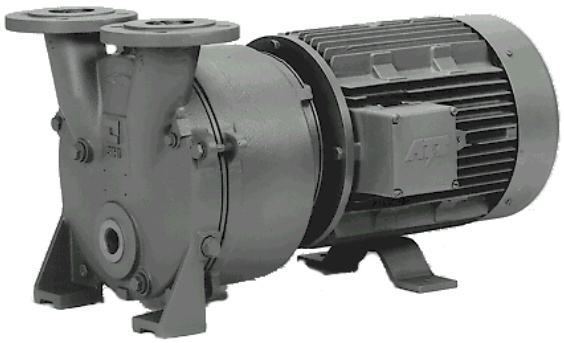
Pressure of gas to be evacuated: 1013 mbar (atmospheric pressure)
The suction volume is related to the suction pressure.
Tolerance on operating data is 10%.
The maximum consumption of make-up water occurs at the lowest suction pressure.

Liquid ring vacuum pumps
in compact design

LEM 325, LEM 425

FLOWSERVE
SIHI® Pumps

Pressure range: **33 to 1013 mbar**
Suction volume flow: **100 to 470 m³/h**



CONSTRUCTION TYPE

SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- handling of nearly all gases and vapours
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- shaft not contact with the medium
- protection against cavitation as standard
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The SIHI liquid ring vacuum pumps LEM are single-stage ones.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33 to 900 mbar must be created by robust vacuum pumps.

NOTE

During operation the pump 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 liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.

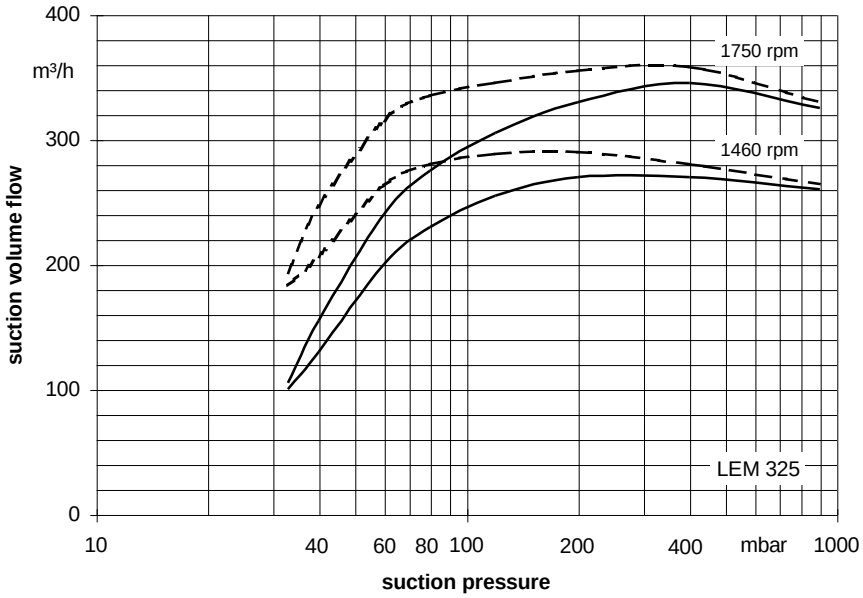
The direction of rotation is clockwise, when looking from the drive on the pump.

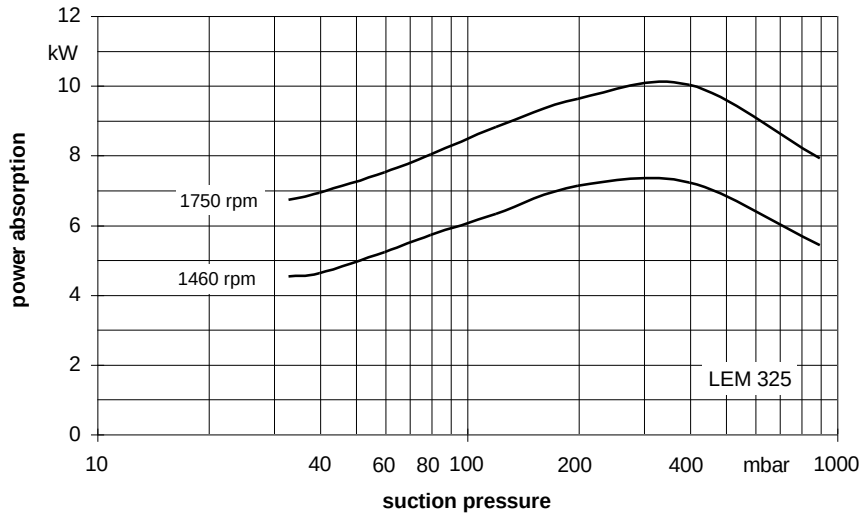
GENERAL TECHNICAL DATA

Pump Type		Units	LEM 325	LEM 425
Speed	50 Hz 60 Hz	rpm	1450 1750	
Maximum overpressure on compression		bar	0.3	
Permissible pressure difference between suction and discharge side	max. min.	bar	1.1 0.2	
Hydraulic test pressure (overpressure)		bar	3	
Moment of inertia of rotating parts of pump and water content		kg · m²	0.14	0.21
Noise level at 80 mbar suction pressure		dB (A)	70	72
Maximum gas temperature	dry saturated	°C °C	200 100	
Service liquid:				
Maximum permissible temperature		°C	80	
Minimum permissible temperature		°C	10	
Maximum viscosity		mm²/s	4	
Maximum density		kg/m³	1200	
Liquid capacity up to middle of shaft		liter	4.3	4.7
Maximum flow resistance of the heat exchanger		bar	0.2	

The combination of several limiting values is not admissible.

Performance Characteristics LEM 325



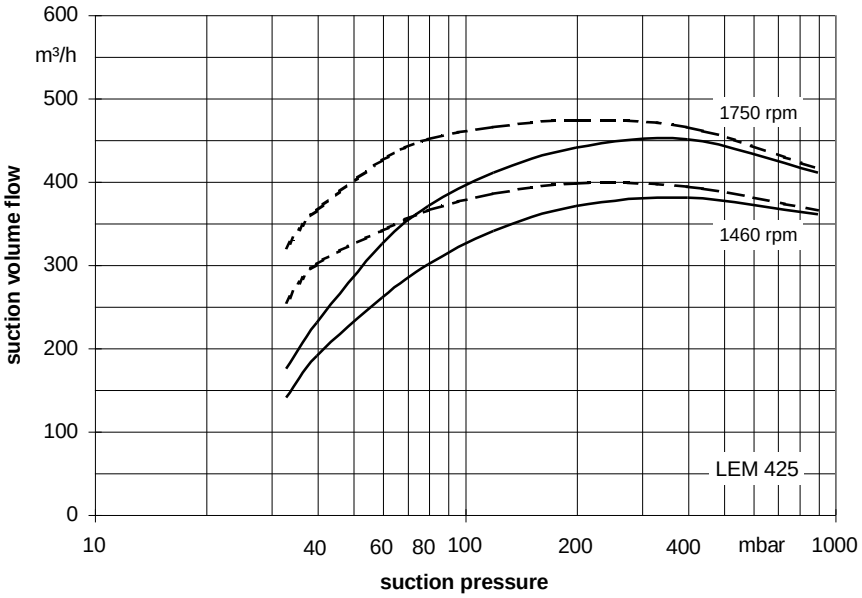


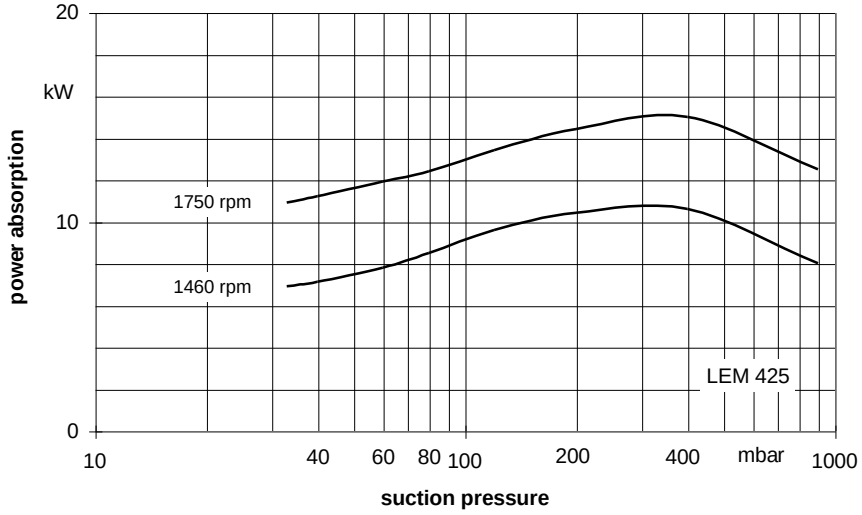
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LEM 425





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.

Liquid ring vacuum pumps
single-stage

LOH 20103, LOH 20107

FLOWSERVE
SIHI® Pumps

Pressure range: **150 to 1013 mbar**
Suction volume flow: **7 to 58 m³/h**

CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- handling of nearly all gases and vapours
- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable
- Low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- incorporated central drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pumps LOH 20103 and LOH 20107 are single-stage ones. They can be applied without modification as compressors up to a compression pressure of 1 bar (see catalogue part K).

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 150 to 900 mbar must be created by robust vacuum pumps.
Fields of application are for example:

- chemistry and pharmacy for distilling and degassing,
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

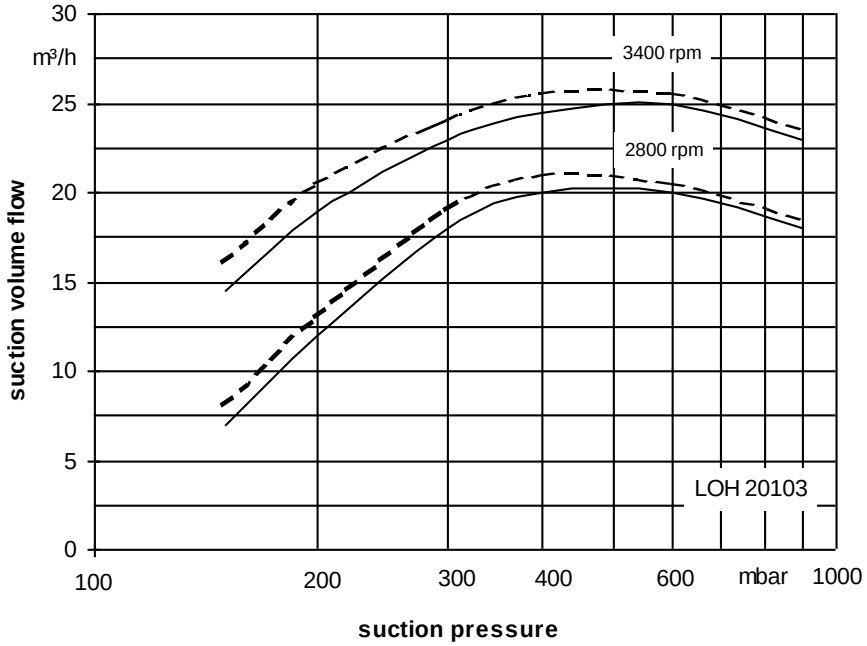
During operation the pump must be continuously supplied with service liquid, normally water, in order to eliminate the heat resulting from gas compression and in order to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
Reuse of the service liquid is possible.
The direction of rotation of the pump is clockwise when looking from the drive on the pump.

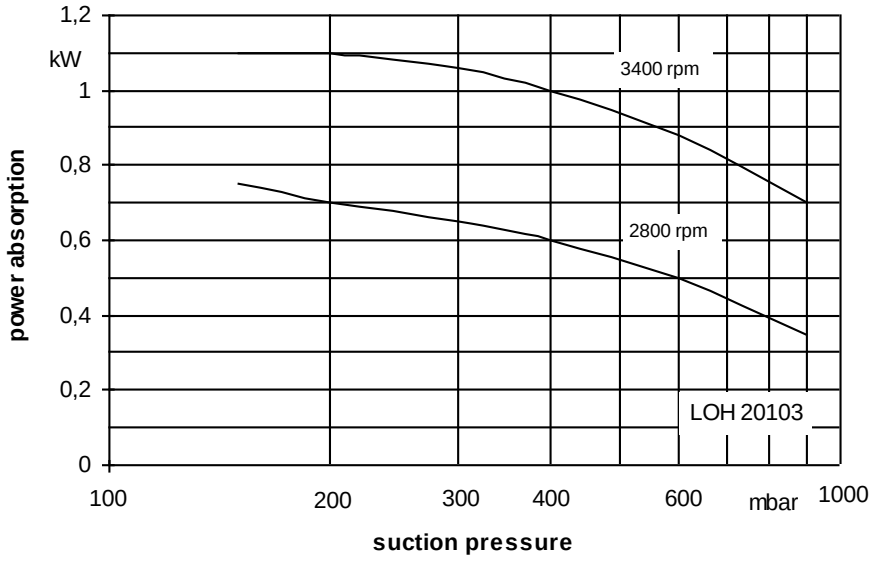
GENERAL TECHNICAL DATA

Pump Type	units	LOH 20103	LOH 20107
Speed 50 Hz 60 Hz	rpm	2800 3400	2800 3400
Maximum overpressure on compression	bar		
Permissible pressure difference between suction and discharge side	bar	2.0 0.2	
Hydraulic test pressure (Overpressure)	bar	3	
Moment of inertia of rotating parts of pump and water content	kg · m²	0.0033	0.005
Noise level at 80 mbar suction pressure	dB (A)	66 67	
Minimum permissible pulley diameter for V belt drive	mm	80	
Maximum gas temperature dry saturated	°C °C	200 100	
Service liquid: Maximum permissible temperature Minimum permissible temperature Maximum viscosity Maximum density Liquid capacity up to middle of shaft	 °C °C mm²/s kg/m³ litre	 80 10 90 1200 0.9	 1.0
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.

Performance Characteristics LOH 20103



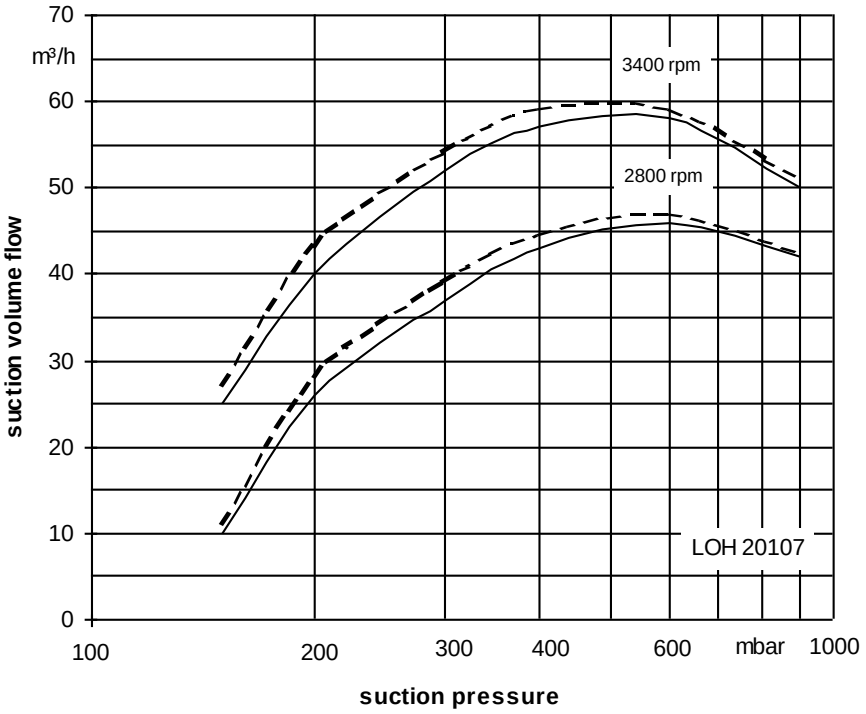


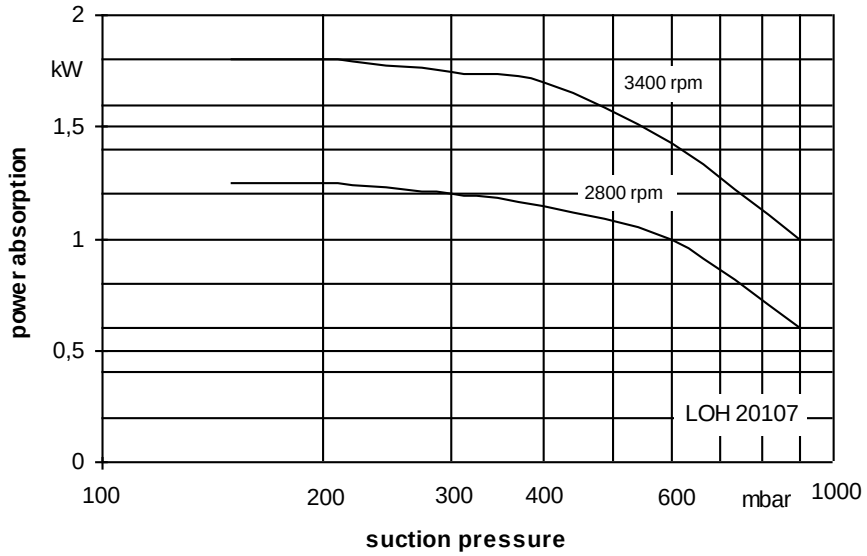
The operating data is valid under the following conditions:

- 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% and on power absorption is 5%.
The maximum consumption of make-up water occurs at the lowest suction pressure.

Performance Characteristics LOH 20107





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% and on power absorption is 5%.
The maximum consumption of make-up water occurs at the lowest suction pressure.

Liquid ring vacuum pumps
two-stage

LOH 25003, LOH 25007, LOH 25309

FLOWSERVE
SIHI® Pumps

Pressure range: **33 to 1013 mbar**
Suction volume flow: **11 to 60 m³/h**

CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- handling of nearly all gases and vapours
- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- protection against cavitation as standard
- no metallic contact of the rotating parts

Die Sterling SIHI liquid ring vacuum pumps LOH 25003, LOH 25007 and LOH 25309 are two-stage ones. They can be applied without modification as compressors (see catalogue section liquid ring compressors).

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33 to 900 mbar must be created by robust vacuum pumps.
Fields of application are for example:

- chemistry and pharmacy for distilling and degassing
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

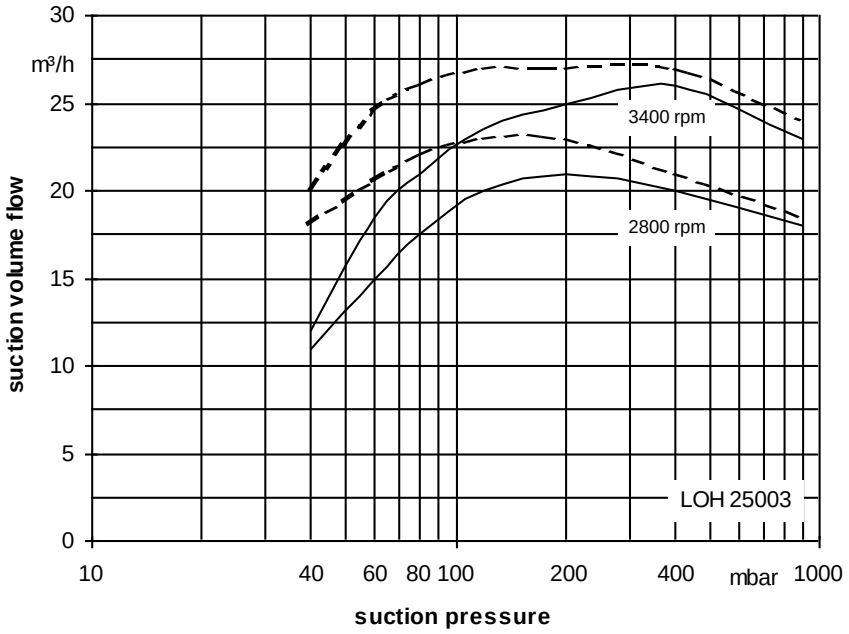
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. The liquid can be separated from the gas in a 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.

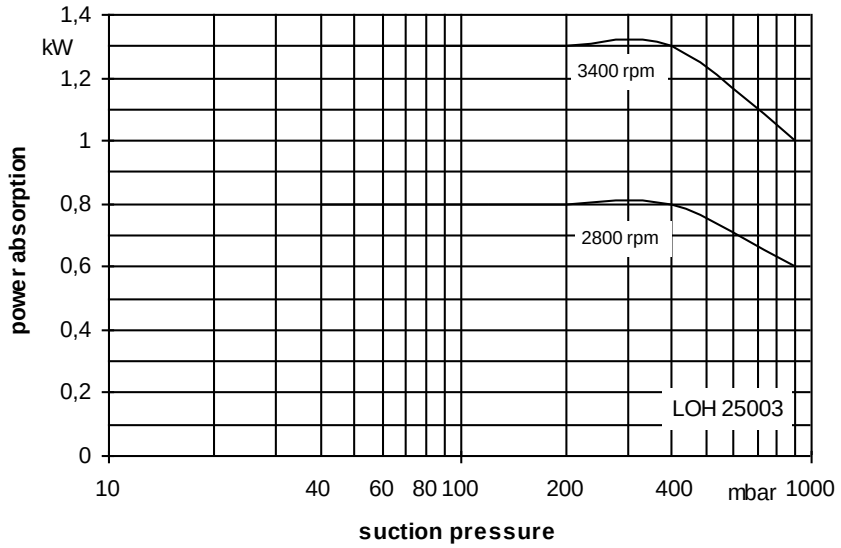
GENERAL TECHNICAL DATA

Pump Type		Units	LOH 25003	LOH 25007	LOH 25309
Speed	50 Hz 60 Hz	rpm	2800 3400	2800 3400	2900 3500
Maximum overpressure on compression		bar	2.0		1.2
Permissible pressure difference between suction and discharge side	max. min.	bar	2.0 0.2		1.2 0.2
Hydraulic test pressure (overpressure)		bar	3		
Moment of inertia of rotating parts Of pump and water content		kg · m²	0.004	0.0065	0.00875
Noise level at 80 mbar suction pressure		dB (A)	66 67		
Minimum permissible pulley diameter for V belt drive		mm	71 80	71 80	100
Maximum gas temperature	dry saturated	°C	200 100		
Service liquid:					
maximum permissible temperature		°C	80		
minimum permissible temperature		°C	10		
maximum viscosity		mm²/s	90		
maximum density		kg/m³	1200		
liquid capacity up to middle of shaft		litre	1.0	1.2	1.4
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.

Performance Characteristics LOH 25003



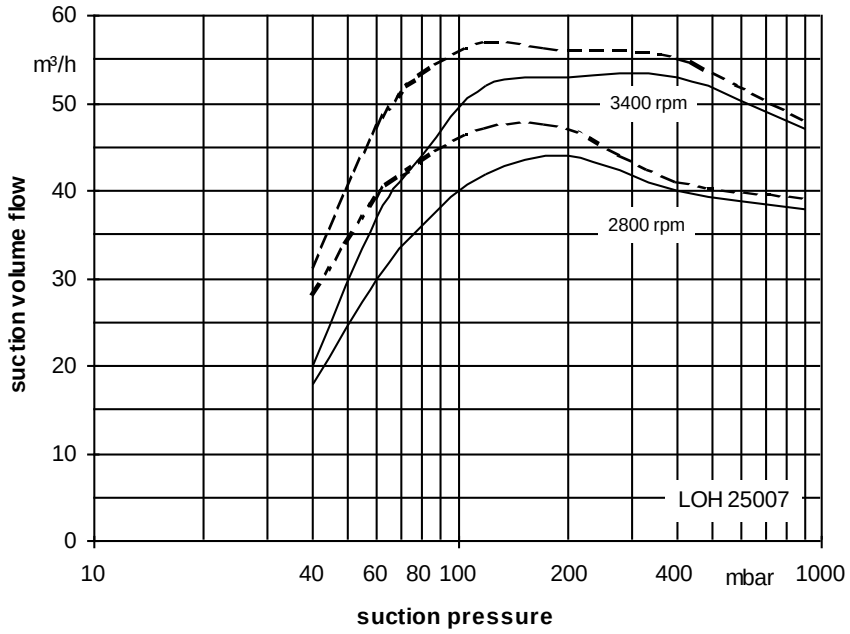


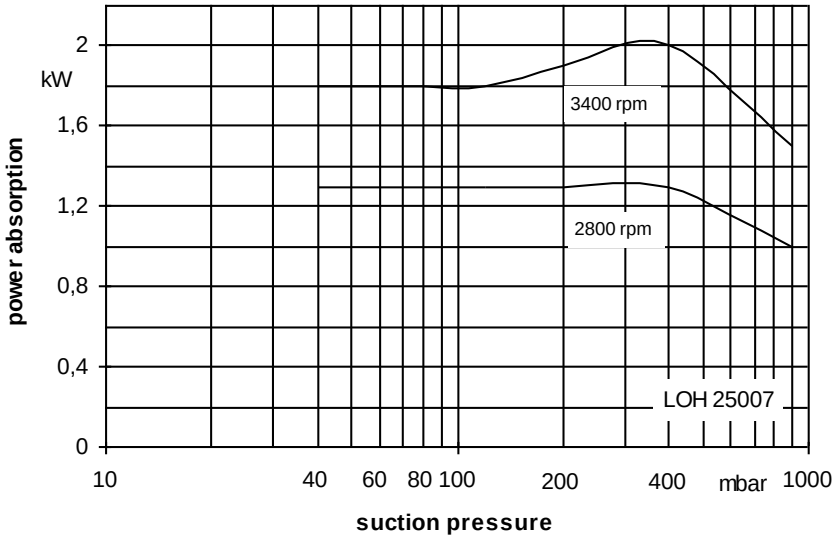
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LOH 25007



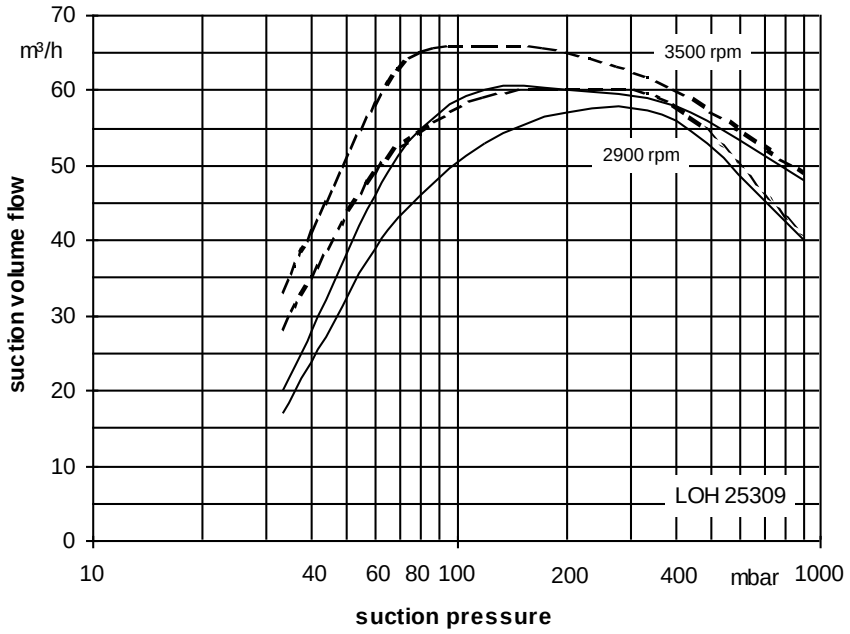


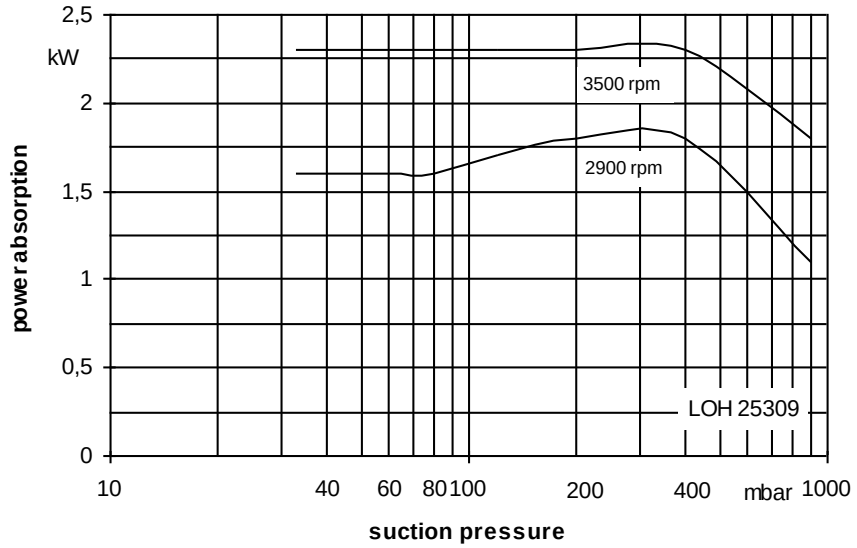
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LOH 25309





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.

