

Вакуумные мембранные насосы D-Lab

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: ewc@nt-rt.ru || сайт: <https://edwards.nt-rt.ru/>

Instruction Manual

D-LAB Laboratory Vacuum Pumps

Description	Item Number
D-LAB 10-100, diaphragm pump, 110 V, 60 Hz, single-phase	A480-15-941
D-LAB 10-100, diaphragm pump, 220-240 V, 50 Hz, single-phase	A480-15-960
D-LAB 10-100, diaphragm pump, 100 V, 50/60 Hz, single-phase	A480-15-933
D-LAB 20-100, diaphragm pump, 110 V, 60 Hz, single-phase	A480-17-941
D-LAB 20-100, diaphragm pump, 220-240 V, 50 Hz, single-phase	A480-17-960
D-LAB 10-100, diaphragm pump, 100 V, 50/60 Hz, single-phase	A480-17-933
D-LAB 34-100, diaphragm pump, 110 V, 60 Hz, single-phase	A480-21-941
D-LAB 34-100, diaphragm pump, 220-240 V, 50 Hz, single-phase	A480-21-960
D-LAB 10-100, diaphragm pump, 100 V, 50/60 Hz, single-phase	A480-21-933
D-LAB 10-8, diaphragm pump, 110 V, 60 Hz, single-phase	A480-16-941
D-LAB 10-8, diaphragm pump, 220-240 V, 50 Hz, single-phase	A480-16-960
D-LAB 10-100, diaphragm pump, 100 V, 50/60 Hz, single-phase	A480-16-933
D-LAB 20-8, diaphragm pump, 110 V, 60 Hz, single-phase	A480-18-941
D-LAB 20-8, diaphragm pump, 220-240 V, 50 Hz, single-phase	A480-18-960
D-LAB 10-100, diaphragm pump, 100 V, 50/60 Hz, single-phase	A480-18-933
D-LAB 34-8, diaphragm pump, 110 V, 60 Hz, single-phase	A480-22-941
D-LAB 34-8, diaphragm pump, 220-240 V, 50 Hz, single-phase	A480-22-960
D-LAB 10-100, diaphragm pump, 100 V, 50/60 Hz, single-phase	A480-22-933

110 V versions are supplied with USA plug

220-240 V versions are supplied with IEC plug

100 V versions are supplied with a Japanese plug



Declaration of Conformity

We, Edwards,
Innovation Drive,
Burgess Hill,
West Sussex,
RH15 9TW, UK

declare under our sole responsibility, as manufacturer and person within the EU authorised to assemble the technical file, that the product(s)

D-LAB 10-100, diaphragm pump, 100V, 50Hz, single-phase	A480-15-933
D-LAB 10-100, diaphragm pump, 115V, 50Hz, single-phase	A480-15-941
D-LAB 10-100, diaphragm pump, 230V, 50Hz, single-phase	A480-15-960
D-LAB 10-8, diaphragm pump, 100V, 50Hz, single-phase	A480-16-933
D-LAB 10-8, diaphragm pump, 115V, 50Hz, single-phase	A480-16-941
D-LAB 10-8, diaphragm pump, 230V, 50Hz, single-phase	A480-16-960
D-LAB 20-100, diaphragm pump, 100V, 50Hz, single-phase	A480-17-933
D-LAB 20-100, diaphragm pump, 115V, 50Hz, single-phase	A480-17-941
D-LAB 20-100, diaphragm pump, 230V, 50Hz, single-phase	A480-17-960
D-LAB 20-8, diaphragm pump, 100V, 50Hz, single-phase	A480-18-933
D-LAB 20-8, diaphragm pump, 115V, 50Hz, single-phase	A480-18-941
D-LAB 20-8, diaphragm pump, 230V, 50Hz, single-phase	A480-18-960
D-LAB 34-100, diaphragm pump, 100V, 50Hz, single-phase	A480-21-933
D-LAB 34-100, diaphragm pump, 115V, 50Hz, single-phase	A480-21-941
D-LAB 34-100, diaphragm pump, 230V, 50Hz, single-phase	A480-21-960
D-LAB 34-8, diaphragm pump, 100 V, 50 Hz, single-phase	A480-22-933
D-LAB 34-8, diaphragm pump, 115V, 50Hz, single-phase	A480-22-941
D-LAB 34-8, diaphragm pump, 230V, 50Hz, single-phase	A480-22-960

to which this declaration relates is in conformity with the following standard(s) or other normative document(s)