Liquid Ring Vacuum Pumps
two-stage

LOH 05501

FLOWSERVE
SIHI® Pumps

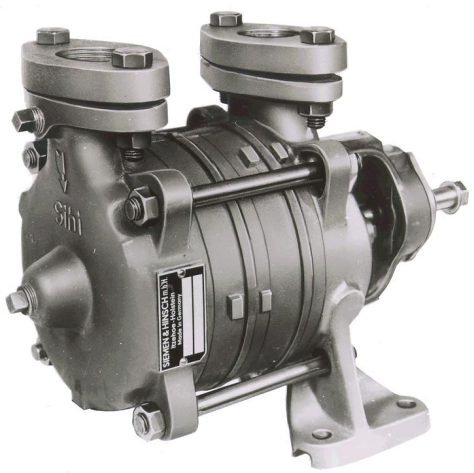
Pressure Range: **80 to 1013 mbar**
Suction Volume: **2.7 to 6.1 m³/h**

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)



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.

NOTE

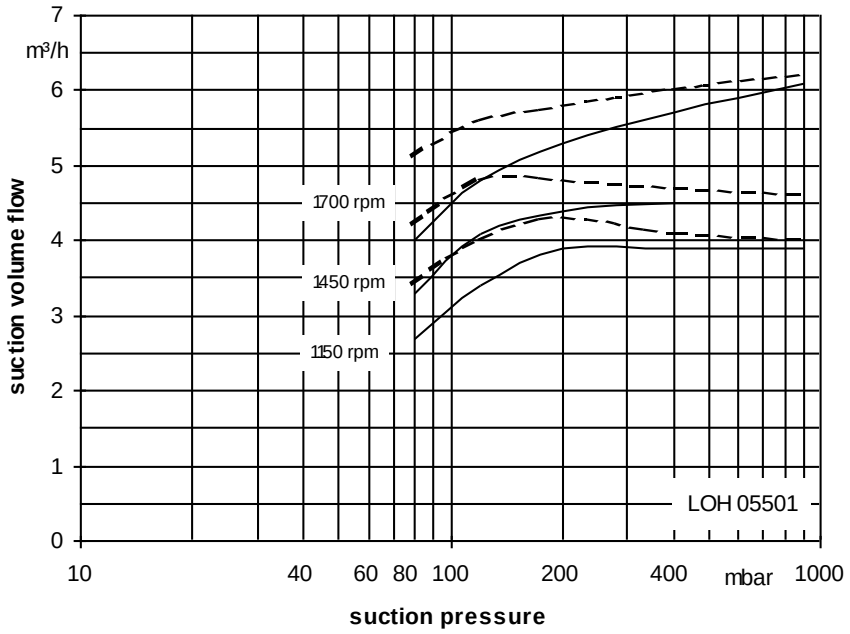
By continuously feeding the pump with a small amount of service liquid (usually water), the heat due to gas/vapour compression is conducted away. This also replenishes the liquid ring and ensures that it does not become saturated with process media. Recharging the pump with service liquid at ambient 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.

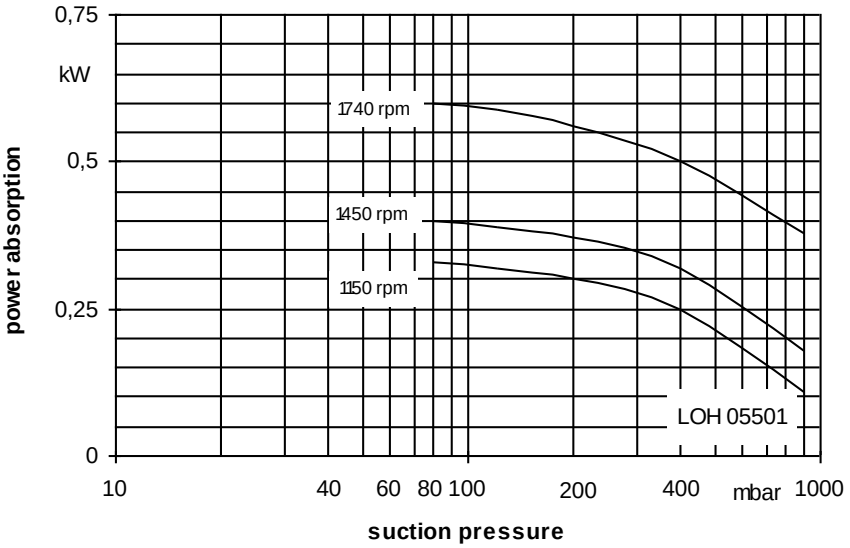
GENERAL TECHNICAL DATA

Pump type	units	LOH 05501		
Speed	rpm	1150	1450	1700
Maximum overpressure on compression	bar		1.5	2.0
Permissible pressure difference between suction and discharge side	bar		2.0 0.2	
Hydraulic test pressure (overpressure)	bar		3	
Moment of inertia of rotating parts of pump and water content	kg · m²		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 saturated	°C °C		200 100	
Service liquid: Maximum permissible temperature Minimum permissible temperature Maximum viscosity Maximum density Liquid capacity up to middle of shaft	 °C °C mm²/s kg/m³ litre		 80 10 90 1200 1.0	
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.

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.

SIHI^{LPH-X} - Liquid Ring Vacuum Pump

One Stage

LPH 40106, LPH 40411, LPH 40516

FLOWSERVE
SIHI® Pumps

Pressure Range: **150 to 1013 mbar**
Suction Range: **45 to 275 m³/h**

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

- Near isothermal compression
- Oil free, with no internal lubrication
- Capable of handling almost all gases and vapours
- Able to handle quantities of liquid “carry over”
- Low maintenance and safe operation
- Low noise and almost vibration free
- Available in a wide range of materials
- Broad range of applications
- O-ring sealing as standard
- Drain hole as standard
- Built-in solids drain
- Rotating metallic parts are non contacting to minimise wear
- ATEX compliance

SIHI liquid ring vacuum pumps of the range LPH 40106, LPH 40411 and LPH 40516 are one stage pumps. They can be used as compressors without any modification.

APPLICATIONS
Evacuation and pumping of dry gases and saturated vapours. The pumps can also handle liquids. These units offer pressures in the range of 150…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
- Food and beverage industry for bottle filling.

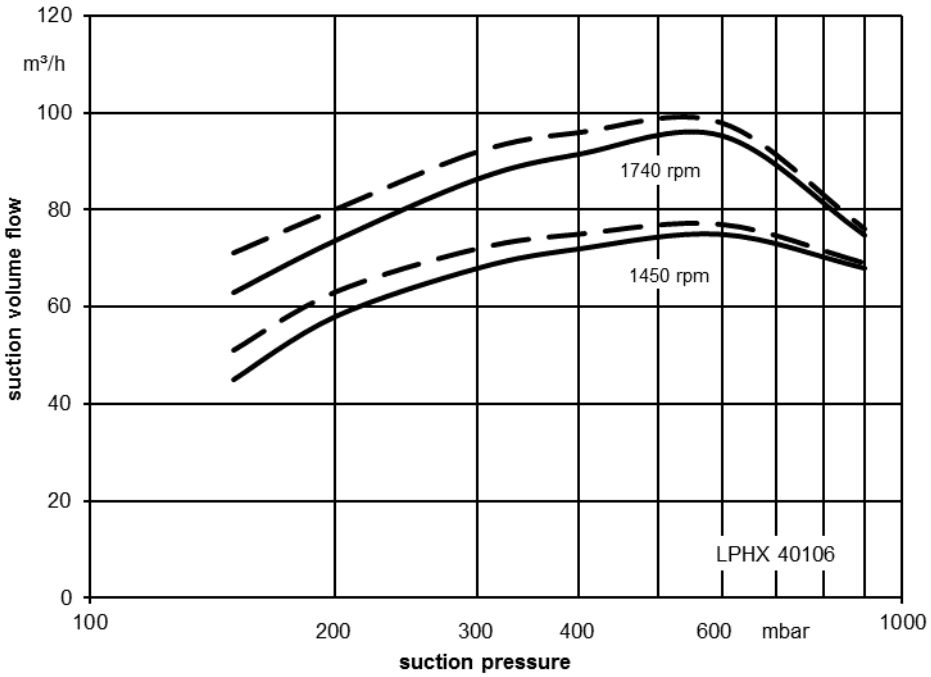
NOTE
By continuously feeding the pump with a small amount of service liquid (usually water), the heat due to gas/vapour compression is conducted away. This also replenishes the liquid ring and ensures that it does not become saturated with process media. The condensed gas and fluid can be separated in a liquid separator (see Accessories Catalogue). 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. More information is provided in the accessory catalogues. The integrated solids drain permits the removal of any entrained solids whilst the pump is operating. The service liquid can, therefore, simply be re-circulated.
The rotation of the pump is clockwise when viewed from the drive end.

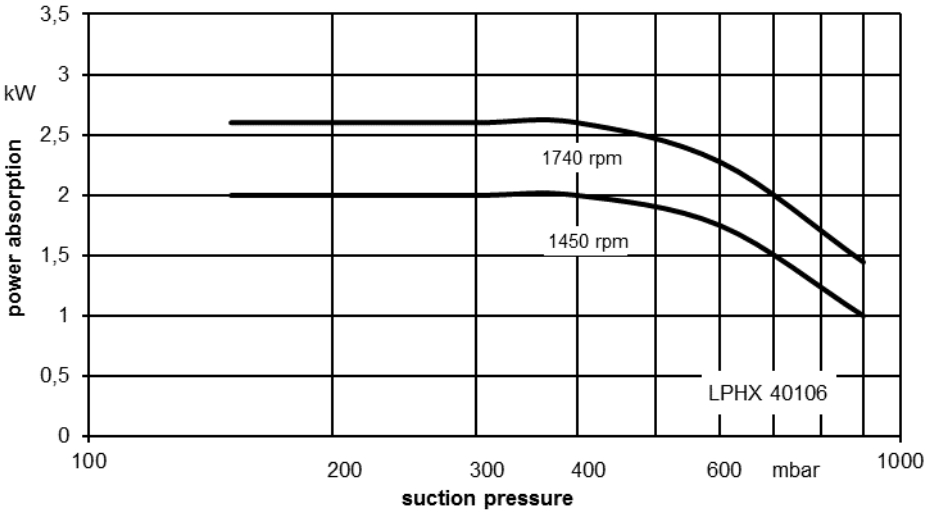
GENERAL TECHNICAL DATA

Pump Type		Units	LPH 40106	LPH 40411	LPH 40516
Speed	50 Hz 60 Hz	rpm rpm	1450 1740		
Maximum overpressure on compression		bar	0.6	0.8	0.4
Permissible pressure difference between suction and discharge side	max. min.	bar	1.2 0.2	1.2 0.2	1.2 0.2
Hydraulic test pressure (overpressure)		bar	3.0		
Moment of inertia of rotating parts of pump and water content		kg · m²	0.0375	0.05	0.065
Noise level at 200 mbar suction pressure [50Hz]		dB (A)	57	61.5	
Minimum permissible pulley diameter for V belt drive		mm	160		
Maximum gas temperature	dry saturated	°C °C	200 100		
Service liquid:					
Maximum permissible temperature		°C	80		
Minimum permissible temperature		°C	10		
Maximum viscosity		mm²/s	90		
Maximum density		kg/m³	1200		
Liquid capacity up to middle of shaft		litre	3.5	4.5	5.5
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.

Performance Characteristics LPHX 40106



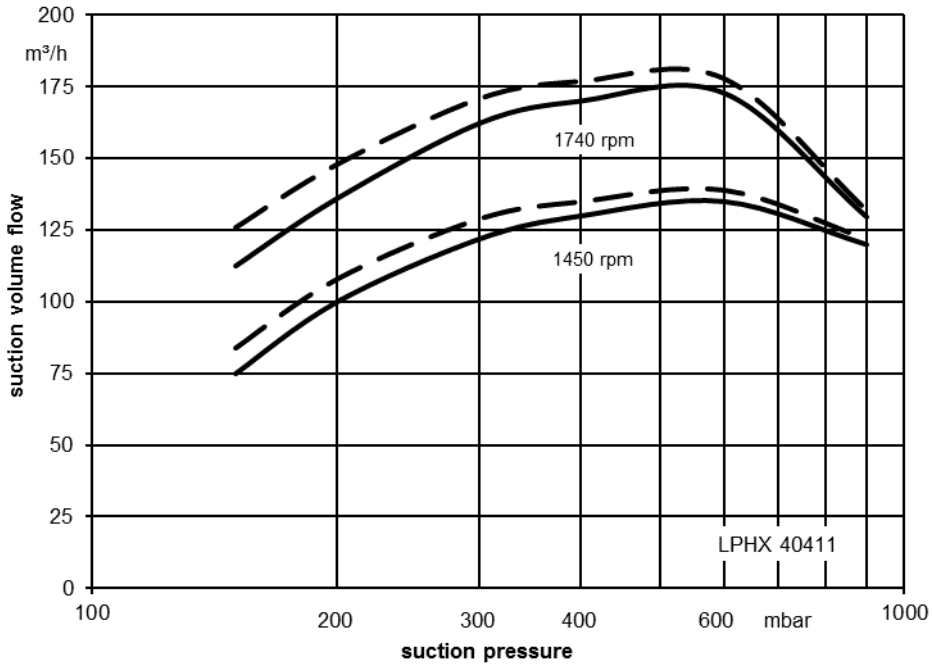


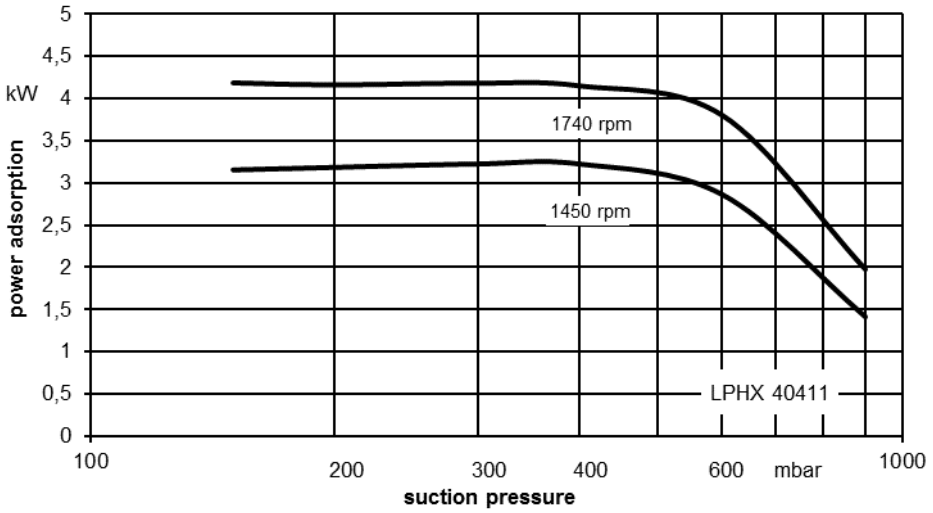
The operating data is valid under the following conditions:

- 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 for the suction volume flow is 10% and for power 5%.
The maximum consumption of make up water occurs at the lowest suction pressure.

Performance Characteristics LPHX 40411



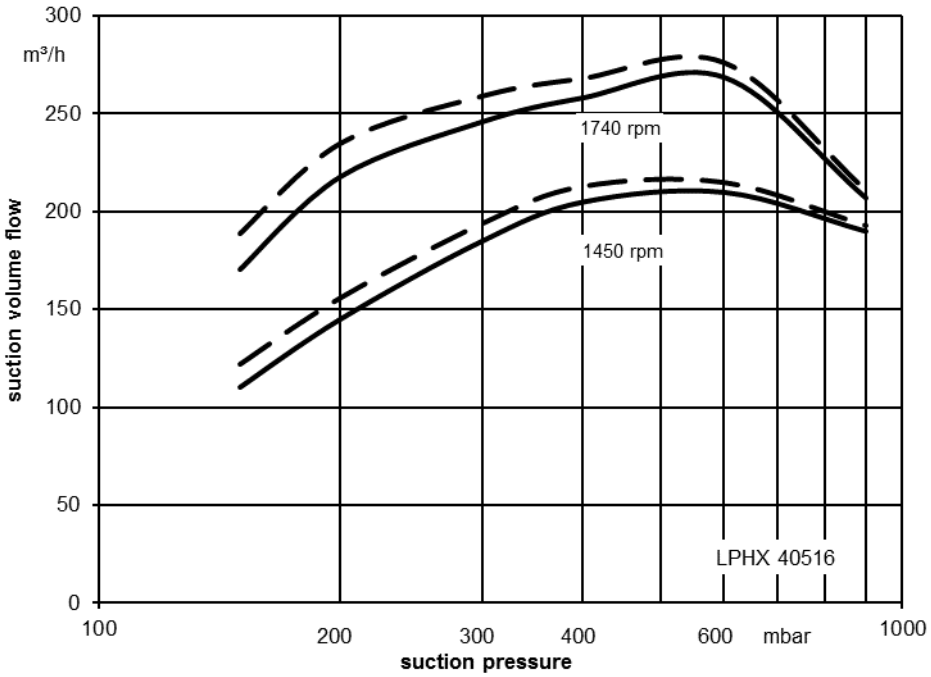


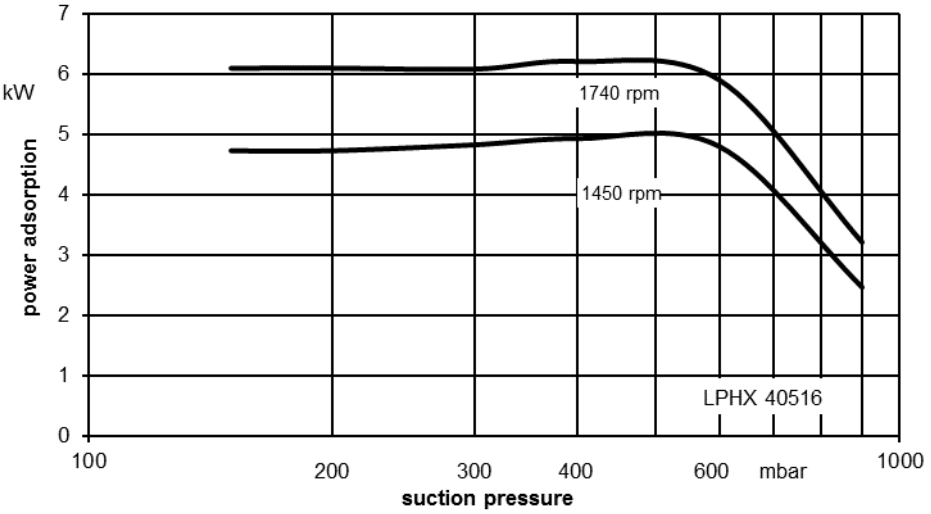
The operating data is valid under the following conditions:

- 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 for the suction volume flow is 10% and for power 5%.
The maximum consumption of make up water occurs at the lowest suction pressure.

Performance Characteristics LPHX 40516





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 for the suction volume flow is 10% and for power 5%.
The maximum consumption of make up water occurs at the lowest suction pressure.

SIHI^{LPH-X} - Liquid Ring Vacuum Pump

One Stage

LPH 50523

FLOWSERVE
SIHI® Pumps

Pressure Range: **120 to 1013 mbar**
Suction Range: **115 to 540 m³/h**

CONSTRUCTION

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

- Near isothermal compression
- Oil free, with no internal lubrication
- Capable of handling almost all gases and vapours
- Able to handle quantities of liquid “carry over”
- Low maintenance and safe operation
- Low noise and almost vibration free
- Available in a wide range of materials
- Broad range of applications
- O-ring sealing as standard
- Drain hole as standard
- Built-in solids drain
- Rotating metallic parts are non contacting to minimise wear
- ATEX compliance

SIHI liquid ring vacuum pumps of the range LPH 50523 are one stage pumps. They can be used as compressors without any modification.

APPLICATIONS

Evacuation and pumping of dry gases and saturated vapours. The pumps can also handle liquids. These units offer pressures in the range of 120…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.

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. The condensed gas and fluid can be separated in a liquid separator (see Accessories Catalogue). 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. More information is provided in the accessory catalogues. The integrated solids drain permits the removal of any entrained solids whilst the pump is operating. The service liquid can, therefore, simply be re-circulated. The rotation of the pump is clockwise when viewed from the drive end.

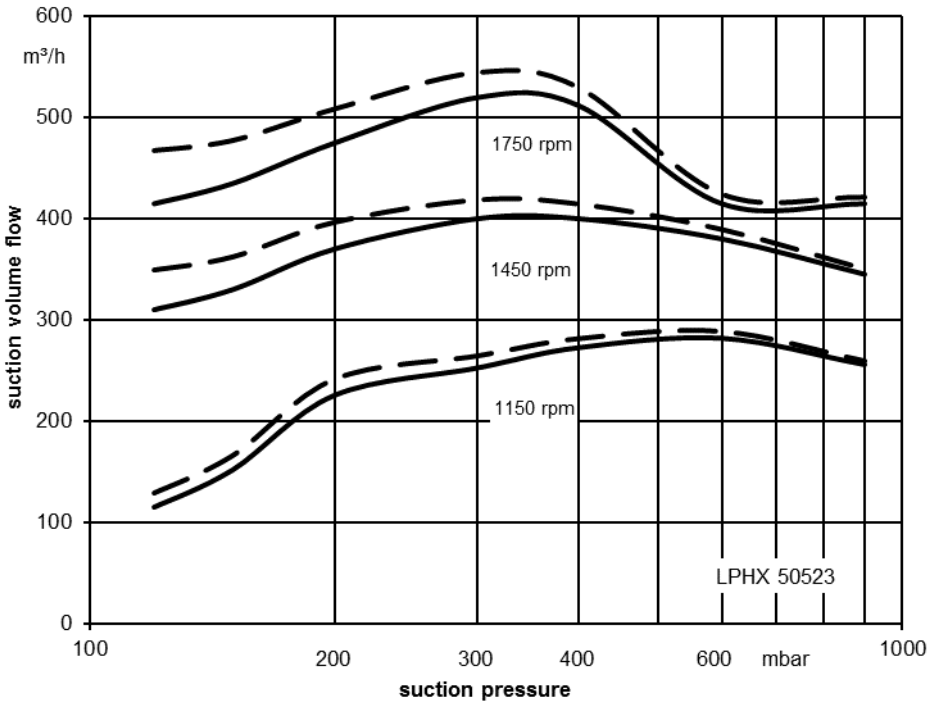
GENERAL TECHNICAL DATA

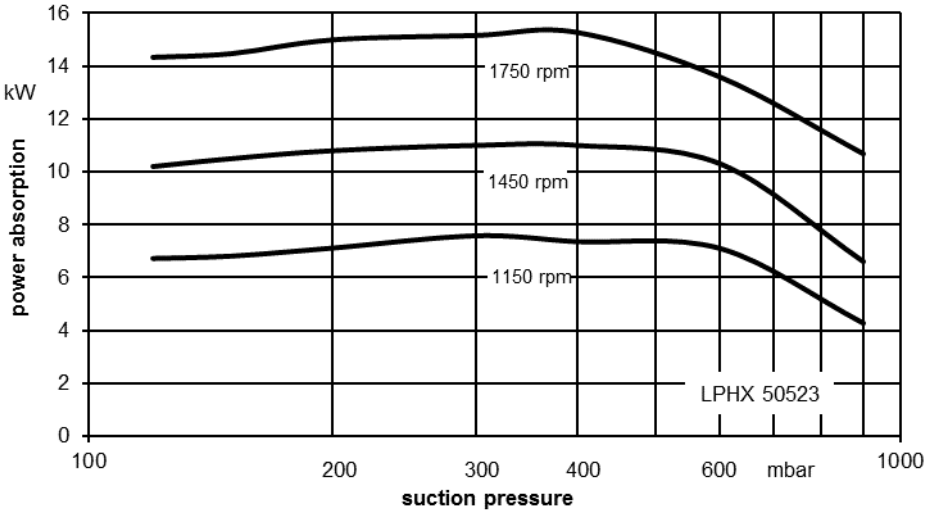
Pump Type	Units	LPH 50523
Speed 50 Hz 60 Hz	rpm	1450 1740
Maximum overpressure on compression	bar	1.5
Permissible pressure difference max. between suction and discharge side min.	bar	1.5 0.2
Hydraulic test pressure (overpressure)	bar	3.0
Moment of inertia of rotating parts of pump and water content	kg · m²	0.25
Noise level at 200 mbar suction pressure [50Hz]	dB (A)	68
Minimum permissible pulley diameter for V belt drive	mm	200 or 250 [1)]
Maximum gas temperature: dry saturated	°C °C	200 100
Service liquid: Maximum permissible temperature Minimum permissible temperature Maximum viscosity Maximum density Liquid capacity up to middle of shaft	 °C °C mm²/s kg/m³ litre	 80 10 90 1200 12.0
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.

[1)] at 60Hz

Performance Characteristics LPHX 50523





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 for the suction volume flow is 10% and for power 5%.
The maximum consumption of make up water occurs at the lowest suction pressure.

SIHI^{LPH-X} - Liquid Ring Vacuum Pump

One Stage

LPH 60527

Pressure Range: **120 to 1013 mbar**
Suction Range: **255 to 800 m³/h**

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

- Near isothermal compression
- Oil free, with no internal lubrication
- Capable of handling almost all gases and vapours
- Able to handle quantities of liquid “carry over”
- Low maintenance and safe operation
- Low noise and almost vibration free
- Available in a wide range of materials
- Broad range of applications
- O-ring sealing as standard
- Drain hole as standard
- Built-in solids drain
- Rotating metallic parts are non contacting to minimise wear
- ATEX compliance

SIHI liquid ring vacuum pumps of the range LPH 60527 are one stage pumps. They can be used as compressors without any modification.

APPLICATIONS
Evacuation and pumping of dry gases and saturated vapours. The pumps can also handle liquids. These units offer pressures in the range of 120…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.

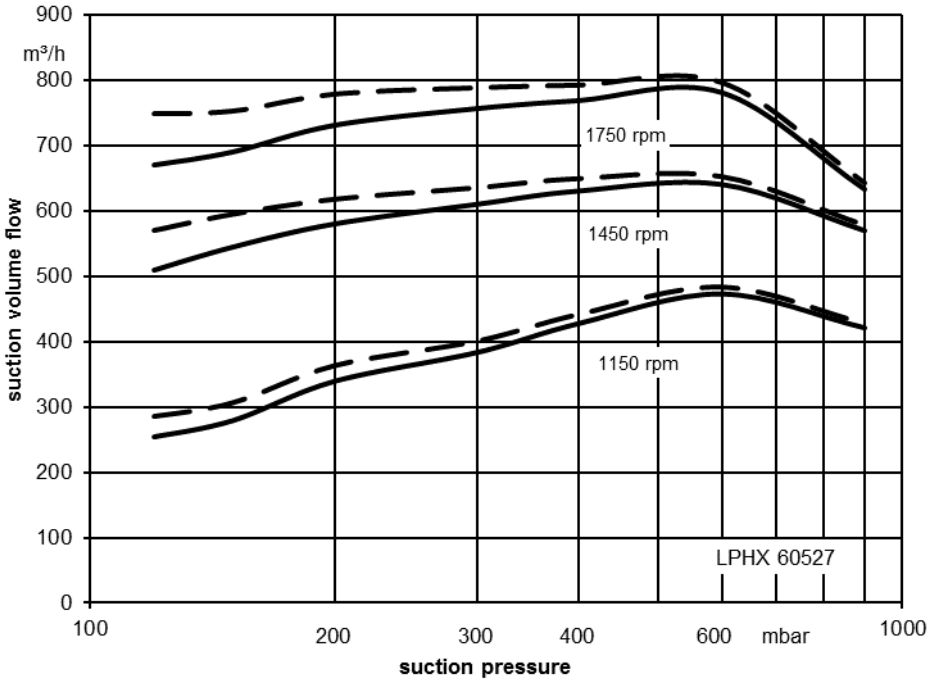
NOTE
By continuously feeding the pump with a small amount of service liquid (usually water), the heat due to gas/vapour compression is conducted away. This also replenishes the liquid ring and ensures that it does not become saturated with process media. The condensed gas and fluid can be separated in a liquid separator (see Accessories Catalogue). 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. More information is provided in the accessory catalogues. The integrated solids drain permits the removal of any entrained solids whilst the pump is operating. The service liquid can, therefore, simply be re-circulated. The rotation of the pump is clockwise when viewed from the drive end.

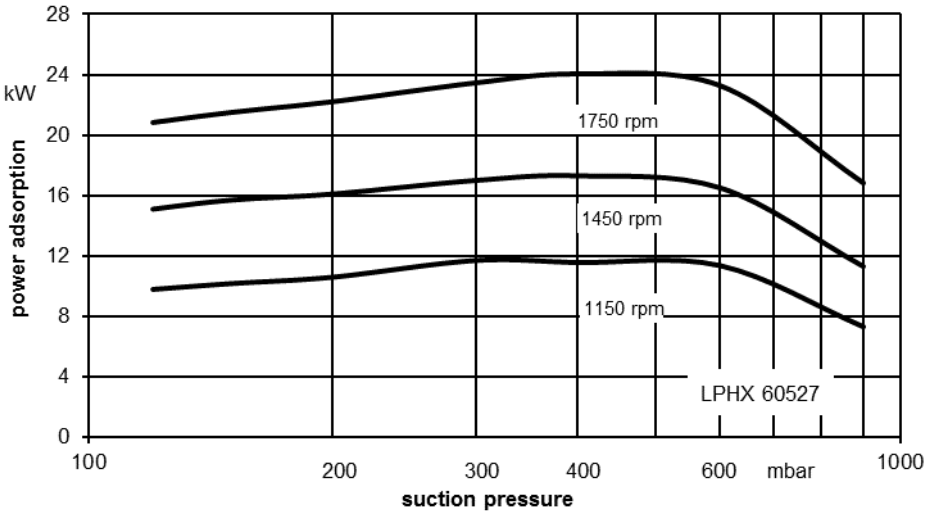
GENERAL TECHNICAL DATA

Pump Type		Units	LPH 60527
Speed	50 Hz 60 Hz	rpm	1450 1740
Maximum overpressure on compression		bar	1.2
Permissible pressure difference between suction and discharge side	max. min.	bar	1.5 0.2
Hydraulic test pressure (overpressure)		bar	3.0
Moment of inertia of rotating parts of pump and water content		kg · m²	0.36
Noise level at 200 mbar suction pressure		dB (A)	68,5
Minimum permissible pulley diameter for V belt drive		mm	200
Max. Gas temperature:	dry saturated	°C °C	200 100
Service liquid: Maximum permissible temperature Minimum permissible temperature Maximum viscosity Maximum density Liquid capacity up to middle of shaft		 °C °C mm²/s kg/m³ litre	 80 10 90 1200 14.0
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.

Performance Characteristics LPHX 60527





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 for the suction volume flow is 10% and for power 5%.
The maximum consumption of make up water occurs at the lowest suction pressure.

SIHI^{LPH-X} - Liquid Ring Vacuum Pump

Two Stage

LPH 45008, LPH 45311, LPH 45316

FLOWSERVE
SIHI® Pumps

Pressure Range: **33 to 1013 mbar**
Suction Volume: **50 to 240 m³/h**

CONSTRUCTION

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

- Near isothermal compression
- Oil free, with no internal lubrication
- Capable of handling almost all gases and vapours
- Able to handle quantities of liquid “carry over”
- Low maintenance and safe operation
- Low noise and almost vibration free
- Available in a wide range of materials
- Broad range of applications
- O-ring sealing as standard
- Cavitation protection as standard
- Drain hole as standard
- Built-in solids drain
- Rotating metallic parts are non contacting to minimise wear
- ATEX compliance

SIHI liquid ring vacuum pumps of the range LPH 45008, LPH 45311 and LPH 45316 are two stage pumps. In addition, the LPH 45008 and LPH 45316 can be used as compressors without any modification.

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. Much lower pressures are available by using ancillaries such as ejectors and lobular boosting pumps. Typical application areas include:

- Chemical and pharmaceutical industry for distillation, drying and degassing
- Food and beverage industry for low temperature cooking, and bottle filling
- Electronic industry for impregnation and drying
- Plastics & Rubber industry for degassing
- Healthcare for sterilisers and general vacuum

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.

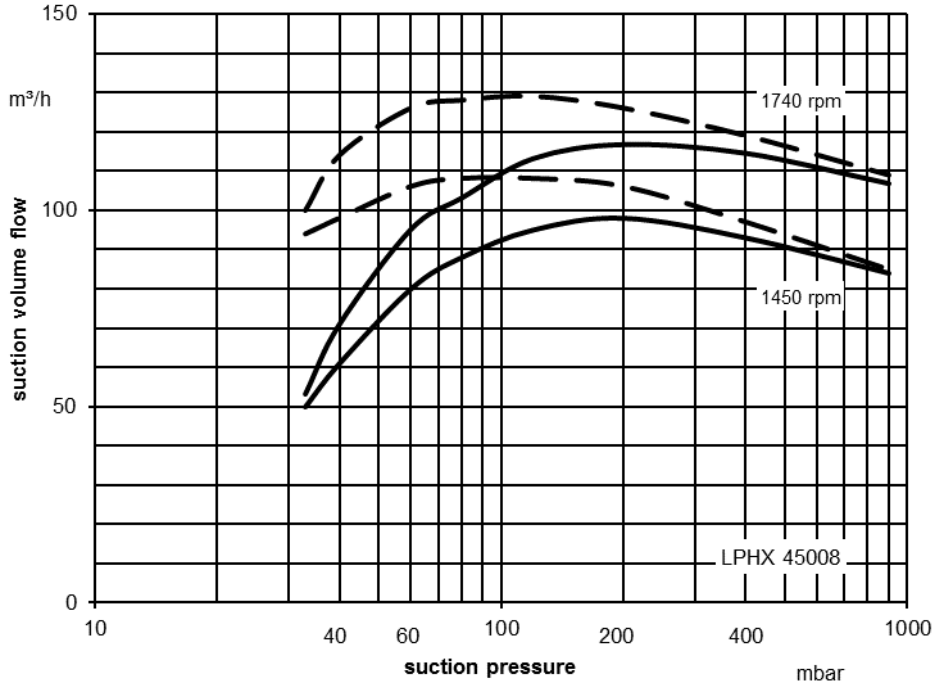
The integrated solids drain permits the removal of any entrained solids whilst the pump is operating. The service liquid can therefore, simply be re-circulated. The rotation of the pump is clockwise when viewed from the drive end.

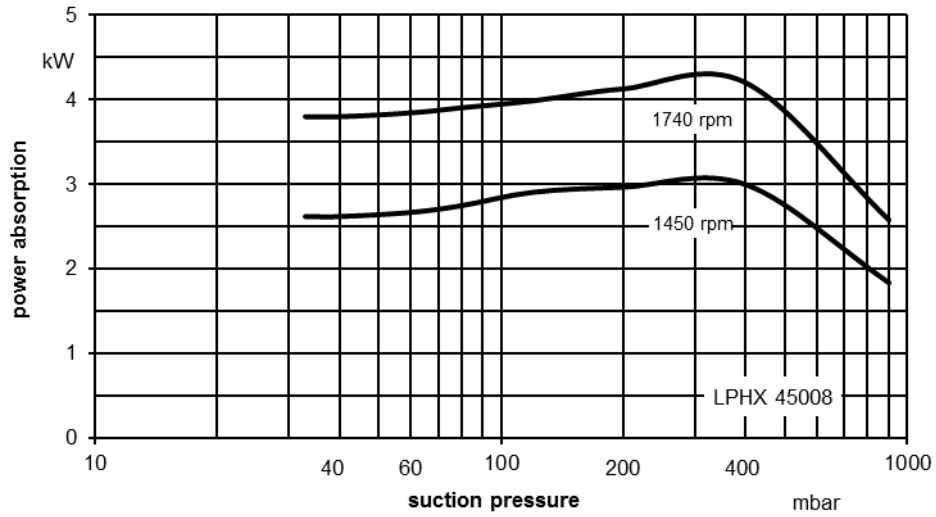
GENERAL TECHNICAL DATA

Pump Type		Units	LPH 45008	LPH 45311	LPH 45316
Speed	50 Hz 60 Hz	rpm rpm		1450 1750	
Maximum overpressure on compression		bar		1.5	
Permissible pressure difference between suction and discharge side	max. min.	bar	1.5 0.2	1.5 0.2	1.5 0.2
Hydraulic test pressure (Overpressure)		bar		3.0	
Moment of inertia of rotating parts of pump and water content		kg · m²	0.05	0.063	0.09
Noise level at 80 mbar suction pressure [50Hz]		dB (A)		60	
Minimum permissible pulley diameter for V belt drive		mm		160	
Max. gas temperature:	dry saturated	°C °C		200 100	
Service liquid: Maximum permissible temperature Minimum permissible temperature Maximum viscosity Maximum density Liquid capacity up to middle of shaft		 °C °C mm²/s kg/m³ litre	 4.0	 80 10 90 1200 5.5	 7.0
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.

Performance Characteristics LPHX 45008



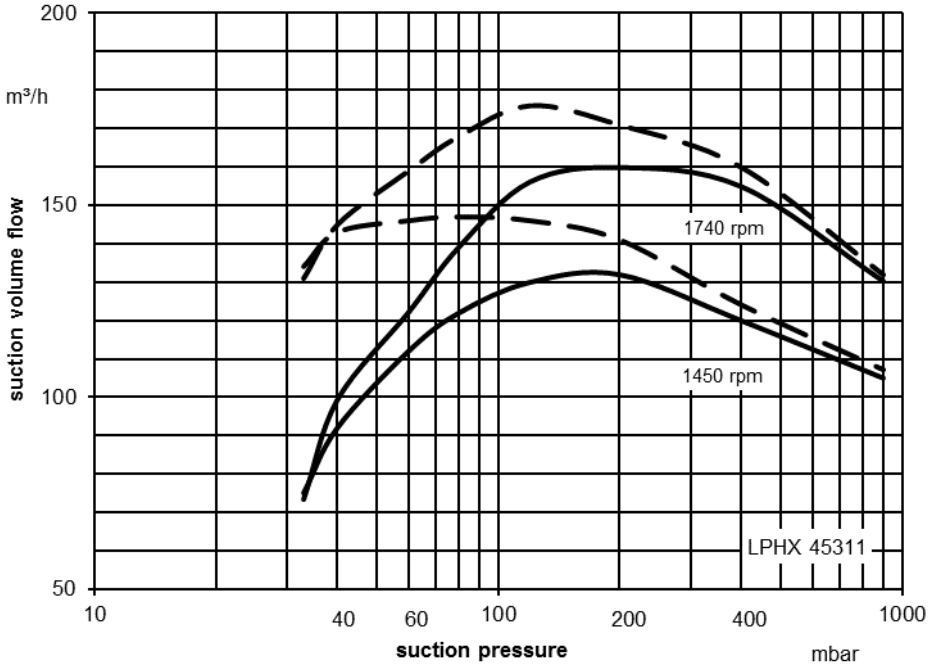


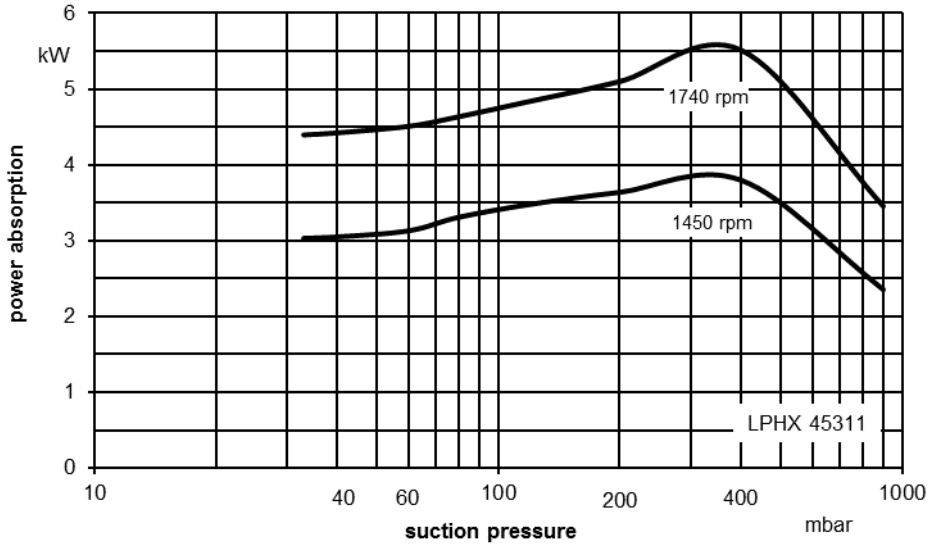
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LPHX 45311



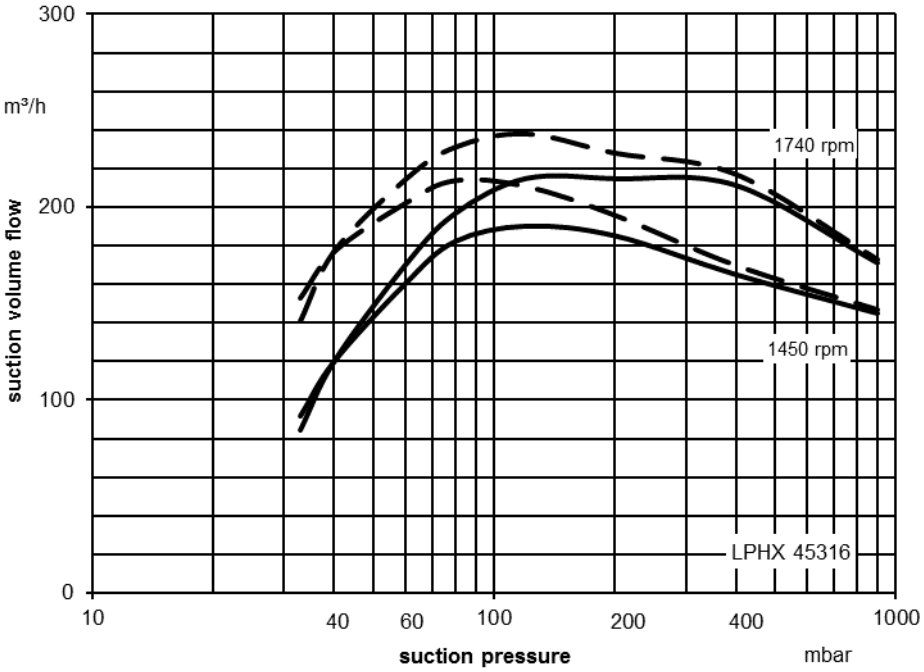


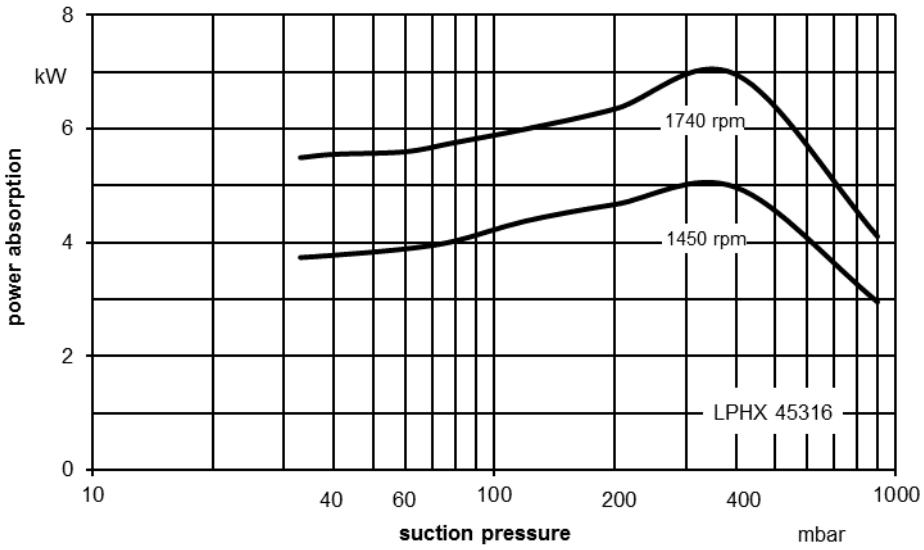
The operating data is valid under the following conditions:

- 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%.
Maximum consumption of make up water occurs at the lowest suction pressure.

Performance Characteristics LPHX 45316





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%.
Maximum consumption of make up water occurs at the lowest suction pressure.

SIHI^{LPH-X} - Liquid Ring Vacuum Pump

Two Stage

LPH 55312, LPH 55316, LPH 55320

Pressure Range: **33 to 1013 mbar**
Suction Volume: **130 to 560 m³/h**

CONSTRUCTION

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

- Near isothermal compression
- Oil free, with no internal lubrication
- Capable of handling almost all gases and vapours
- Able to handle quantities of liquid “carry over”
- Low maintenance and safe operation
- Low noise and almost vibration free
- Available in a wide range of materials
- Broad range of applications
- O-ring sealing as standard
- Cavitation protection as standard
- Drain hole as standard
- Built-in solids drain
- Rotating metallic parts are non contacting to minimise wear
- ATEX compliance

SIHI liquid ring vacuum pumps of the range LPH 55312, LPH 55316 and LPH 55320 are two stage pumps.

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. Much lower pressures are available by using ancillaries such as ejectors and lobular boosting pumps. Typical application areas include:

- Chemical and pharmaceutical industry for distillation, drying and degassing
- Food and beverage industry for low temperature cooking, and bottle filling
- Electronic industry for impregnation and drying
- Plastics & Rubber industry for degassing
- Healthcare for sterilisers and general vacuum

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 integrated solids drain permits the removal of any entrained solids whilst the pump is operating. The service liquid can therefore, simply be re-circulated. The rotation of the pump is clockwise when viewed from the drive end.

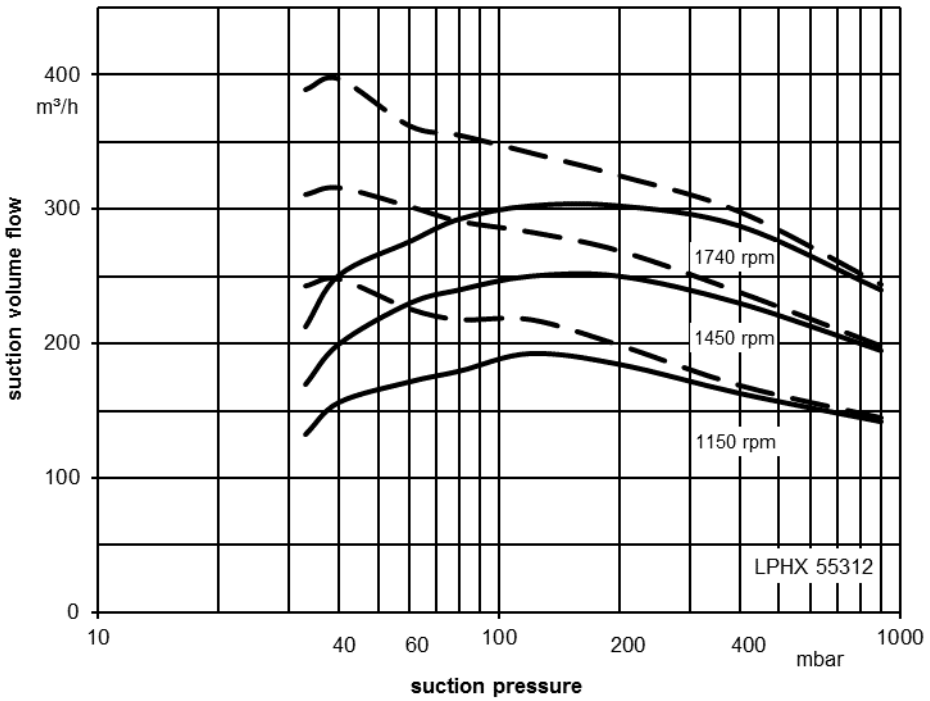
GENERAL TECHNICAL DATA

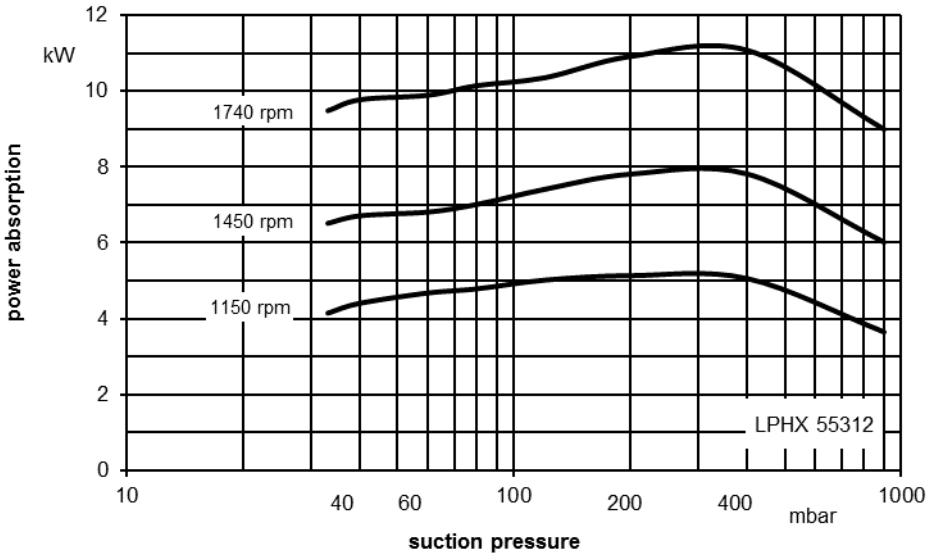
Pump Type	Units	LPH 55312	LPH 55316	LPH 55320
Speed 50 Hz 60 Hz	rpm		1450 1740	
Maximum overpressure on compression	bar		1.8	
Permissible pressure difference max. between suction and discharge side min.	bar		2.0 0.2	
Hydraulic test pressure (overpressure)	bar		3.0	
Moment of inertia of rotating parts of pump and water content	kg · m²	0.137	0.162	0.205
Noise level at 80 mbar suction pressure [50Hz]	dB (A)	66	67	68
Minimum permissible pulley diameter for V belt drive	mm	200	200	not allowed
Maximum gas temperature: dry saturated	°C °C		200 100	
Service liquid:				
Maximum permissible temperature	°C		80	
Minimum permissible temperature	°C		10	
Maximum viscosity	mm²/s		90	
Maximum density	kg/m³		1200	
Liquid capacity up to middle of shaft	litre	9.0	10.0	12.0
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.