EN1012-2:1996+A1:2009	Compressors and Vacuum Pumps. Safety Requirements. Vacuum Pumps
EN61010-1: 2010	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use. General Requirements
EN50581:2012	Technical Documentation for the Assessment of Electrical and Electronic Products with respect to the Restriction of Hazardous Substances

and fulfils all the relevant provisions of

2006/42/EC	Machinery Directive
2014/35/EU	Low Voltage Directive
2011/65/EU	Restriction of Certain Hazardous Substances (RoHS) Directive

Note: This declaration covers all product serial numbers from the date this Declaration was signed onwards.

Introduction

The D-LAB vacuum pump series was developed specifically to satisfy the exacting standards, reliability and ease of use demanded in today's laboratory applications.

Diaphragm pump technology has proved itself during recent decades and the D-LAB range is a logical continuation of this technology.

With six different pumping capacities and having facilities for modular expansion, a D-LAB pumping system can be optimised for any application.

Example of uses:

- * Vacuum filtration
- * Vacuum distillation
- * Vacuum drying
- * Impregnation
- * Rotary evaporation
- * Pumping and transferring of gases
- * Gel drying

Item	Description
1.	Vacuum Pump
2.	On/off switch of pump
3.	Electrical Supply Unit
4.	Baseplate
5.	Locating pin for pump
6.	Support Bar for Condenser
7.	Support Bar for Vacuum Controller
8.	Separator
9.	Holder for Separator
10.	Hose connector
11.	High performance Condenser
12.	Flask for condensate
13.	Spring Clamp
14.	Angled nozzle
15.	Vacuum Valve
16.	Pump Vent Valve
17.	Controller Vent Valve
18.	Vacuum Controller
19.	On/off switch for Vacuum Controller

Characteristics of D-LAB Pumps and D-LAB Systems:

- * The vacuum pumps are gas-tight, 100 % oil-free, maintenance-free and quiet.
- * High ultimate vacuum and fast pump down time.
- * All parts of the pump head in contact with gases being pumped are resistant against aggressive substances (materials: PTFE, FFKM, PVDF).
- * New valve system is very tolerant of water vapour and condensates.
- * Illuminated switch on pump.
- * Over-load protection by means of thermal cutout.
- * Compact design with space saving dimensions.
- * Changing of the diaphragms and valves in the vacuum pumps is a simple procedure.
- * The individual system components are easily integrated into one unit which can be progressively expanded.
- * The entire unit is mounted on a sturdy baseplate which makes it safe and easy to transport.
- * Individual components are easily removed because they all have plug in connectors.
- * Additional laboratory equipment can easily be mounted on the grooves holding the separator or on the support rods and horizontal bars.