SIHI*LPH-X*

Performance Characteristics LPHX 55312



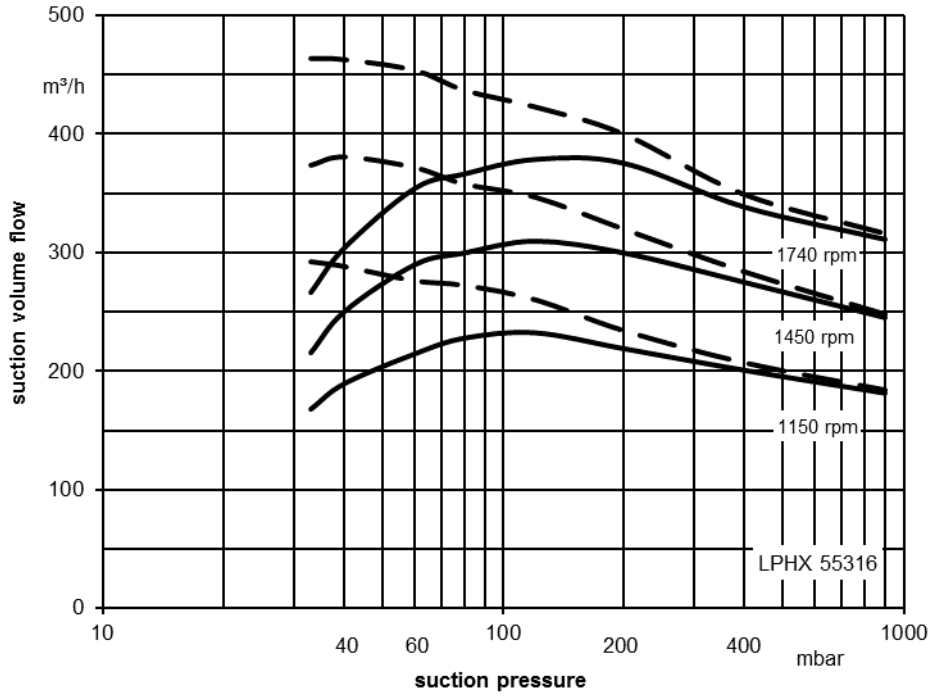


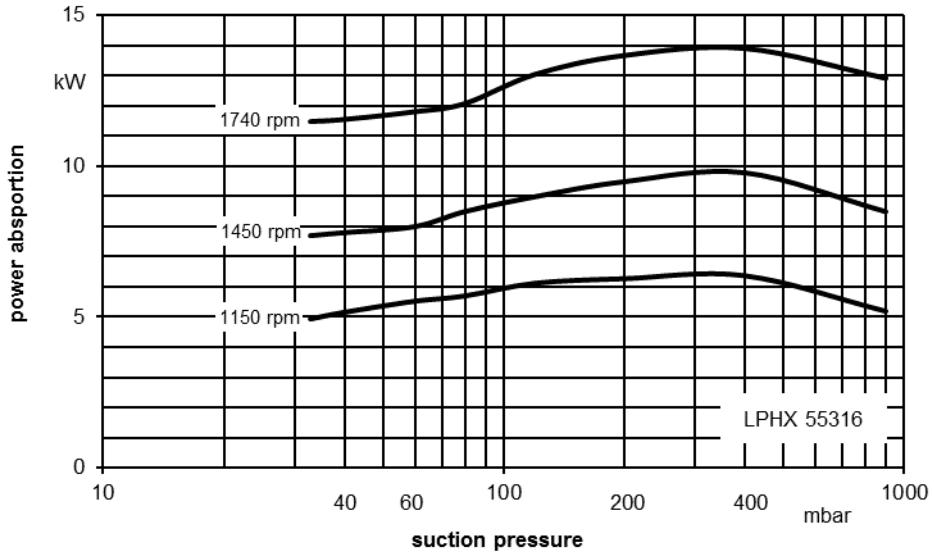
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LPHX 55316





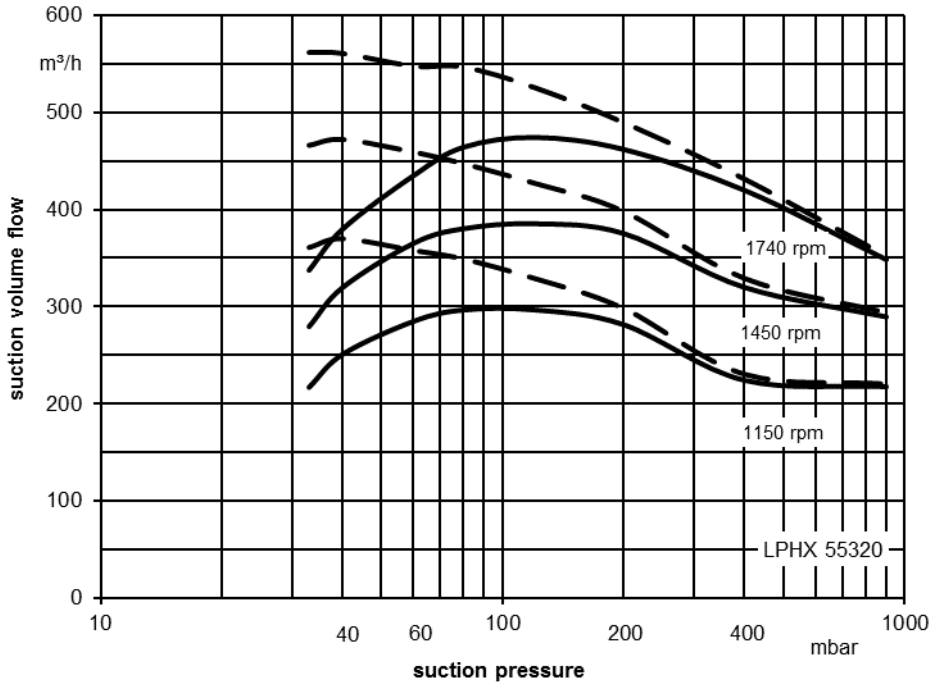
The operating data is valid under the following conditions:

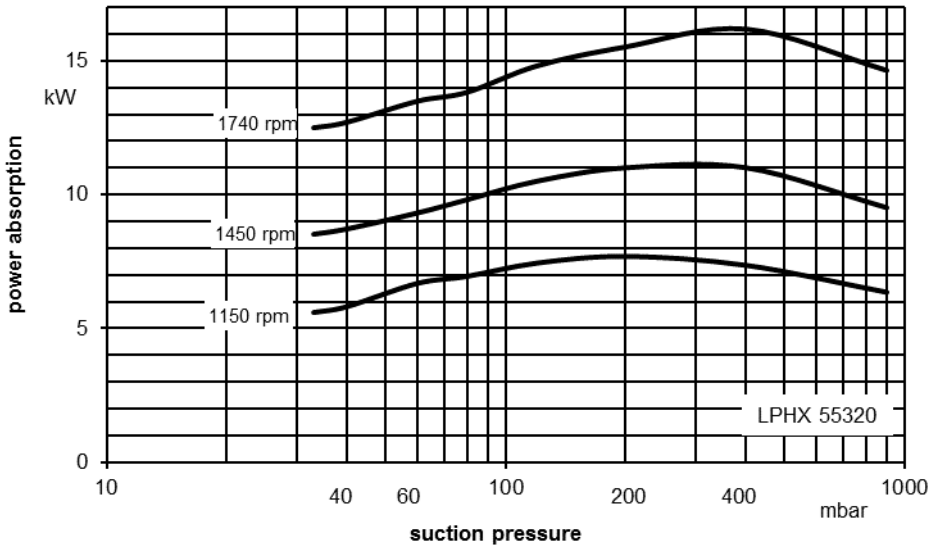
- Process media: - dry air: 20°C ——————
  - steam saturated air: 20°C — — — — — —
- Service liquid: - water: 15°C

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%.
Maximum consumption of make up water occurs at the lowest suction pressure.

SIHI*LPH-X*

Performance Characteristics LPHX 55320





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%.
Maximum consumption of make-up water occurs at the lowest suction pressure.

SIHI^{LPH-X} - Liquid Ring Vacuum Pump

Two Stage

LPH 65320, LPH 65327

Pressure Range: **33 to 1013 mbar**
Suction Volume: **245 to 815 m³/h**

CONSTRUCTION

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

- Near isothermal compression
- Oil free, with no internal lubrication
- Capable of handling almost all gases and vapours
- Able to handle quantities of liquid “carry over”
- Low maintenance and safe operation
- Low noise and almost vibration free
- Available in a wide range of materials
- Broad range of applications
- O-ring sealing as standard
- Cavitation protection as standard
- Drain hole as standard
- Built-in solids drain
- Rotating metallic parts are non contacting to minimise wear
- ATEX compliance

SIHI liquid ring vacuum pumps of the range LPH 65320 and LPH 65327 are two stage pumps.

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. Much lower pressures are available by using ancillaries such as ejectors and lobular boosting pumps. Typical application areas include:

- Chemical and pharmaceutical industry for distillation, drying and degassing
- Food and beverage industry for low temperature cooking, and bottle filling
- Electronic industry for impregnation and drying
- Plastics & Rubber industry for degassing
- Healthcare for sterilisers and general vacuum

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 integrated solids drain permits the removal of any entrained solids whilst the pump is operating. The service liquid can therefore, simply be re-circulated.
The rotation of the pump is clockwise when viewed from the drive end.

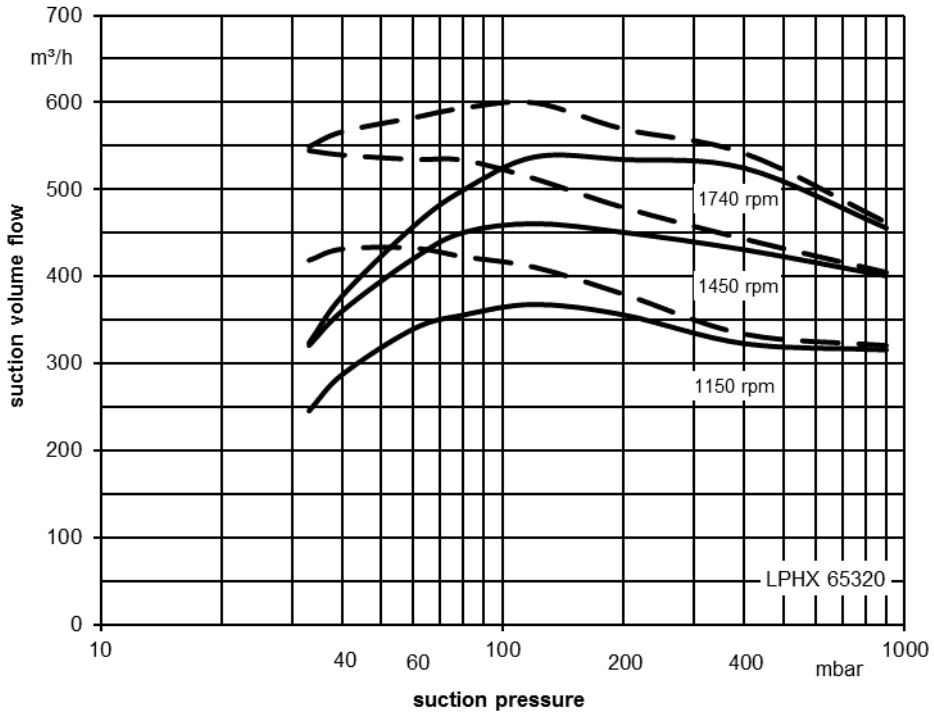
GENERAL TECHNICAL DATA

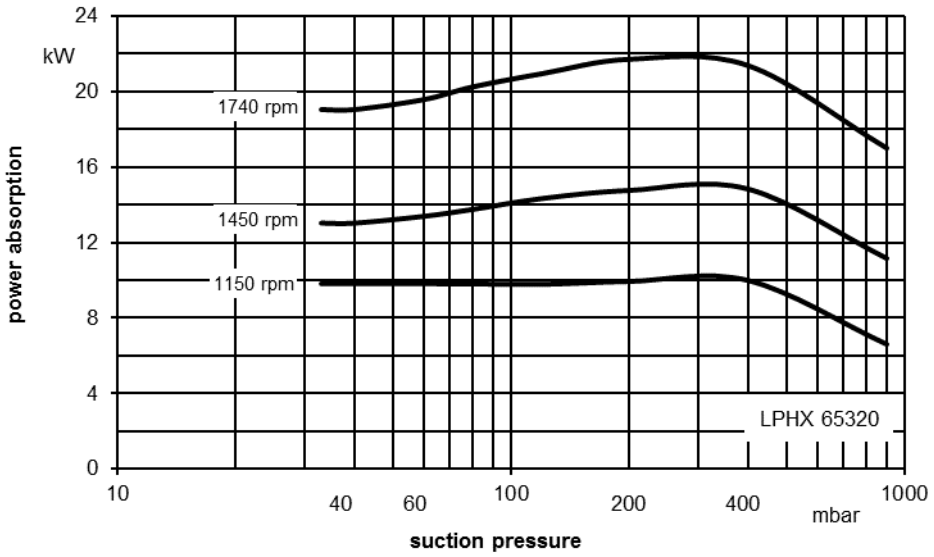
Pump Type	Units	LPH 65320	LPH 65327
Speed 50 Hz 60 Hz	rpm	1450 1740	
Maximum overpressure on compression	bar	1.0	0.8
Permissible pressure difference max. between suction and discharge side min.	bar	1.5 0.2	1.0 0.2
Hydraulic test pressure (overpressure)	bar	3.0	
Moment of inertia of rotating parts of pump and water content	kg · m²	0.32	0.38
Noise level at 80 mbar suction pressure [50Hz]	dB (A)	68	72
Minimum permissible pulley diameter for V belt drive	mm	160	
Maximum gas temperature: dry saturated	°C °C	200 100	
Service liquid: Maximum permissible temperature Minimum permissible temperature Maximum viscosity Maximum density Liquid capacity up to middle of shaft	 °C °C mm²/s kg/m³ litre	 80 10 90 1200 16.0	 19.0
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.

SIHI*LPH-X*

Performance Characteristics LPHX 65320



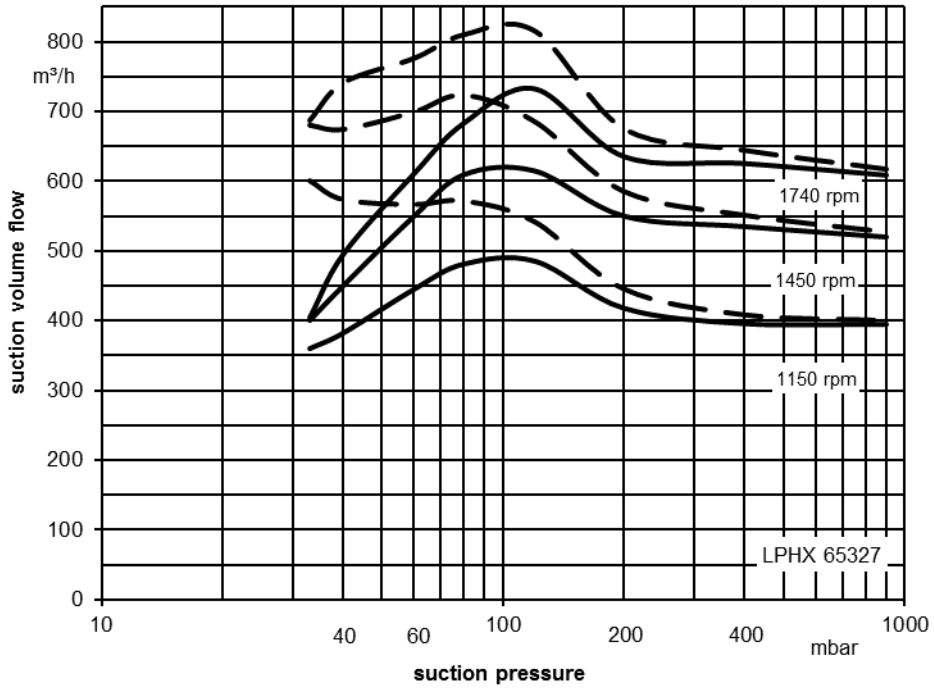


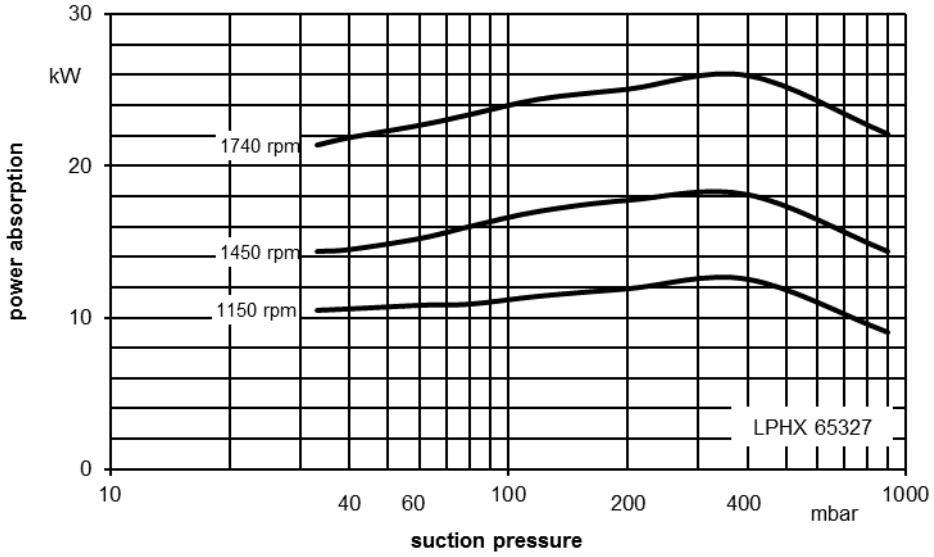
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LPHX 65327





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%.
Maximum consumption of make-up water occurs at the lowest suction pressure.

Liquid ring vacuum pumps
single-stage

LPH 70123, LPH 70530, LPH 70540

FLOWSERVE
SIHI® Pumps

Pressure range: **120 to 1013 mbar**
Suction volume flow: **500 to 1900 m³/h**

CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- handling of nearly all gases and vapours
- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibrations
- wide choice of material, therefore applicable nearly everywhere
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pumps LPH 70123, LPH 70530 and LPH 70540 are single-stage ones. They can be applied without modification as compressors up to a compression pressure of 1,5 bar (see catalogue part K).

APPLICATION

Handling and exhausting of dry and humid gases, entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 120...900 mbar must be created by robust vacuum pumps.
Fields of application are for example

- chemistry and pharmacy for distilling and degassing
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

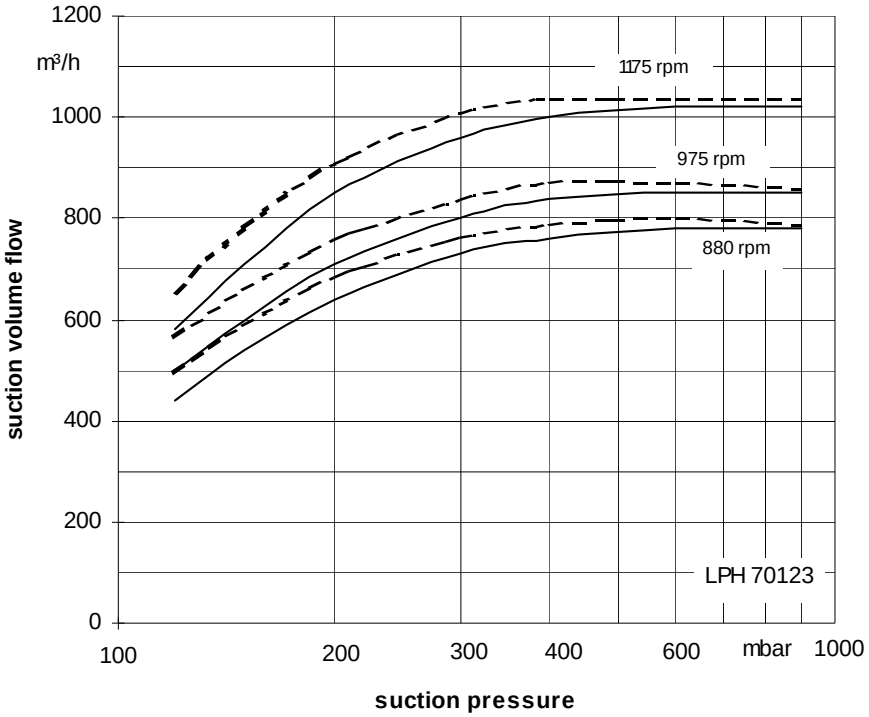
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compressor and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.
The direction of rotation is clockwise, when looking from the drive on the pump.

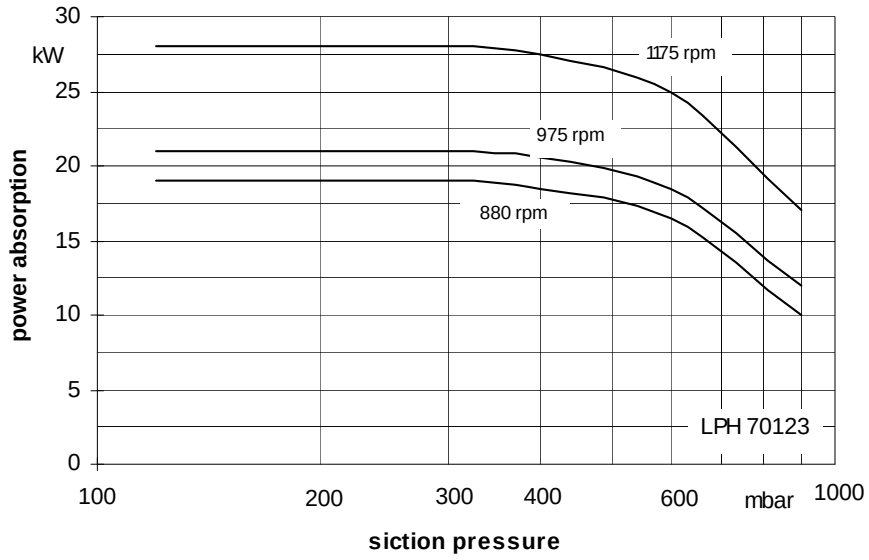
GENERAL TECHNICAL DATA

Pump type		unit	LPH 70123			LPH 70530			LPH 70540		
Speed		rpm	880	975[1)]	1175	880	975[1)]	1175	880	975[1)]	1175
Max. compression over pressure		bar					1,5				
Max. admissible pressure difference		bar	1,8	1,8	1,4[2)] 1,8	1,8	1,7	1,4[2)] 1,6	1,7	1,6	1,4[2)] 1,5
Hydraulic test (over pressure)		bar					3				
Moment of inertial of the rotating pump parts and the water filling		kg · m²		1,36			1,76			2,26	
Sound pressure level at a suction pressure of 200 mbar		dB (A)	76	77	78	78	79	80	78	79	80
Min. pulley diameter admissible in case of V-belt drive		mm	315	315	355		355			400	
Max. gas temperature	dry	°C					200				
	saturated	°C					100				
Service liquid											
max. admissible temperature		°C					100				
max. viscosity		mm²/s					90				
max. density		kg/m³					1200				
volume up to shaft level		liter		32			35			38	
Max. flow resistance of the heat exchanger		bar					0,2				

The combination of several limiting values is not admissible.
[1)] normal speed [2)] with V-belt drive

Suction volume flow and power absorption LPH 70123



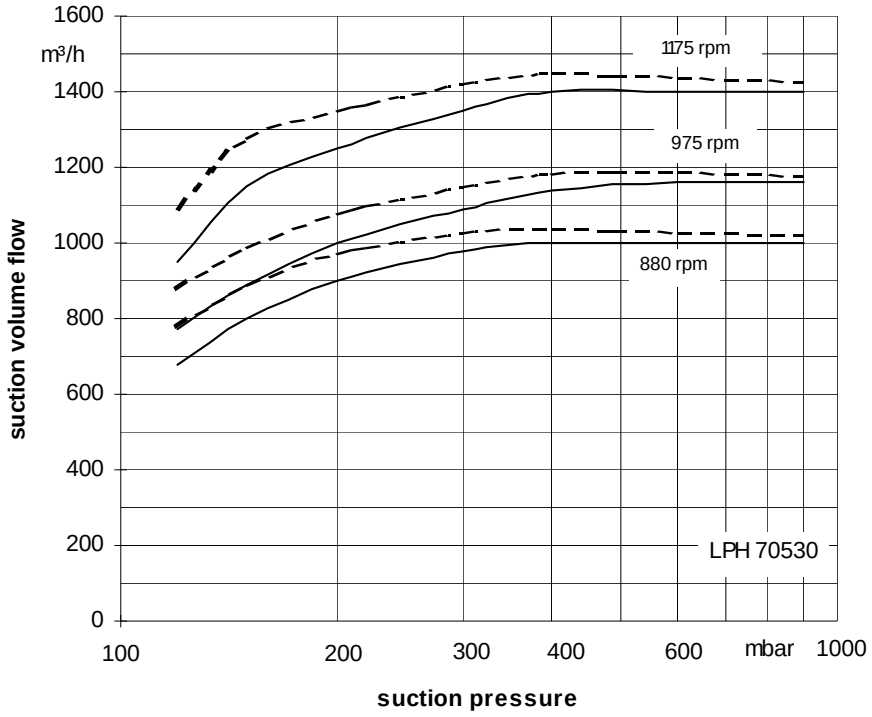


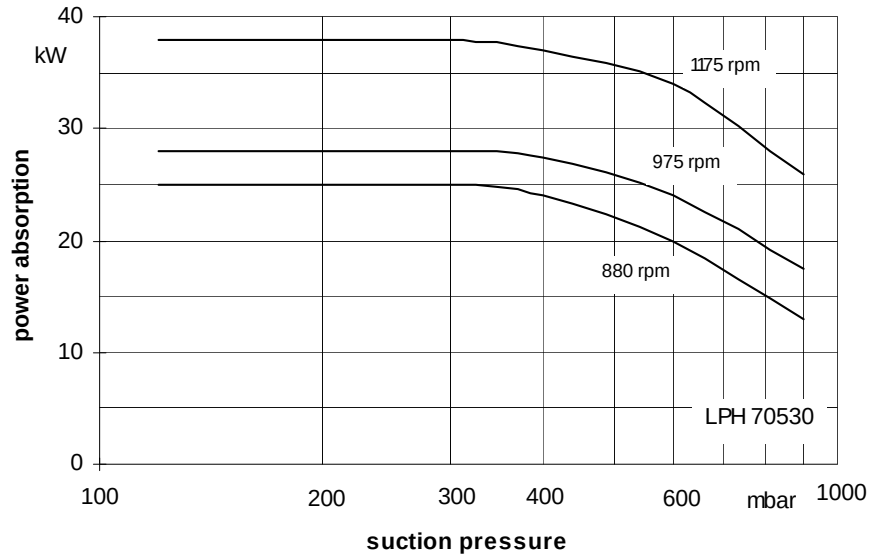
The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C
  - water vapour saturated air: 20°C
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure.

Suction volume flow and power absorption LPH 70530



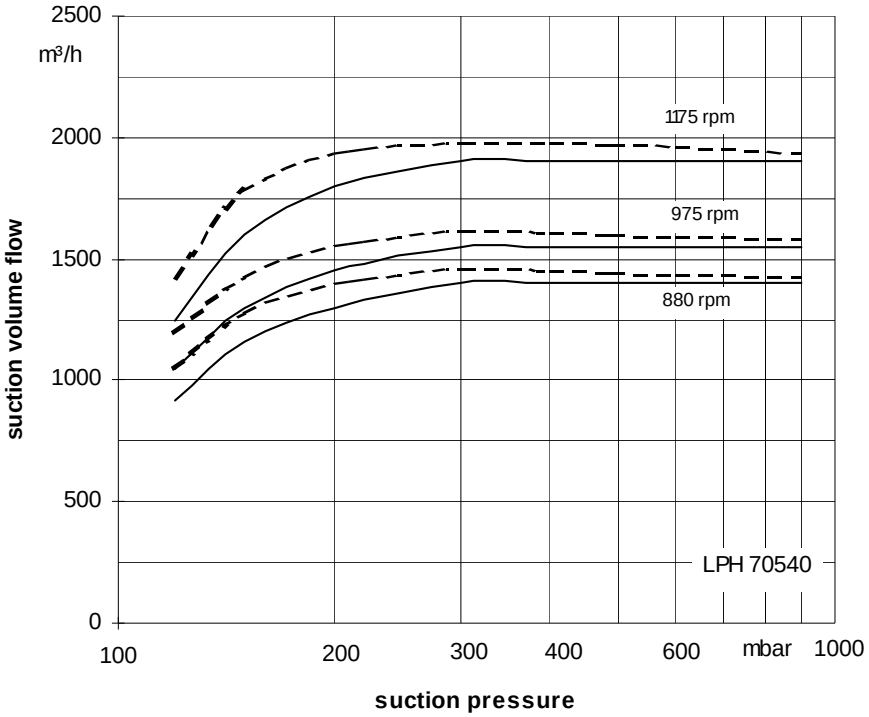


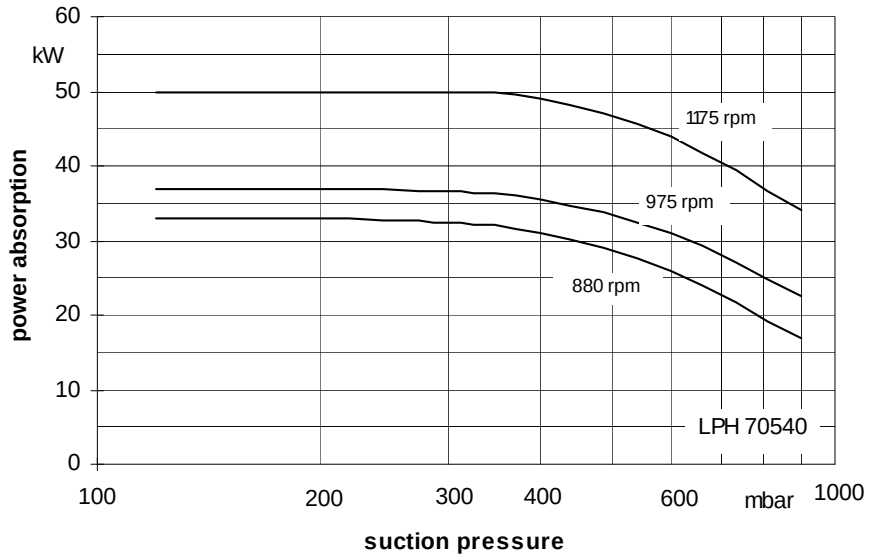
The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C ——————
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure.

Suction volume flow and power absorption LPH 70540





The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C ——————
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

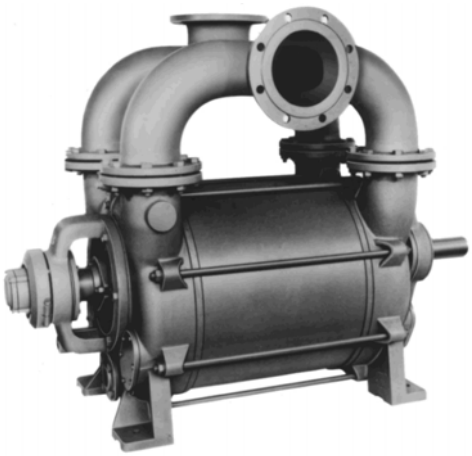
Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure.

Liquid ring vacuum pumps
single-stage

LPH 80540, LPH 80553

FLOWSERVE
SIHI® Pumps

Suction range: **120 to 1013 mbar**
Suction volume flow: **1500 to 3300 m³/h**



CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- Handling of nearly all gases and vapours
- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pumps LPH 80540 and LPH 80553 are single-stage ones. They can be applied with small modification as compressors up to a compression pressure of 1,5 bar (see catalogue part K).

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 120...900 mbar must be created by robust vacuum pumps.
Fields of application are for example

- chemistry and pharmacy for distilling and degassing
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

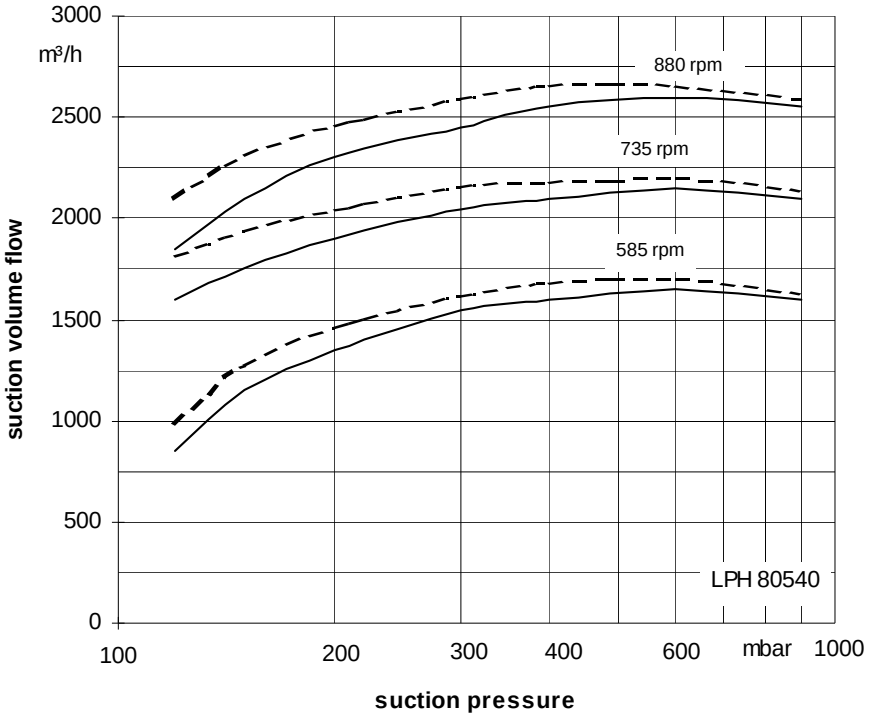
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.
The direction of rotation is clockwise, when looking from the drive on the pump.

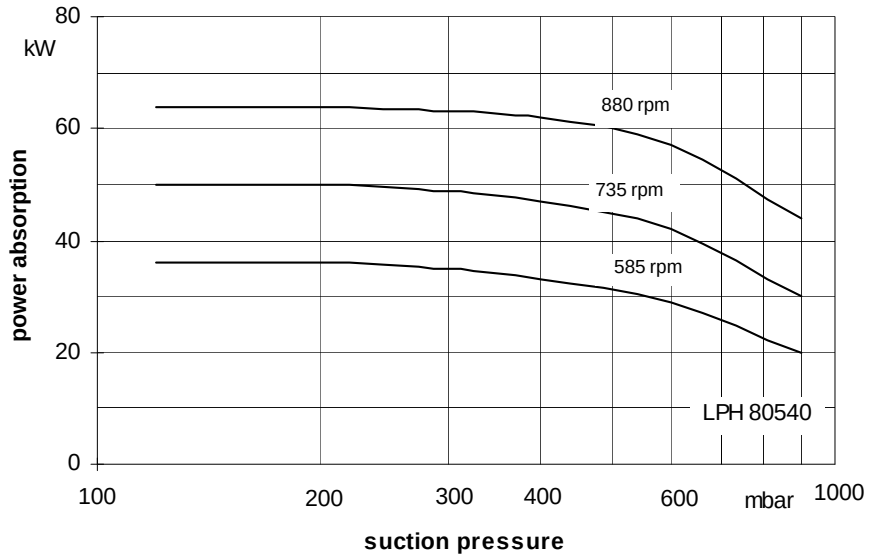
GENERAL TECHNICAL DATA

Pump type	unit	LPH 80540			LPH 80553		
Speed	1/min	585	735[1]	880	585	735[1]	880
Max. compression over pressure	bar	1,5					
Max. admissible pressure difference	bar	1,5	1,5	1,2[2] 1,5	1,5	1,5	1,2[2] 1,5
Hydraulic test (over pressure)	bar	3					
Moment of inertial of the rotating pump parts and the water filling	kg · m²	7,5			10,5		
Sound pressure level at a suction pressure of 200 mbar	dB (A)	83	83	85	83	83	85
Min. pulley diameter admissible in case of V-belt drive	mm	315	315	400	500	500	560
Max. gas temperature dry	°C	160					
saturated	°C	80					
Service liquid							
max. admissible temperature	°C	60					
max. viscosity	mm²/s	90					
max. density	kg/m³	1200					
volume up to shaft level	liter	50			65		
Max. flow resistance of the heat exchanger	bar	0,2					

The combination of several limiting values is not admissible.
[1] normal speed [2] with V-belt drive

Suction volume flow and power absorption LPH 80540



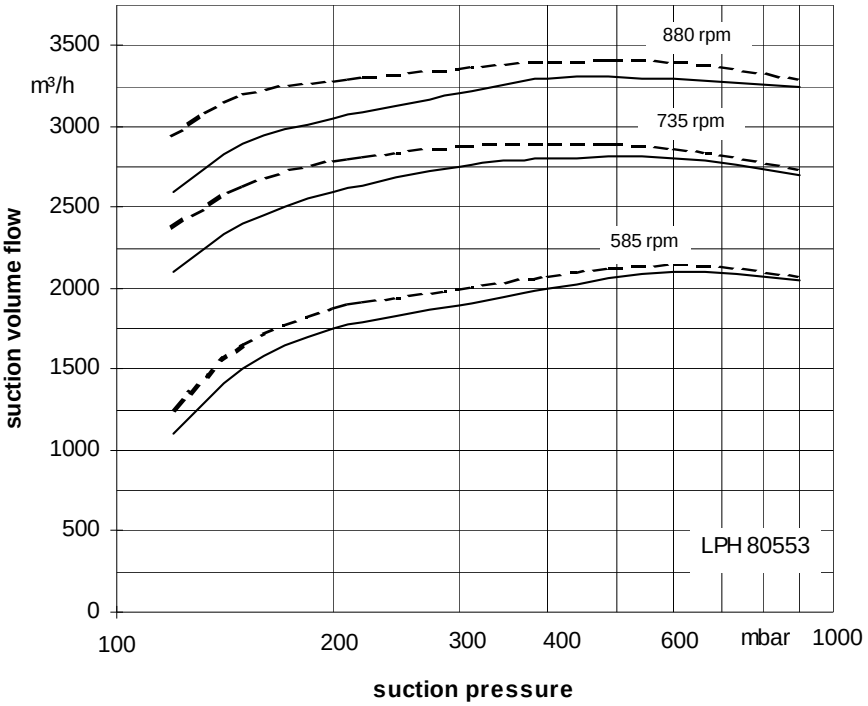


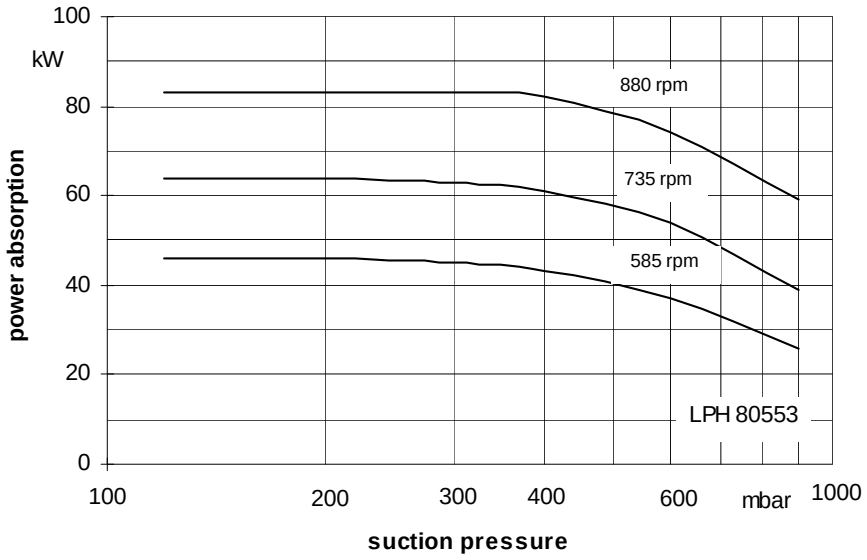
The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C _____
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure

Suction volume flow and power absorption LPH 80553





The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C _____
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure

Liquid ring vacuum pumps
single-stage

LPH 90554, LPH 90567

Pressure range: **120 to 1013 mbar**
Suction volume flow: **1700 to 5050 m³/h**

CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- Handling of nearly all gases and vapours
- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pumps LPH 90554 and LPH 90567 are single-stage ones. They can be applied with small modification as compressors up to a compression pressure of 1,5 bar (see catalogue part K).

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 120...900 mbar must be created by robust vacuum pumps.
Fields of application are for example

- chemistry and pharmacy for distilling and degassing
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

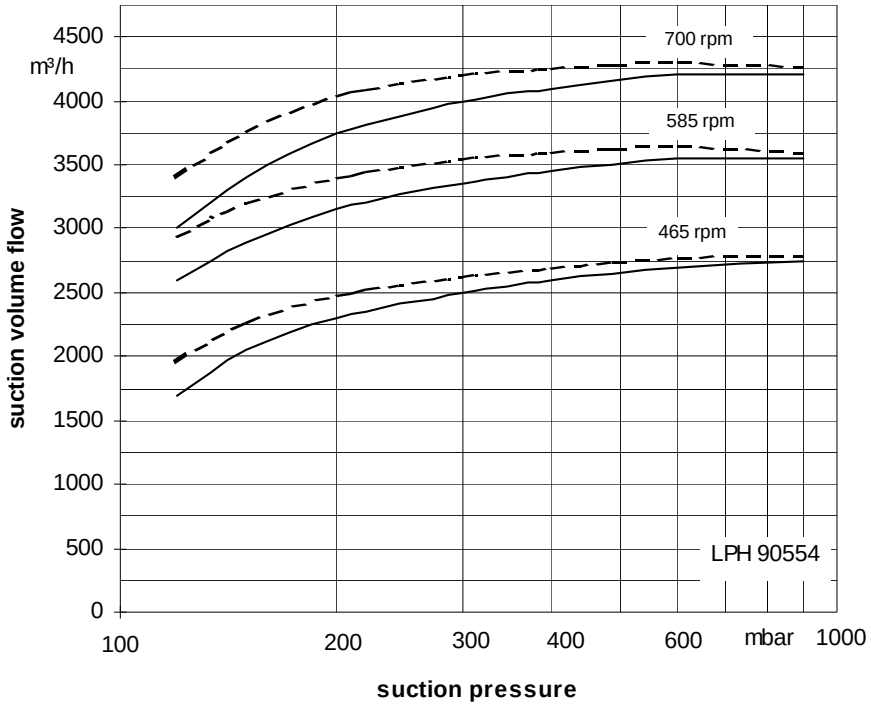
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.
The direction of rotation is clockwise, when looking from the drive on the pump.

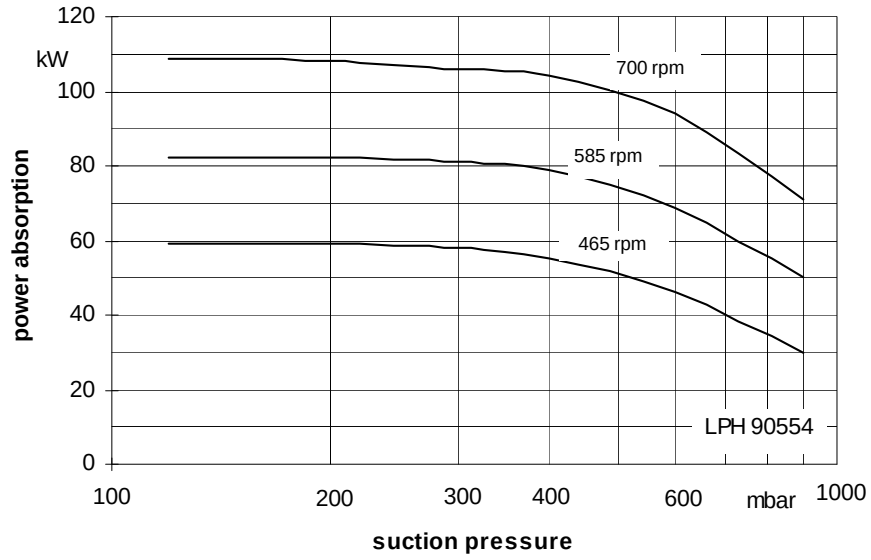
GENERAL TECHNICAL DATA

Pump type	unit	LPH 90554			LPH 90567		
Speed [1]	rpm	465	585	700	465	585	700
Max. compression over pressure	bar	1,5					
Max. admissible pressure diference	bar	1,5					
Hydraulic test (over pressure)	bar	3					
Moment of inertial of the rotating pump parts and the water filling	kg · m²	23,5			28		
Sound pressure level at a suction pressure of 200 mbar	dB (A)	83	83	84	83	83	84
Min. pulley diameter admissible in case of V-belt drive	mm	710					
Max. gas temperature dry	°C	160					
saturated	°C	80					
Service liquid							
max. admissible temperature	°C	60					
max. viscosity	mm²/s	90					
max. density	kg/m³	1200					
volume up to shaft level	liter	160			185		
Max. flow resistance of the heat exchanger	bar	0,2					

The combination of several limiting values is not admissible.
[1] Other speeds are possible, change of the gear ratio resp. V-belt drive

Suction volume flow and power absorption LPH 90554



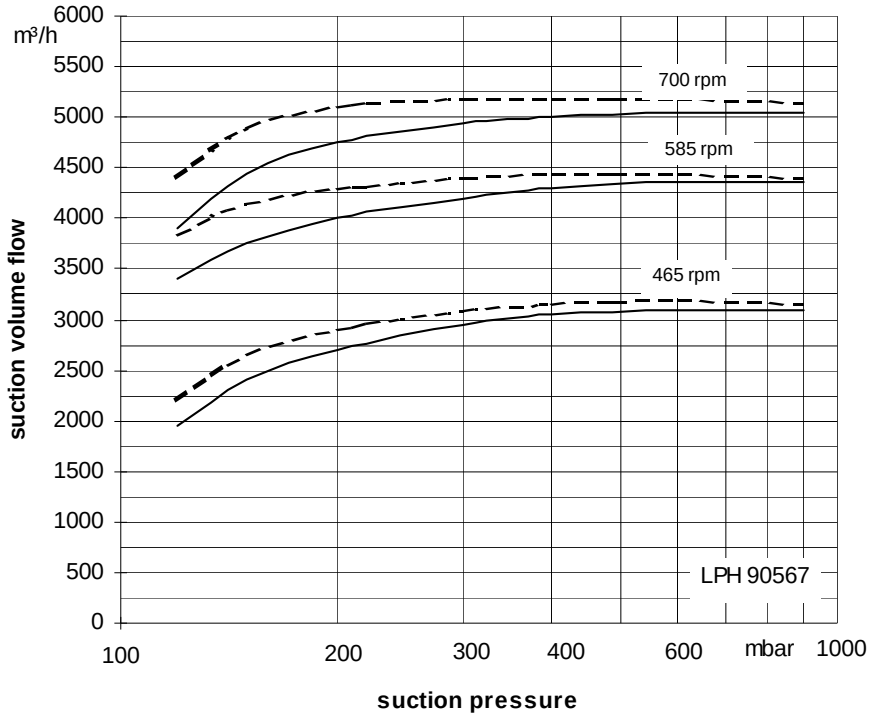


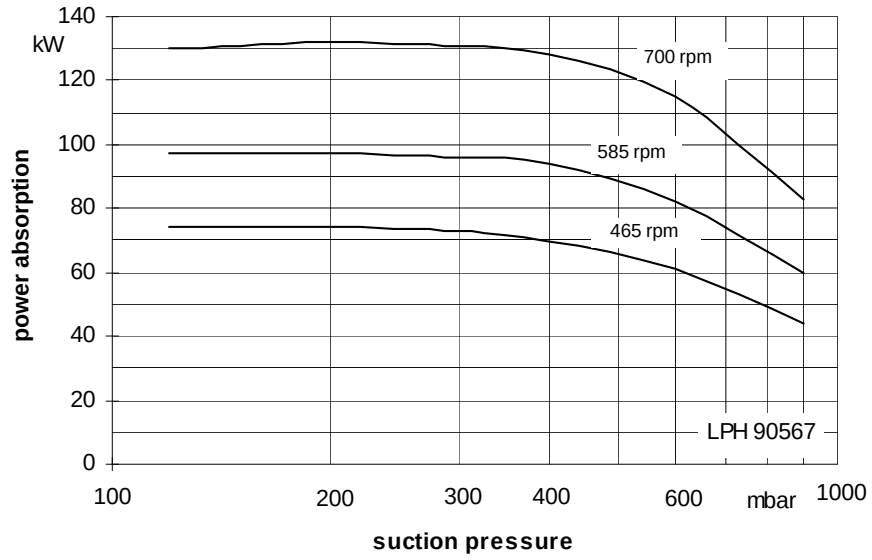
The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C
  - water vapour saturated air: 20°C
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure

Suction volume flow and power absorption LPH 90567





The operating data are applicable under the following conditions:

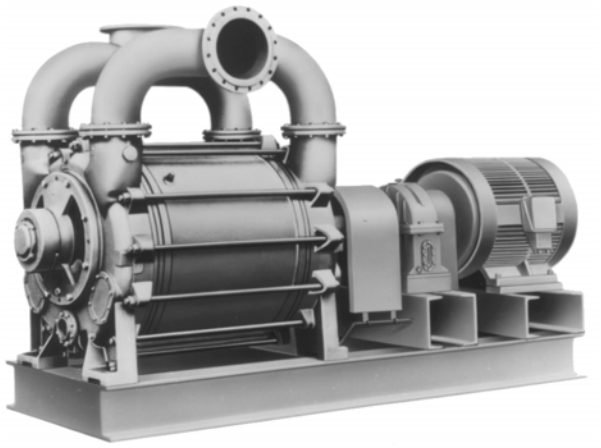
- pumping medium: - dry air: 20°C
  - water vapour saturated air: 20°C
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure

Liquid ring vacuum pumps
single-stage

LPH 10054

Pressure range: **120 to 1013 mbar**
Suction volume flow: **2850 to 7550 m³/h**



CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- Handling of nearly all gases and vapours
- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pump LPH 10054 is a single-stage one. It can be applied with small modification as compressor up to a compression pressure of 1,5 bar (see catalogue part K).

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 120...900 mbar must be created by robust vacuum pumps.
Fields of application are for example

- chemistry and pharmacy for distilling and degassing
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

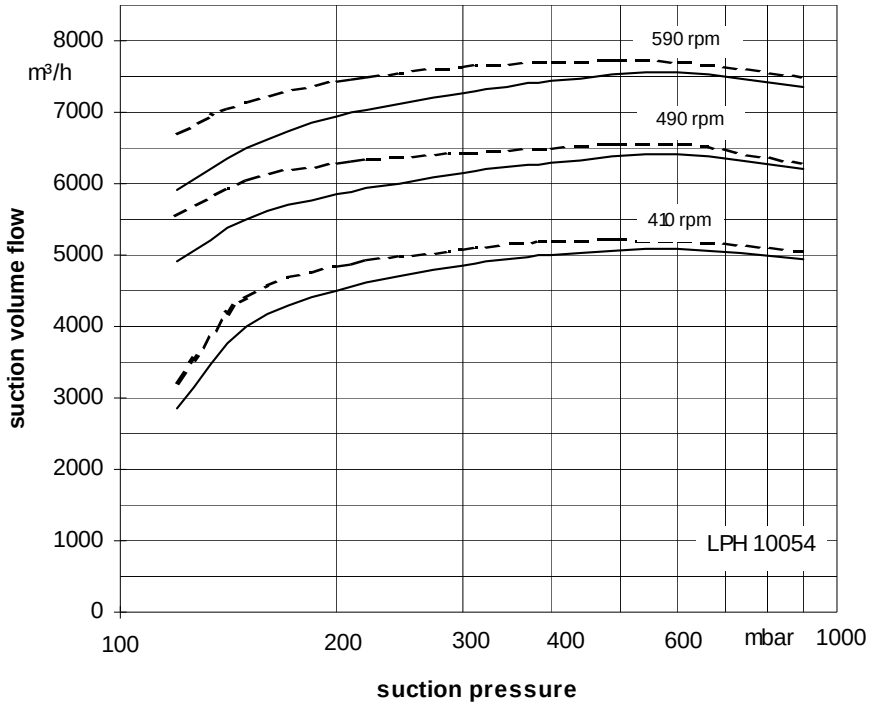
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.
The direction of rotation is clockwise, when looking from the drive on the pump.

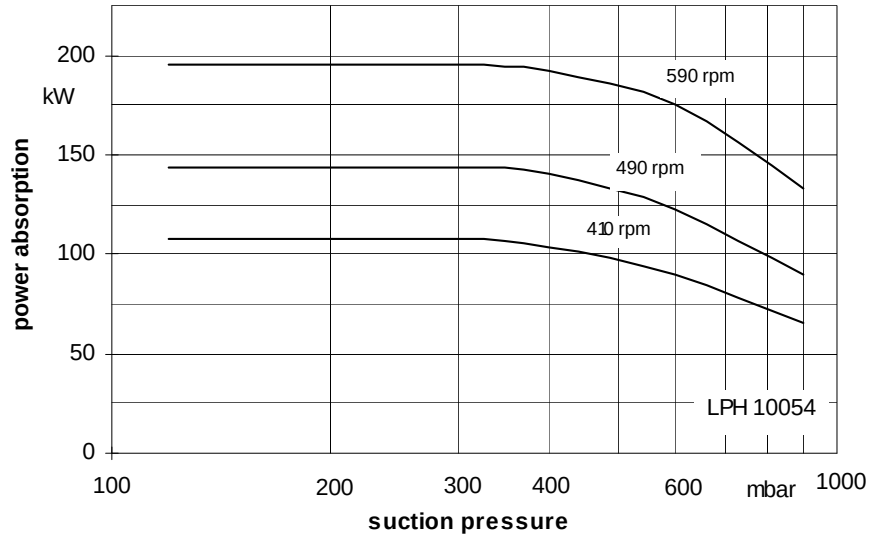
GENERAL TECHNICAL DATA

Pump type		unit	LPH 10054		
Speed [1]		rpm	410	490	590
Max. compression over pressure		bar		1,5	
Max. admissible pressure difference		bar		1,2	
Hydraulic test (over pressure)		bar		3	
Moment of inertial of the rotating pump parts and the water filling		kg · m²		57,5	
Sound pressure level at a suction pressure of 200 mbar		dB (A)	86	87	90
Min. pulley diameter admissible in case of V-belt drive		mm		1000	
Max. gas temperature	dry	°C		160	
	saturated	°C		80	
Service liquid					
max. admissible temperature		°C		60	
max. viscosity		mm²/s		90	
max. density		kg/m³		1200	
volume up to shaft level		liter		230	
Max. flow resistance of the heat exchanger		bar		0,2	

The combination of several limiting values is not admissible.
[1] Other speeds are possible, change of the gear ratio resp. V-belt drive

Suction volume flow and power absorption LPH 10054





The operating data are applicable under the following conditions:

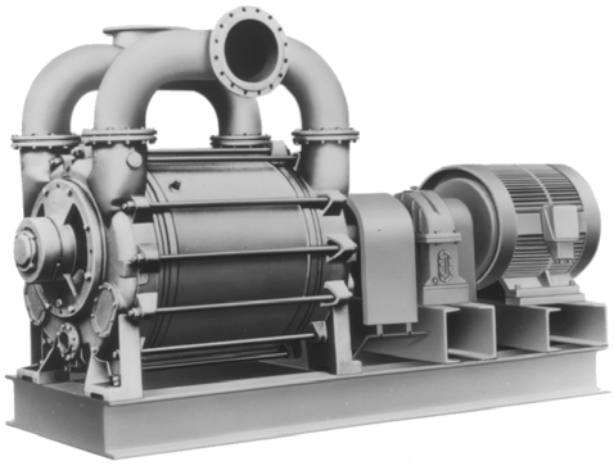
- pumping medium: - dry air: 20°C _____
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure

Liquid ring vacuum pumps
single-stage

LPH 11055

Pressure range: **120 to 1013 mbar**
Suction volume flow: **3500 to 10 700 m³/h**



CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- Handling of nearly all gases and vapours
- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pumps LPH 11055 are single-stage ones. They can be applied with small modification as compressors up to a compression pressure of 1,5 bar (see catalogue part K).

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 120...900 mbar must be created by robust vacuum pumps.
Fields of application are for example

- chemistry and pharmacy for distilling and degassing
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

During operation the pump 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 liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.
The direction of rotation is clockwise, when looking from the drive on the pump.

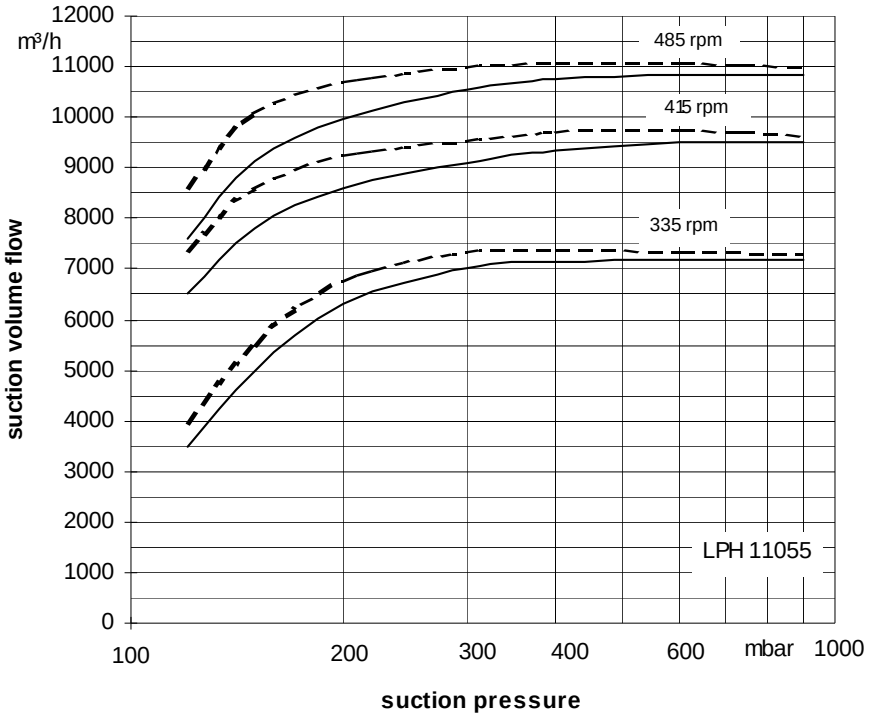
GENERAL TECHNICAL DATA

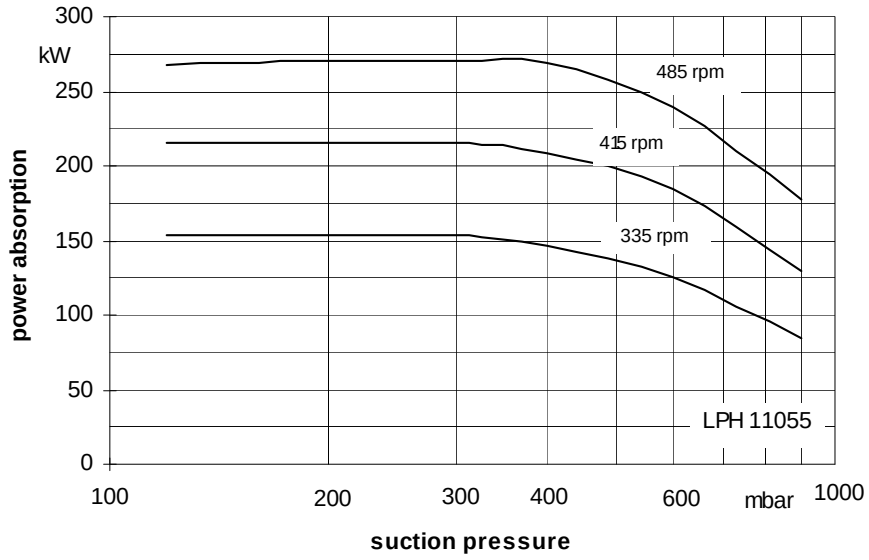
Pump type		unit	LPH 11055		
Speed		rpm	335	415	485
Max. compression over pressure		bar		1,5	
Max. admissible pressure difference		bar		1,2	
Hydraulic test (over pressure)		bar		3	
Moment of inertial of the rotating pump parts and the water filling		kg · m²		175	
Sound pressure level at a suction pressure of 200 mbar		dB (A)	86	87	88
Min. pulley diameter admissible in case of V-belt drive		mm		1250	
Max. gas temperature	dry	°C		160	
	saturated	°C		80	
Service liquid					
max. admissible temperature		°C		60	
max. viscosity		mm²/s		90	
max. density		kg/m³		1200	
volume up to shaft level		liter		410	
Max. flow resistance of the heat exchanger		bar		0,2	

The combination of several limiting values is not admissible.

[1)] Other speeds are possible, change of the gear ratio resp. V-belt drive

Suction volume flow and power absorption LPH 11055





The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C _____
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure

Liquid ring vacuum pumps
two stage

LPH 75320, LPH 75330, LPH 75340

FLOWSERVE
SIHI® Pumps

Pressure range: **33 to 1013 mbar**
suction volume: **500 to 1700 m³/h**

CONSTRUCTION

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- handling of nearly all gasses and vapours
- non polluting due to a nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly anywhere
- protection against cavitation as standard
- incorporated dirt drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pumps LPH 75320, LPH 75330 and LPH 75340 are two stage pumps.

APPLICATIONS

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33...900 mbar must be created by robust vacuum pumps.
Fields of application are for example:

- chemistry and pharmacy for distilling and degassing,
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

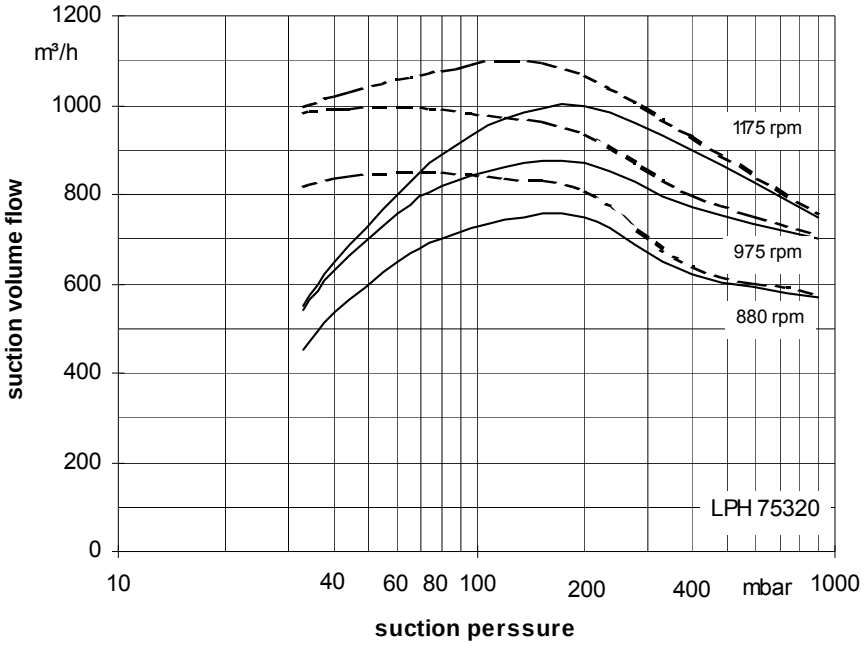
During the operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are with a device by which the contaminated service liquid can be drained during operation (dirt drain), if necessary.
The direction of the rotation is clockwise, when looking from the drive on the pump.

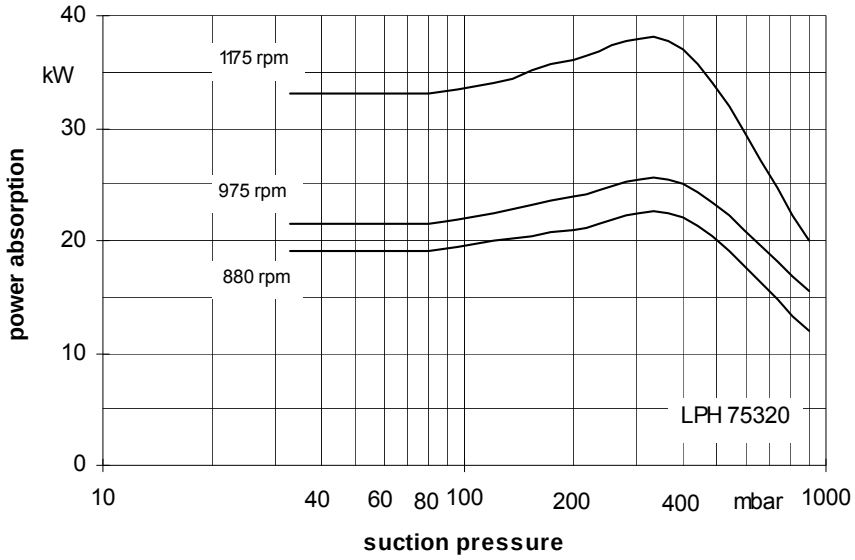
GENERAL TECHNICHAL DATA

Pump type	Unit	LPH 75320	LPH 75330	LPH 75340
Speed	rpm	880 975[1] 1175	880 975[1] 1175	880 975[1] 1175
Maximum overpressure on compression	bar	1.5		
Permissible pressure difference between suction and discharge side max.	bar	1.8 1.8 1.8 1.4[2]	1.8 1.7 1.6 1.4[2]	1.7 1.6 1.5 1.4[2]
Permissible pressure difference between suction and discharge side min.	bar	0.2		
Hydraulic test pressure (overpressure)	bar	3		
Moment of inertia of rotating parts of pump and water content	kg · m²	1.57	2.23	2.65
Noise level at 80 mbar suction pressure	dB (A)	78 79 80	78 79 80	78 79 80
Minimum permissible pulley diameter for V belt drive	mm	315	355	355
Maximum gas temperature dry	°C	200		
Maximum gas temperature saturated	°C	100		
Service liquid:				
Maximum permissible temperature	°C	80		
Minimum permissible temperature	°C	10		
Maximum viscosity	mm²/s	90		
Maximum density	kg/m³	1200		
Liquid capacity up to middle of shaft	litre	36	47	54
Maximum flow resistance of the heat exchanger	bar	0.2		

[1] normal speed
[2] in case of belt drive
The combination of several limiting values is not admissible.

Performance Characteristics LPH 75320



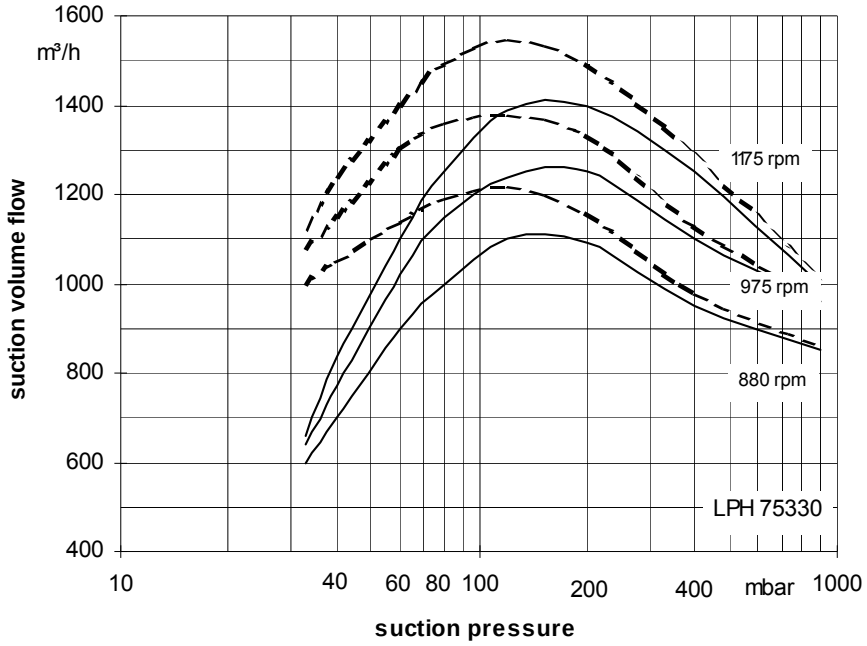


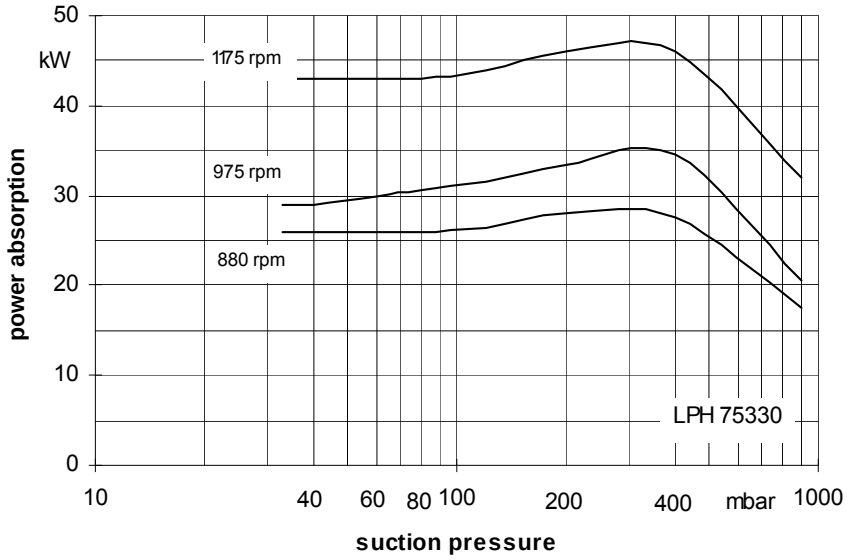
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LPH 75330



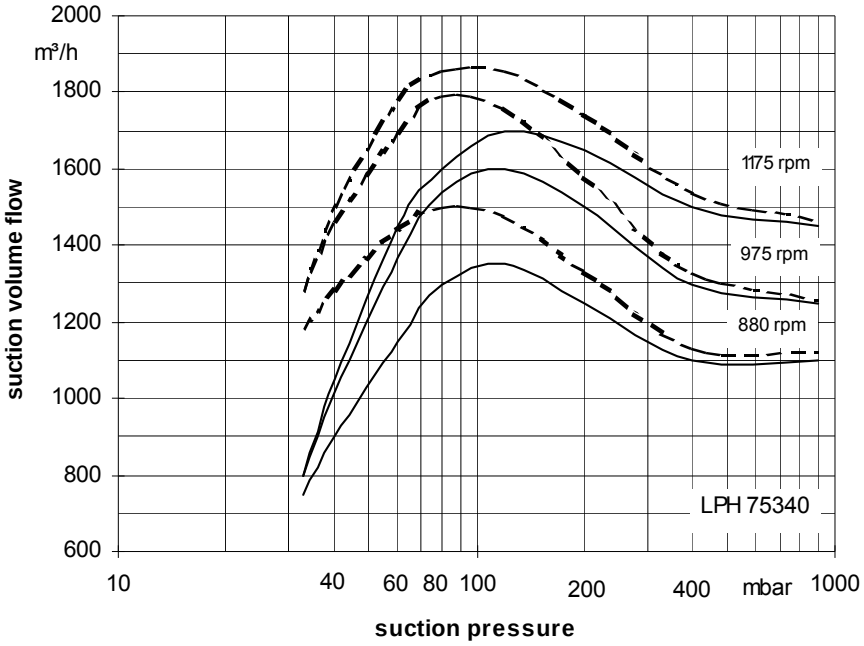


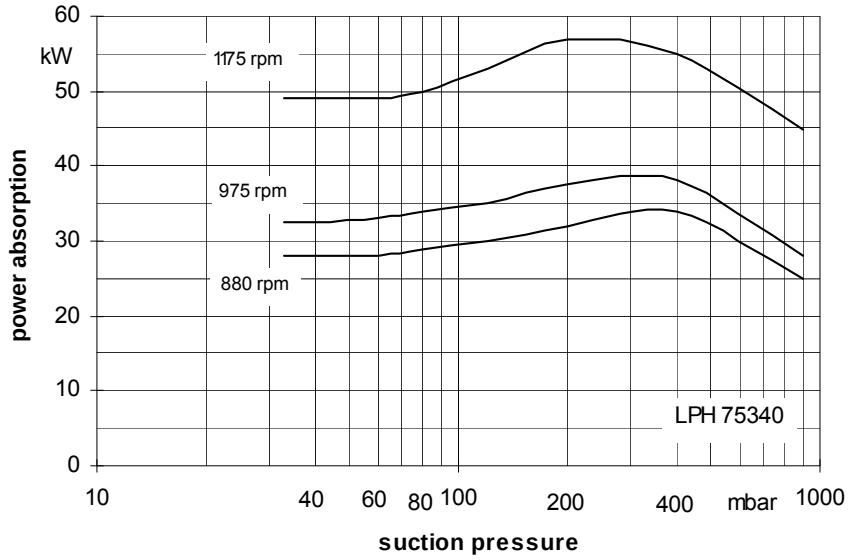
The operating data is valid under the following conditions:

- 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.

Performance Characteristics LPH 75340





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.

Liquid ring vacuum pumps
two stage

LPH 85340, LPH 85353

FLOWSERVE
SIHI® Pumps

Pressure range: **33 to 1013 mbar**
Suction volume flow: **1100 to 3100 m³/h**

CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- handling of nearly all gases and vapours
- non polluting due to a nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly anywhere
- protection against cavitation as standard
- incorporated dirt drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pumps LPH 85340 and LPH 85353 are two stage pumps.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33...900 mbar must be created by robust vacuum pumps.
Fields of application are for example:

- chemistry and pharmacy for distilling and degassing,
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

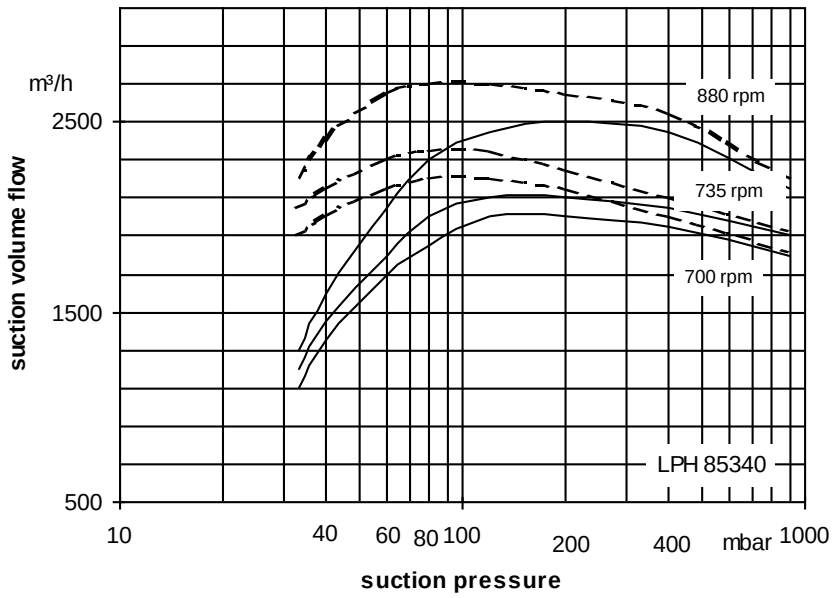
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are with a device by which the contaminated service liquid can be drained during operating (dirt drain), if necessary.
The direction of the rotation is clockwise, when looking from the drive on the pump.

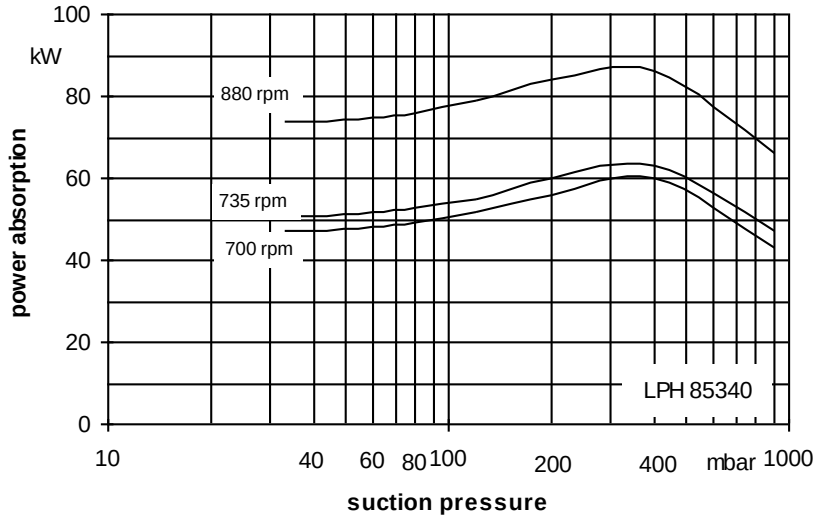
GENERAL TEECHNICAL DATA

pump type	unit	LPH 85340			LPH 85353		
Speed [1] normal speed	rpm	700	735[1]	880	700	735[1]	880
Max. compression over pressure	bar	1,5					
Max. admissible difference	bar	1,5	1,5	1,2[2]	1,5	1,5	1,2[2]
[2] in case of belt drive				1,5			1,5
Hydraulic test (over pressure)	bar	3					
Moment of inertial of the rotating pump parts and the water filling	kg · m²	8,5			10		
Sound pressure level at a suction of 80 mbar	dB (A)	80	80	82	80	80	82
Min. pulley diameter permissible in case of V-belt drive	mm	315			450		
Max. gas temperature dry	°C	160					
saturated	°C	80					
service liquid							
max. admissible temperature	°C	60					
max. viscosity	mm²/s	90					
max. density	kg/m³	1200					
volume up to shaft	liter	75			91		
max. flow resistance of the heat exchanger	bar	0,2					

The combination of several limiting values is not admissible.

Suction volume flow and power absorption LPH 85340



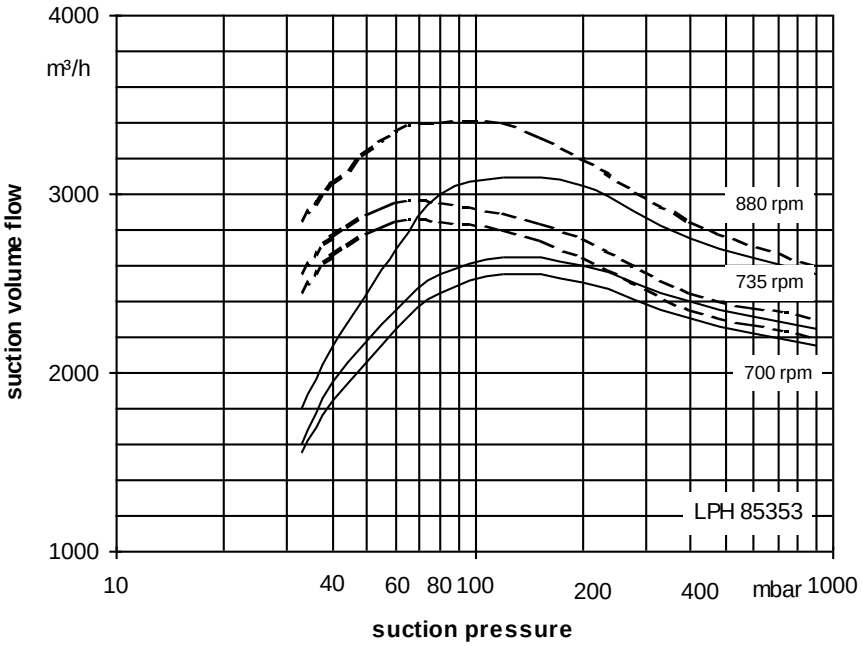


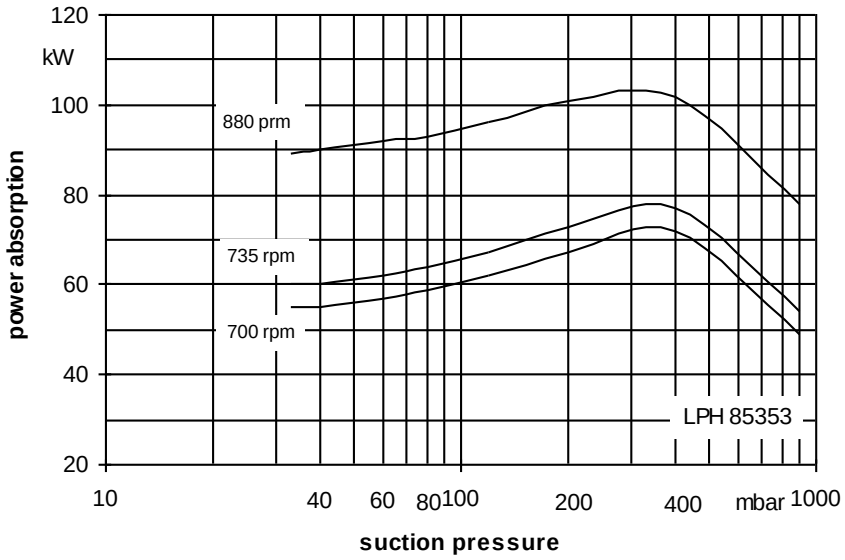
The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C
  - water vapour saturated air: 20°C
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10%
Max. fresh water need with lowest suction pressure

Suction volume flow and power absorption LPH 85353





The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C
  - water vapour saturated air: 20°C
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10%
Max. fresh water need with lowest suction pressure

Liquid ring vacuum pumps
two stage

LPH 95354, LPH 95367

Pressure range: **33 to 1013 mbar**
Suction volume flow: **2000 to 4200 m³/h**

CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- handling of nearly all gases and vapours
- non polluting due to a nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly anywhere
- protection against cavitation as standard
- incorporated dirt drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pumps LPH 95354 and LPH 95367 are two stage pumps.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33...900 mbar must be created by robust vacuum pumps.
Fields of application are for example:

- chemistry and pharmacy for distilling and degassing,
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

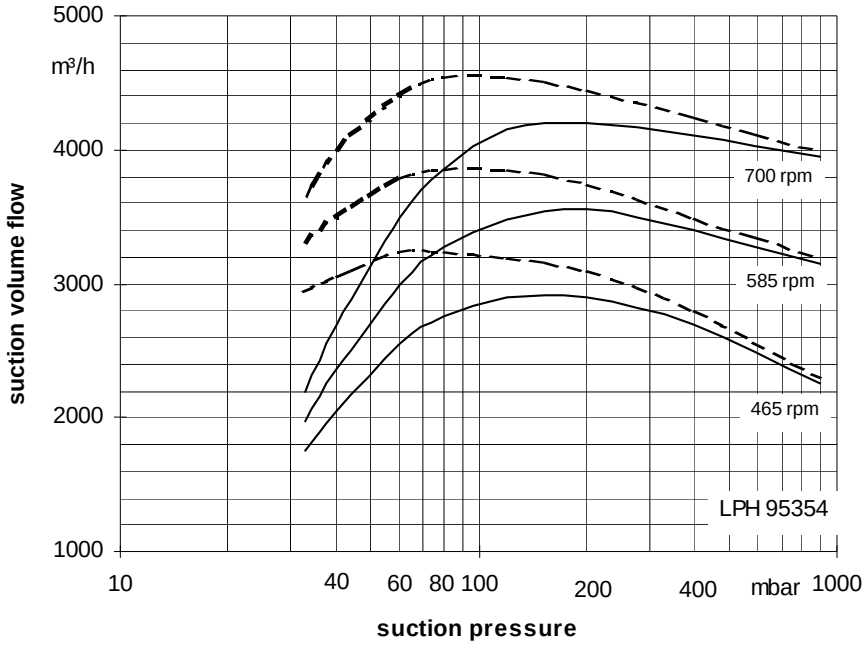
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are with a device by which the contaminated service liquid can be drained during operating (dirt drain), if necessary.
The direction of the rotation is clockwise, when looking from the drive on the pump.

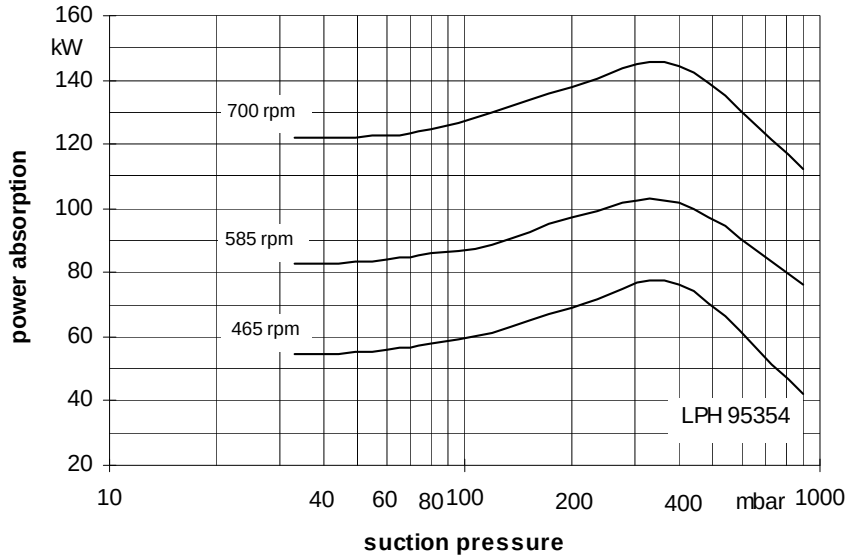
GENERAL TECHNICAL DATA

Pump type		unit	LPH 95354		LPH 95367
Speed [1] normal speed		rpm	465	585[1]	700
Max. compression over pressure		bar		1,5	
Max. admissible difference		bar	1,5	1,5	1,2[2]
[2] in case of belt drive					1,5
Hydraulic test (over pressure)		bar		3	
Moment of inertial of the rotating pump parts and of the water filling		kg · m²	28		32
Sound pressure level at a suction of 80 mbar		dB (A)	87	88	90
Min. pulley diameter permissible in case of V-belt drive		mm	710		800
Max. gas temperature	dry	°C		160	
	saturated	°C		80	
Service liquid:					
max. admissible temperature		°C		60	
max. viscosity		mm²/s		90	
max. density		kg/m³		1200	
volume up to shaft		liter	228		250
Max. flow resistance of the heat exchanger		bar		0,2	

The combination of several limiting values is not admissible.

Suction volume flow and power absorption LPH 95354



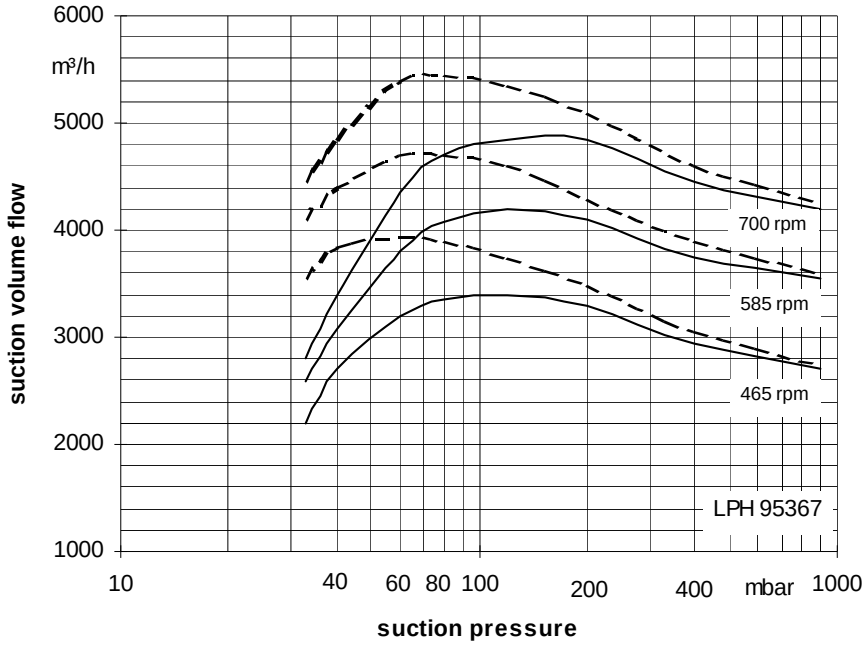


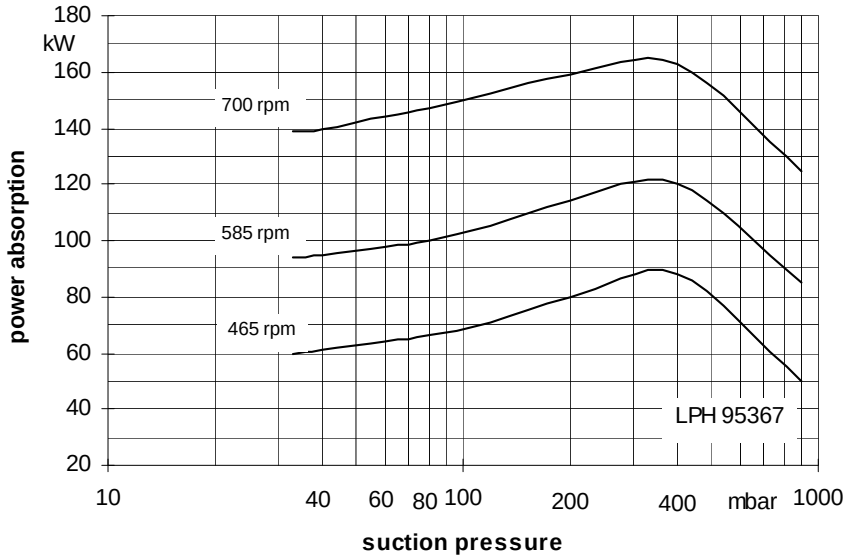
The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C ——————
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10%
Max. fresh water need with lowest suction pressure

Suction volume flow and power absorption LPH 95367





The operating data are applicable under the following conditions:

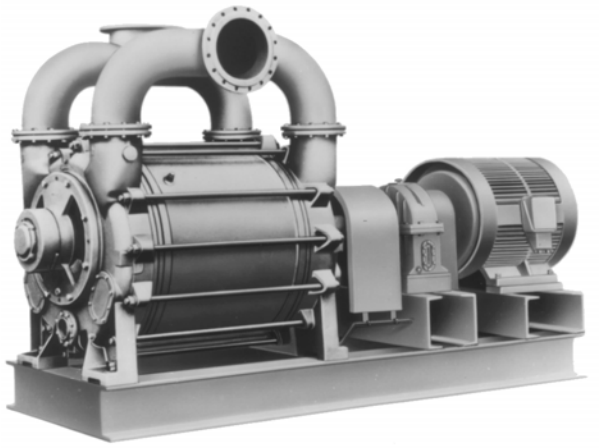
- pumping medium: - dry air: 20°C ——————
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10%
Max. fresh water need with lowest suction pressure

Liquid ring vacuum pumps
single-stage

LPH 10054

Pressure range: **120 to 1013 mbar**
Suction volume flow: **2850 to 7550 m³/h**



CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- Handling of nearly all gases and vapours
- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pump LPH 10054 is a single-stage one. It can be applied with small modification as compressor up to a compression pressure of 1,5 bar (see catalogue part K).

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 120...900 mbar must be created by robust vacuum pumps.
Fields of application are for example

- chemistry and pharmacy for distilling and degassing
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

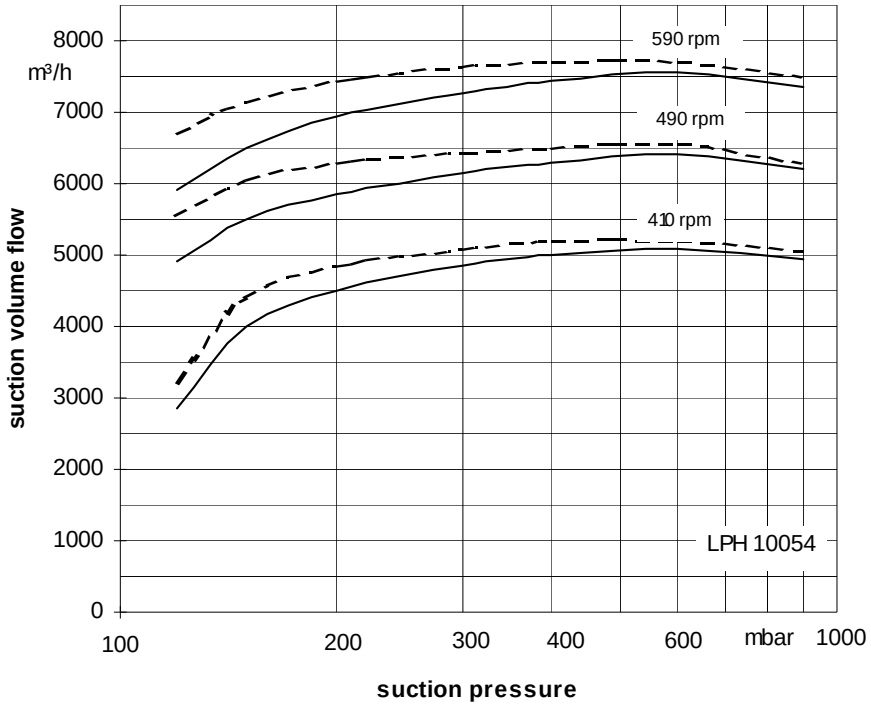
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.
The direction of rotation is clockwise, when looking from the drive on the pump.

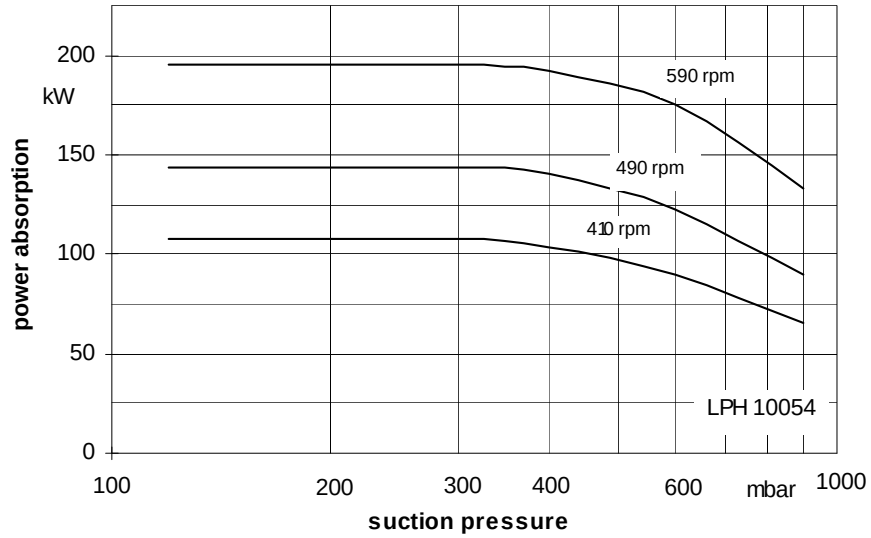
GENERAL TECHNICAL DATA

Pump type		unit	LPH 10054		
Speed [1]		rpm	410	490	590
Max. compression over pressure		bar		1,5	
Max. admissible pressure difference		bar		1,2	
Hydraulic test (over pressure)		bar		3	
Moment of inertial of the rotating pump parts and the water filling		kg · m²		57,5	
Sound pressure level at a suction pressure of 200 mbar		dB (A)	86	87	90
Min. pulley diameter admissible in case of V-belt drive		mm		1000	
Max. gas temperature	dry	°C		160	
	saturated	°C		80	
Service liquid					
max. admissible temperature		°C		60	
max. viscosity		mm²/s		90	
max. density		kg/m³		1200	
volume up to shaft level		liter		230	
Max. flow resistance of the heat exchanger		bar		0,2	

The combination of several limiting values is not admissible.
[1] Other speeds are possible, change of the gear ratio resp. V-belt drive

Suction volume flow and power absorption LPH 10054





The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C _____
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

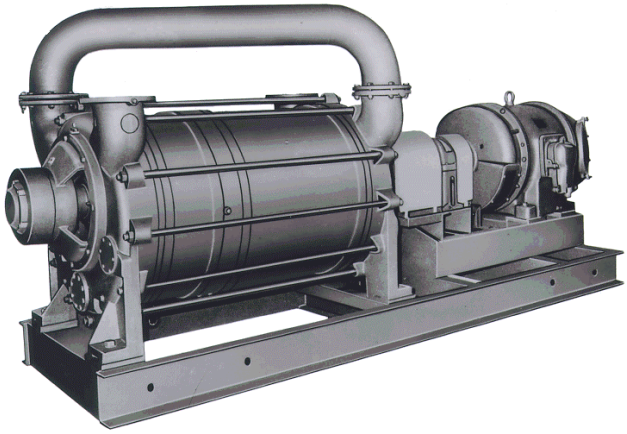
Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure

Liquid ring vacuum pumps
two stage

LPH 11535

FLOWSERVE
SIHI® Pumps

Pressure range: **33 to 1013 mbar**
Suction volume flow: **4900 to 10350 m³/h**



CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- handling of nearly all gases and vapours
- non polluting due to a nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly anywhere
- protection against cavitation as standard
- incorporated dirt drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring vacuum pump LPH 11535 is a two stage pump.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33...900 mbar must be created by robust vacuum pumps.
Fields of application are for example:

- chemistry and pharmacy for distilling and degassing,
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

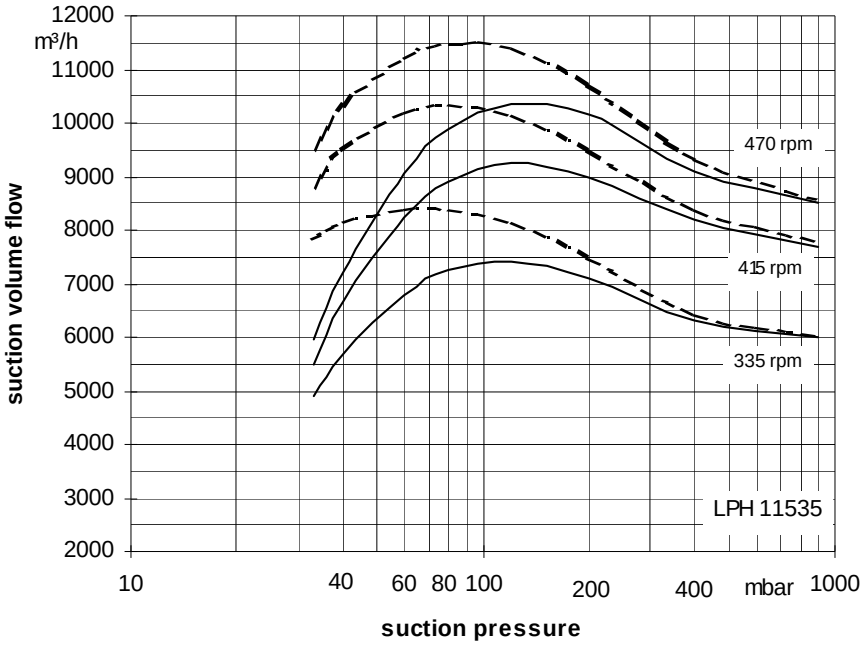
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are with a device by which the contaminated service liquid can be drained during operating (dirt drain), if necessary.
The direction of the rotation is clockwise, when looking from the drive on the pump.

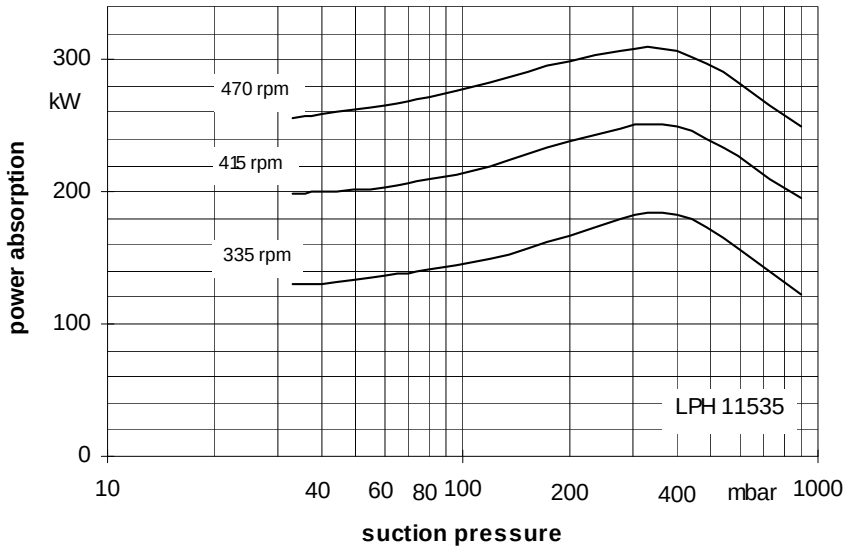
GENERAL TECHNICAL DATA

Pump type		unit	LPH 11535		
Speed [1] normal speed		rpm	355	415[1]	470
Max. compression over pressure		bar		1,5	
Max. admissible difference		bar		1,2	
Hydraulic test (over pressure)		bar		3	
Moment of inertial of the rotating pump parts and of the water filling		kg · m²		195	
Sound pressure level at a suction pressure of 80 mbar		dB (A)	89	90	91
Min. pulley diameter permissible in case of V-belt drive		mm		1250	
Max. gas temperature	dry saturated	°C °C		160 80	
Service liquid max. admissible temperature max. viscosity max. density volume up to shaft level		 °C mm²/s kg/m³ liter		 60 90 1200 680	
Max. flow resistance of the heat exchanger		bar		0,2	

The combination of several limiting values is not admissible.

Suction volume flow and power absorption LPH 11535





The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C ——————
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10%
Max. fresh water need with lowest suction pressure

Vacuum pumps for waste disposal vehicles

SL 2100, SL 2700, SL 3100

FLOWSERVE
SIHI® Pumps

Pressure range: **150 mbar to 1.0 bar** (overpressure)
Suction volume flow: **1010 to 3080 m³/h**

CONSTRUCTION

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- handling of all gases and vapours
- robust operating behaviour
- insensitive to entrained liquids
- low noise level, nearly free from vibration
- direct drive or belt drive
- very little wear because of regular dirt drain (out of the pump) and application of steel as construction material
- symmetrical design therefore optionally clockwise or anticlockwise operation by easy shifting of the shaft
- no lubricant in the working chamber
- compact design, small size
- option for internal evaporation cooling, thereby omission of additional external cooling for the operating liquid

- wide effective speed range from 800 to 1600 rpm
- weight-saving construction
- leak proof shaft seal, optionally: Special seal with radial shaft seal ring and gland packing ring or mechanical seal with bellows.

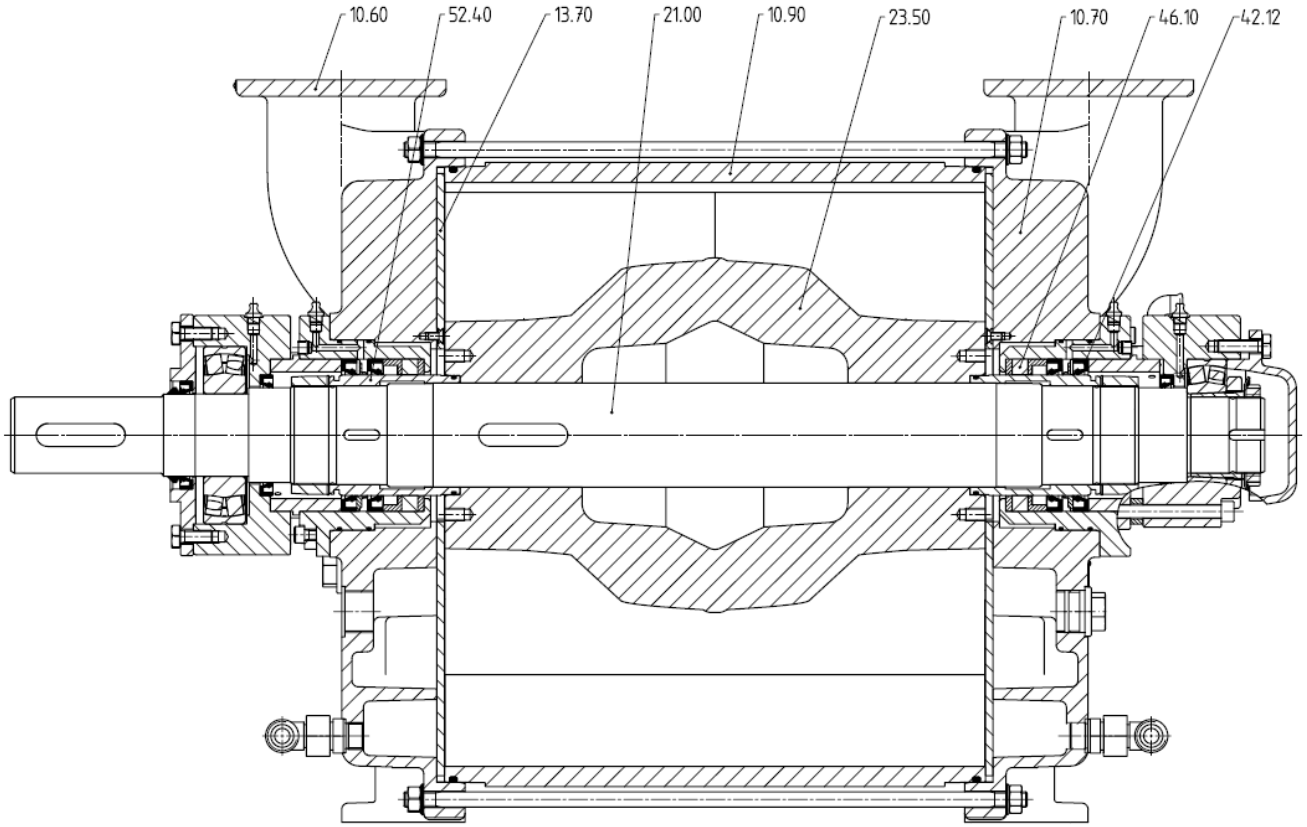
GENERAL TECHNICAL DATA

Pump type	unit	SL 2100	SL 2700	SL 3100
Suction volume flow (at 400 mbar, 1600 rpm and with water vapour saturated air)	m^3/h	2190	2700	3080
Speed min. / max.	rpm	1000 / 1600		
Power absorption (at 400 mbar and 1600 rpm)	kW	68	84	94
Power absorption (at 0.5 bar (overpressure) and 1600 rpm)	kW	76	87	103
Moment of inertial of the rotating pump parts and of the water filling (without coupling or pulley)	kg · m²	2.6	3.05	3.5
Sound pressure level (distance 7 m, 200 mbar / 0.5 bar (overpressure)	dB (A)	65 / 67	66 / 68	67 / 69
Max. gas temperature dry / saturated	°C	160 / 80		
Service liquid temperature min. / max.	°C	10 / 60		
Liquid volume of the pump (up to shaft mid)	litre	25	30	34
Min. suction pressure at vacuum operation	mbar	150		
Min. admissible pulley of diameter in vacuum operation	mm	236		300
Max. compression pressure in compressor operation	bar (overpressure)	1.0		
Min. admissible pulley of diameter in compressor operation 0.5 bar / 1.0 bar	mm	236 / 236	236 / 300	300 / 300

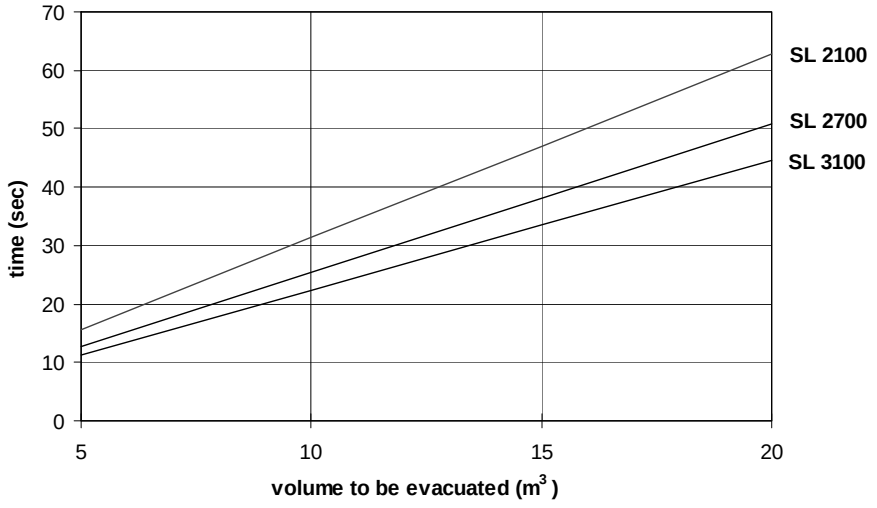
Material design

Item	COMPONENTS	Construction type special seal SL **053** 0B 1
10.60, 10.70	Vacuum casing	0.6025
10.90	Central body	1.0553
13.70	Guide disc	1.4301
23.50	Vane wheel impeller	0.7043
21.00	Shaft	1.0503
52.40	Shaft sleeve	1.4021 (with protective coat against wear)
42.12, 46.10	Shaft sealing	GORE / Viton-RWDR

Sectional drawing SL 2100, SL 2700, SL 3100



Evacuation times (from atmosphere to 150 mbar)



Note:
These evacuation times are standard values. The real duration depends on the tightness of the entire system.

Suction volume flow and power absorption SL 2100, SL 2700, SL 3100

The tables show the operating data of the liquid ring vacuum pump under catalogue conditions (pumping gas: water vapour saturated air at 20 °C, service liquid water at 20 °C).

SL 2100		power absorption in kW				
		vacuum operation (p_2 = 1013 mbar)			compressor operation (p_1 = 0 bar)	
speed rpm	suction volume flow m³/h	200 mbar kW	400 mbar kW	600 mbar kW	0.5 bar kW	1.0 bar kW
1600	2190	72	68	64	76	93
1400	1930	55	52	48	58	72
1200	1660	41	38	35	44	58
1000	1370	30	28	25	32	44

SL 2700		power absorption in kW				
		vacuum operation (p_2 = 1013 mbar)			compressor operation (p_1 = 0 bar)	
speed rpm	suction volume flow m³/h	200 mbar kW	400 mbar kW	600 mbar kW	0.5 bar kW	1.0 bar kW
1600	2700	86	84	83	87	110
1400	2400	66	63	62	70	85
1200	2080	49	47	43	53	66
1000	1720	36	33	31	38	50

SL 3100		power absorption in kW				
		vacuum operation (p_2 = 1013 mbar)			compressor operation (p_1 = 0 bar)	
speed rpm	suction volume flow m³/h	200 mbar kW	400 mbar kW	600 mbar kW	0.5 bar kW	1.0 bar kW
1600	3080	95	94	93	103	122
1400	2700	72	71	70	79	96
1200	2320	54	51	49	60	74
1000	1910	39	36	35	43	56

According to the installation and operating conditions (evaporation cooling, speed, pressures, temperatures) there can be variations in the specifications.

Service liquid flow

During operation the pump must continuously be supplied with water out of the separator, 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.
There are two possibilities for the cooling of the service liquid:
a) air / water cooler with circulating pump
b) internal evaporation cooling

A level switch in the separator releases an alarm, if the service liquid level falls below the minimum (about 1/5 of the separator volume), then the circulating pump is switched on.

pump:	speed rpm	Service liquid flow in m³/h				
		vacuum operation (p_2 = 1013 mbar)			compressor operation (p_1 = 0 bar)	
		200 mbar	400 mbar	600 mbar	0.5 bar	1.0 bar
SL 2100	1000 ... 1600	4.1	3.4	2.7	2.9	4.6
SL 2700						
SL 3100						

Service liquid flow dependent on the suction/compression pressure.

The indicated values refer to standard applications where the service liquid is supplied under compression pressure p_2 (atmospheric pressure in case of vacuum operation).

In case of circulating liquid operation when using a liquid pump the values must not be lower than the indicated values.

Liquid ring vacuum pumps

LEH 1200, LEH 1500, LEH 1800

FLOWSERVE
SIHI® Pumps

Pressure range: **33 to 1013 mbar**
Suction volume flow: **440 to 2050 m³/h**

CONSTRUCTION TYPE

SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- handling of nearly all gases and vapours
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- Internal service liquid return; adjustable from the outside
- protection against cavitation as standard
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The SIHI liquid ring vacuum pumps LEH are single-stage ones.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33 to 900 mbar must be created by robust vacuum pumps.
Fields of application are for example:

- chemistry and pharmacy for distilling and degassing,
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

During operation the pump 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 liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.

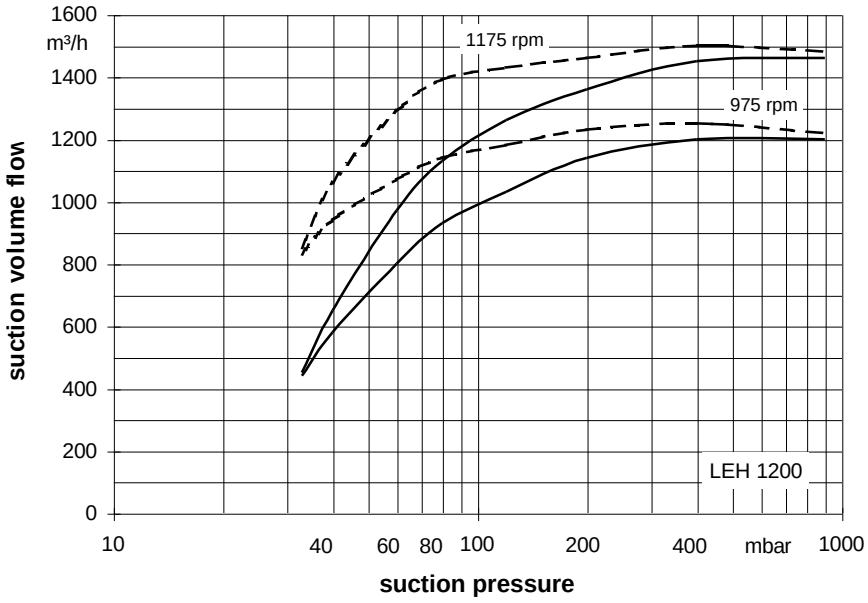
The direction of rotation is clockwise, when looking from the drive on the pump.

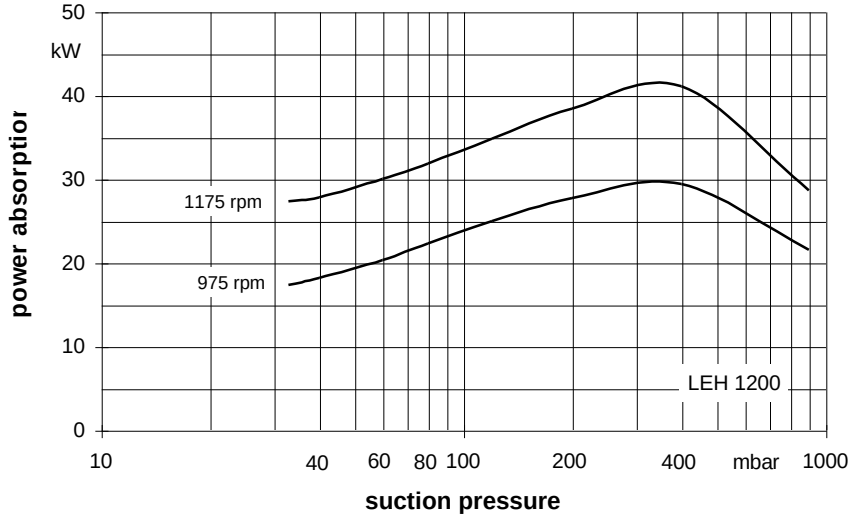
GENERAL TECHNICAL DATA

Pump type		unit	LEH 1200	LEH 1500	LEH 1800
Speed	50 Hz 60 Hz	rpm		975 1175	
Max. compression over pressure		bar		1,5	1,2
Max. admissible pressure difference		bar		1,5	1,2
Hydraulic test (over pressure)		bar		3	
Moment of inertial of the rotating pump parts and of the water filling		kg · m²	2,6	3,05	3,5
Sound pressure level at a suction pressure of 80 mbar		dB (A)		79	
Min. pulley diameter permissible in case of V-belt drive		mm		355	500
Max. gas temperature	dry saturated	°C °C		200 100	
Service liquid max. admissible temperature max. viscosity max. density volume up to shaft level		°C mm²/s kg/m³ liter	30	80 90 1200 35	39,5
Max. flow resistance of the heat exchanger		bar		0,2	

The combination of several limiting values is not admissible.

Suction volume flow and power absorption LEH 1200



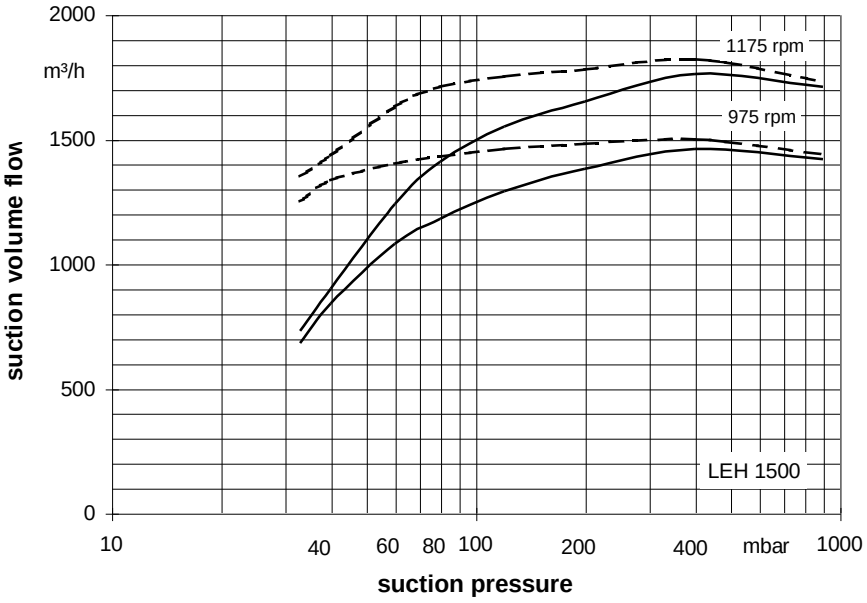


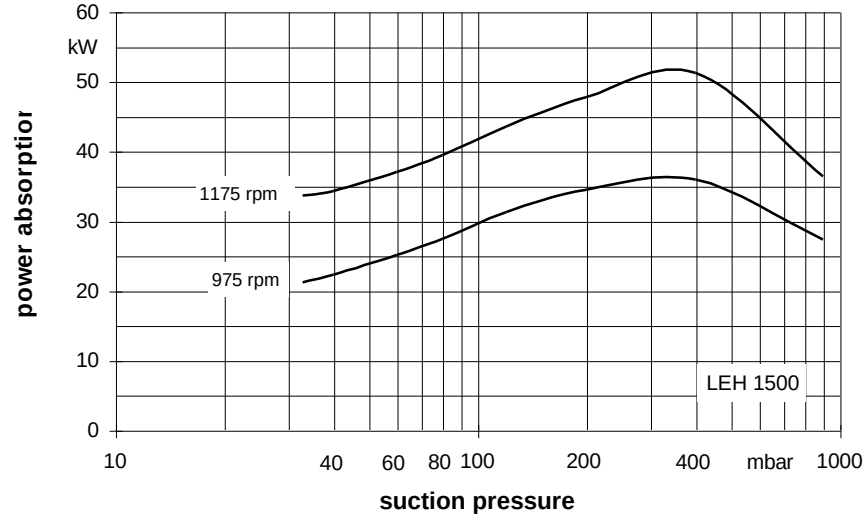
The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C ——————
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10%
Max. fresh water need with lowest suction pressure

Suction volume flow and power absorption LEH 1500



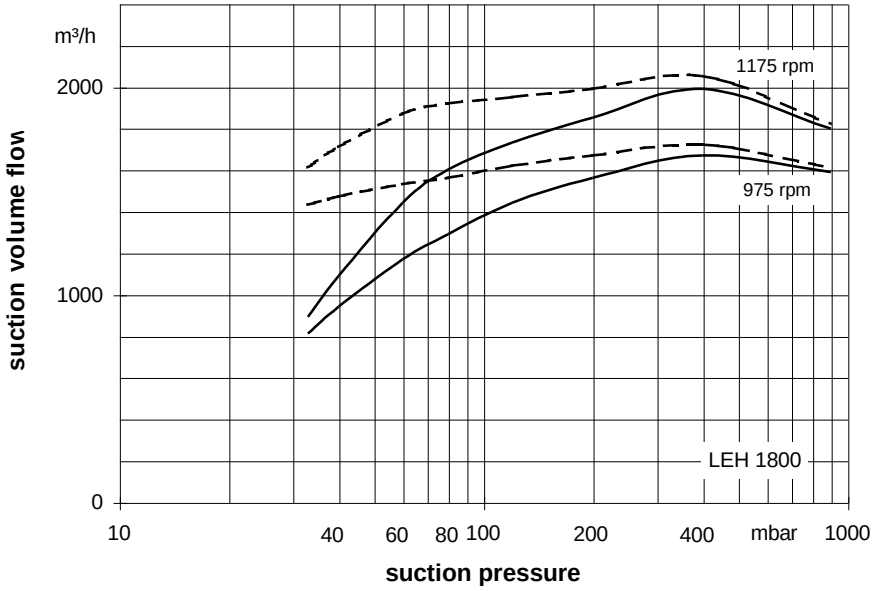


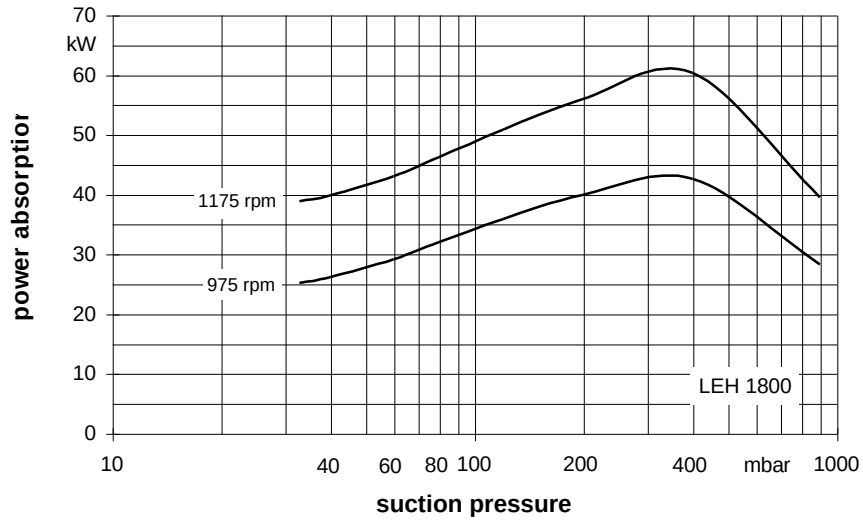
The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C ——————
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10%
Max. fresh water need with lowest suction pressure

Suction volume and power absorption LEH 1800





The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C ——————
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10%
Max. fresh water need with lowest suction pressure

Liquid ring vacuum pumps

LEH 2200, LEH 3000

FLOWSERVE
SIHI® Pumps

Pressure range: **33 to 1013 mbar**
Suction volume flow: **730 to 3550 m³/h**

CONSTRUCTION TYPE

SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- handling of nearly all gases and vapours
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- Internal service liquid return; adjustable from the outside
- protection against cavitation as standard
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The SIHI liquid ring vacuum pumps LEH are single-stage ones.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33 to 900 mbar must be created by robust vacuum pumps.
Fields of application are for example:

- chemistry and pharmacy for distilling and degassing,
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

During operation the pump 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 liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.

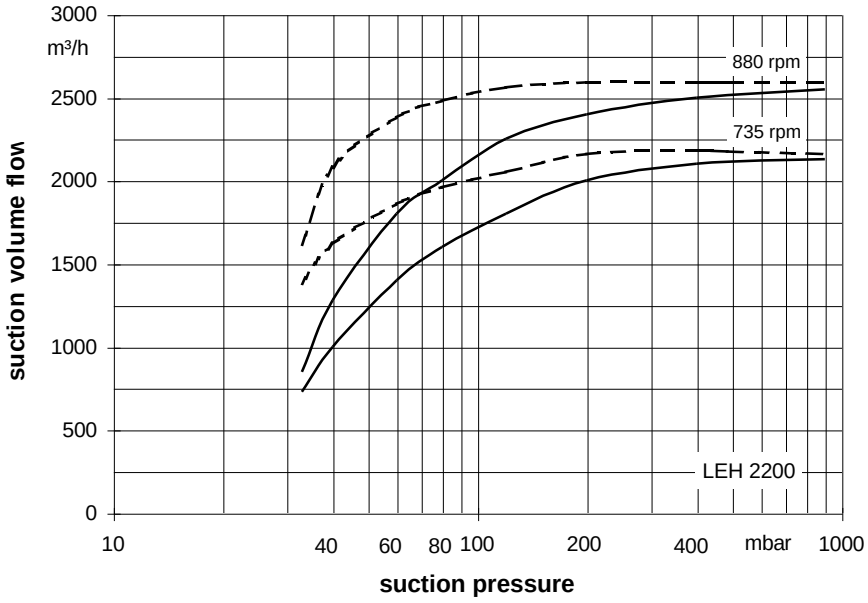
The direction of rotation is clockwise, when looking from the drive on the pump.

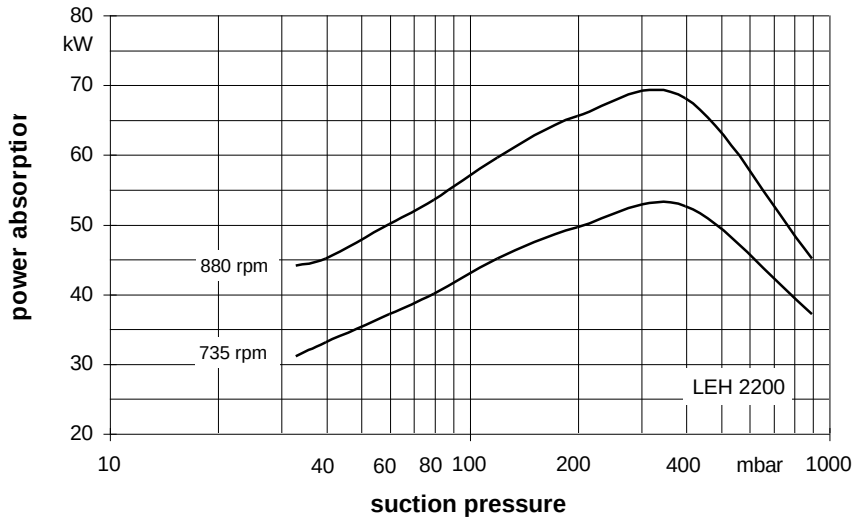
GENERAL TECHNICAL DATA

Pump type		unit	LEH 2200	LEH 3000
Speed	50 Hz 60 Hz	rpm	735 880	
Max. compression over pressure		bar	1,5	
Max. admissible pressure difference		bar	1,5	
Hydraulic test (over pressure)		bar	3	
Moment of inertial of the rotating pump parts and of the water filling		kg · m²	8,7	10,8
Sound pressure level at a suction pressure of 80 mbar		dB (A)	80	
Min. pulley diameter permissible in case of V-belt drive		mm	355	500
Max. gas temperature	dry saturated	°C °C	160 80	
Service liquid max. admissible temperature max. viscosity max. density volume up to shaft level		°C mm²/s kg/m³ liter	60 90 1200 50	65
Max. flow resistance of the heat exchanger		bar	0,2	

The combination of several limiting values is not admissible.

Suction volume flow and power absorption LEH 2200



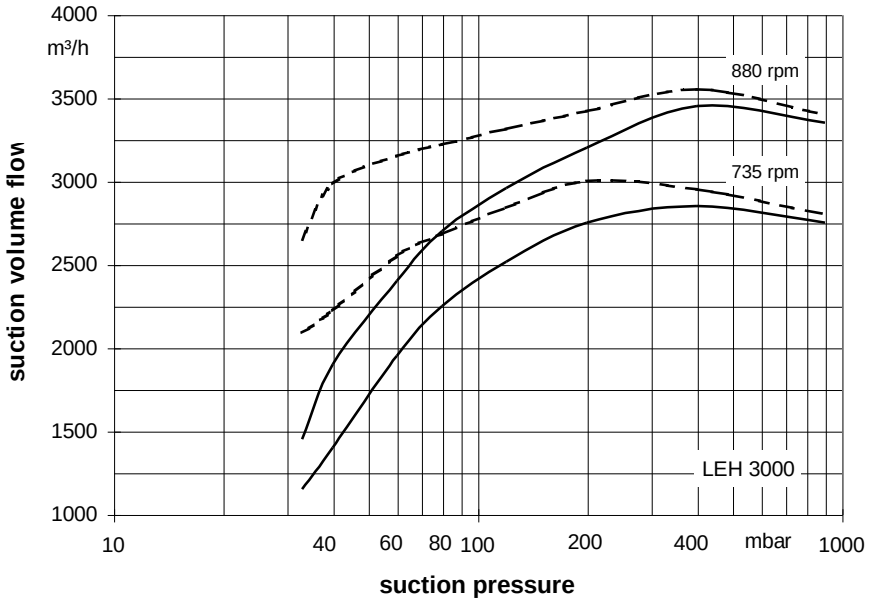


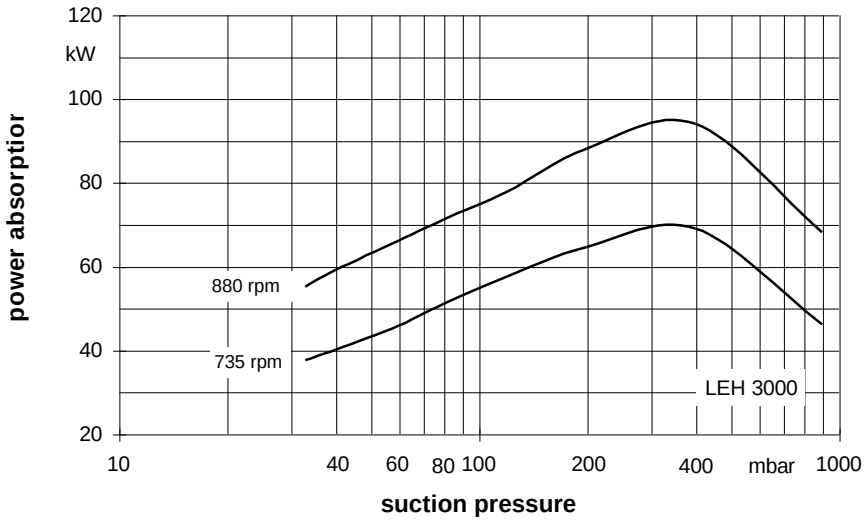
The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C
  - water vapour saturated air: 20°C
- service liquid: water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with lowest suction pressure

Suction volume flow and power absorption LEH 3000





The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C
  - water vapour saturated air: 20°C
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with lowest suction pressure

Liquid ring vacuum pumps

LEH 3600, LEH 4400

FLOWSERVE
SIHI® Pumps

Pressure range: **33 to 1013 mbar**
Suction volume flow: **1100 to 5150 m³/h**

CONSTRUCTION TYPE

SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- handling of nearly all gases and vapours
- small quantities of entrained liquid can be handled
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- protection against cavitation as standard
- incorporated dirt drain
- no metallic contact of the rotating parts

The SIHI liquid ring vacuum pumps are single-stage ones.

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 33 to 900 mbar must be created by robust vacuum pumps.
Fields of application are for example:

- chemistry and pharmacy for distilling and degassing.
- electric industry for impregnating and drying
- plastics industry for degassing etc.

NOTE

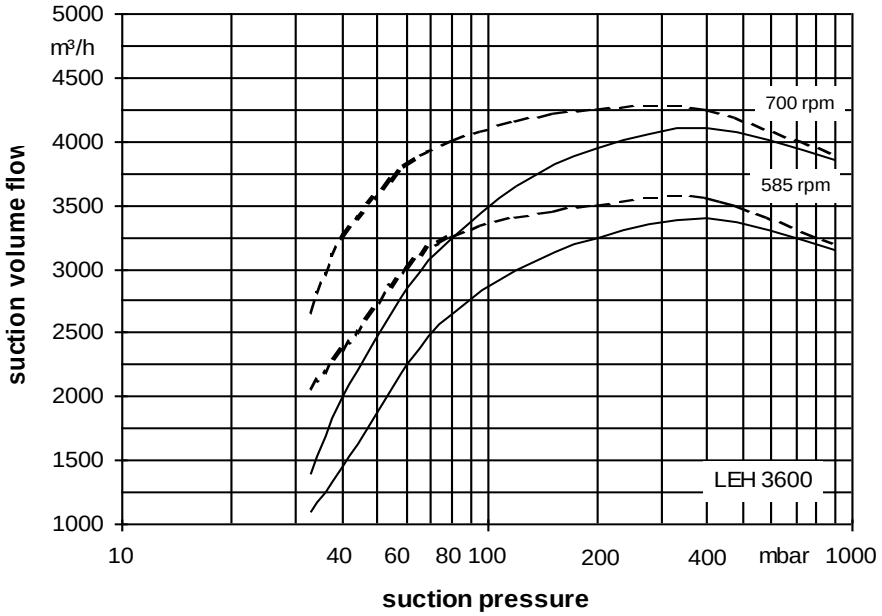
During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.
The direction of rotation is clockwise, when looking from the drive end on the pump.

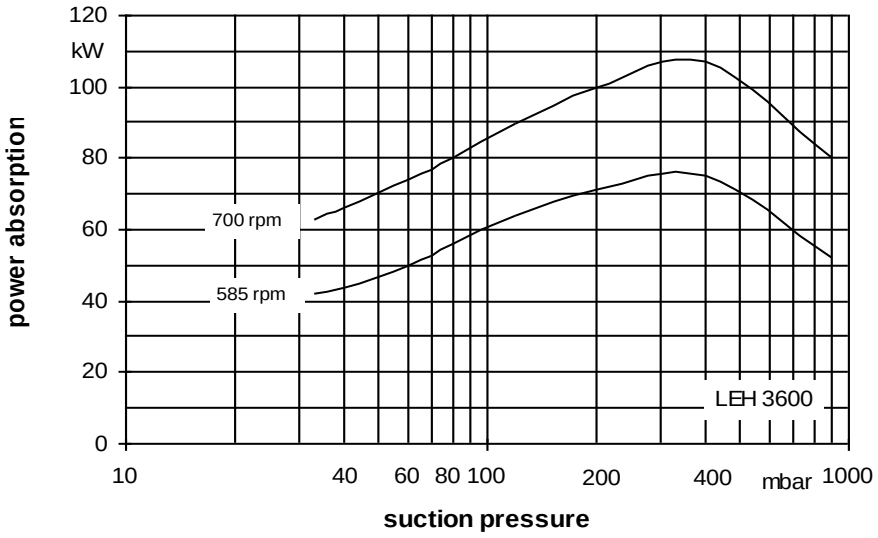
GENERAL TECHNICAL DATA

Pump type		unit	LEH 3600	LEH 4400
Speed	50 Hz 60 Hz	rpm	585 700	
Max. compression over pressure		bar	1,5	
Max. admissible pressure difference		bar	1,5	
Hydraulic test (over pressure)		bar	3	
Moment of inertial of the rotating pump parts and of the water filling		kg · m²	26,6	32,4
Sound pressure level at a suction pressure of 80 mbar		dB (A)	84	
Min. pulley diameter permissible in case of V-belt drive		mm	710	800
Max. gas temperature	dry saturated	°C °C	160 80	
Service liquid max. admissible temperature max. viscosity max. density volume up to shaft level		°C mm²/s kg/m³ liter	 60 90 1200 165	 193
Max. flow resistance of the heat exchanger		bar	0,2	

The combination of several limiting values is not admissible.

Suction volume flow and power absorption LEH 3600



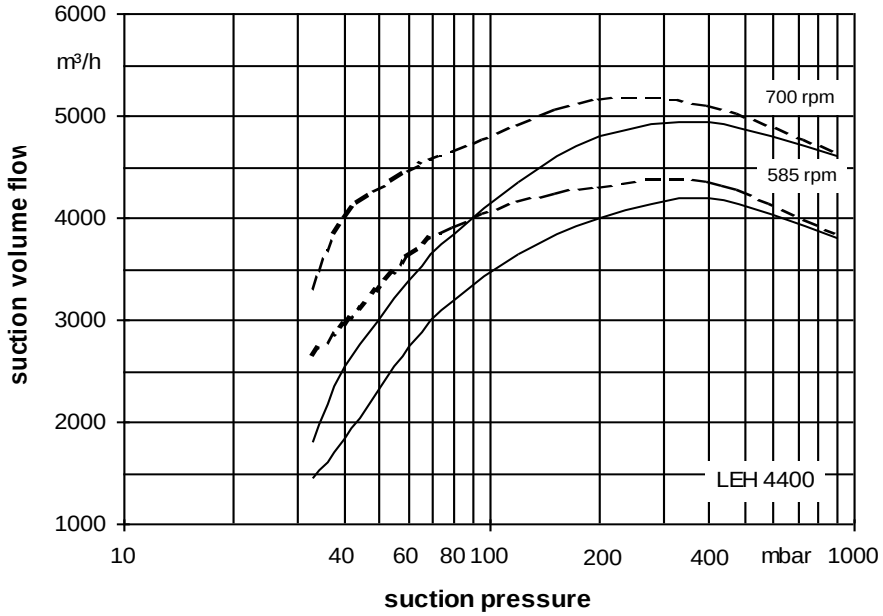


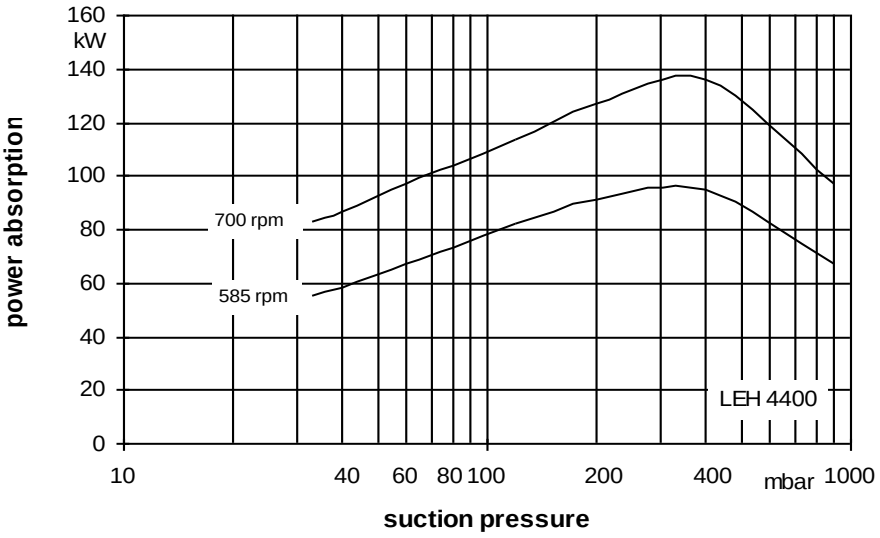
The operating data are valid under the following conditions:

- pumping medium: - dry air: 20°C
  - water vapour saturated air: 20°C
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and power absorption 5%
Max. fresh water need with the lowest suction pressure

Suction volume flow and power absorption LEH 4400





The operating data are valid under the following conditions:

- pumping medium: - dry air: 20°C
  - water vapour saturated air: 20°C
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and power absorption 5%
Max. fresh water need with the lowest suction pressure