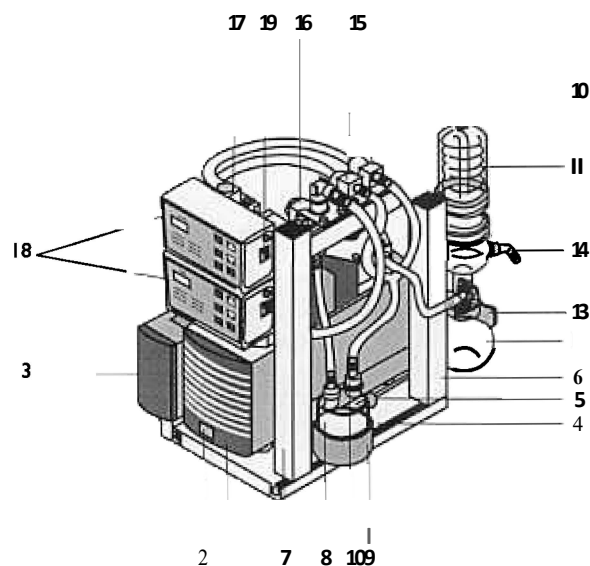


Figure 1 Complete expanded D-LAB System SCC eg. pump model D-LAB 34-8

Modular System.

Starting with a pump, it is possible to build up a system. The ultimate type is the SCC system which is capable of controlling two separate vacuum processes.

Vacuum Pump with two Separators (System SR)

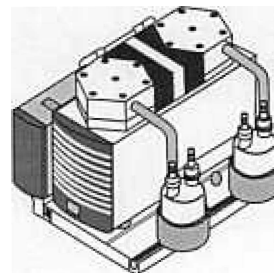


Figure 2 D-LAB system SR eg. pump model D-LAB 34-8

Condensable components in the gas can be separated on the exhaust side of the pump in order to prevent their escape into the environment. On the suction side the Separator collects any particular matter and droplets. This protects the pump from contamination and ensures maximum continuous performance of the pump.

The Separator is made from specially treated glass and features implosion protection.

1.1.2 Vacuum Pump with Separator and High Performance Condenser (System SH)

The high performance Condenser enables condensable components in the vapour to be separated out and thereby removed from the atmosphere, at the same time protecting the environment.

The condensate is collected in a glass flask. The flask is

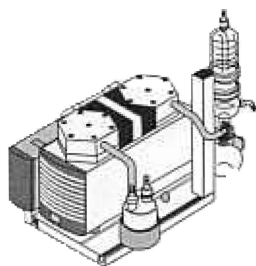


Figure 3: D-LAB system SH eg. pump model D-LAB 34-8

attached to the Condenser flange with a clamp. The condensation temperature is maintained by running cold water or recirculated coolant through the Condenser.

- ◆ The condenser must be installed on the outlet side of the pump; if it is installed on the inlet side there is a danger of implosion

.13 Vacuum Pump with Separator, High Performance Condenser and one Vacuum Controller (System SC)

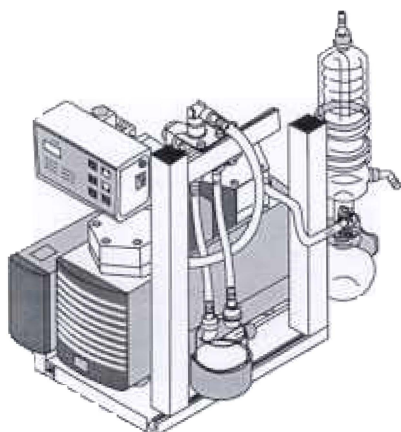


Figure 4: D-LAB System SC, eg. pump model D-LAB 34-8

Vacuum pumps in conventional laboratory systems operate continuously even after they reach their final vacuum level. D-LAB systems equipped with a Vacuum Controller enable the pump to be switched on and off between pre-set vacuum levels. Setting of the vacuum levels and differential pressure is via a keypad on the Vacuum Controller.

Features of the Vacuum Controller

- * Simple entry of the desired vacuum level and differential pressure.
- * Precise reproducibility of set values.
- * Facility to interrupt pumping program at any point.
- * The D-LAB system with Vacuum Controller automatically vents to atmosphere when switched off. This prolongs the operating life of the pump.
- * Easy venting of the system by touching the key pad.
- * One touch resetting from controlled pumping to maximum vacuum.
- * In the event of power failure the last entered values are retained.

.14 Vacuum Pump with Separator, High Performance Condenser and two Vacuum Controllers (system SCC)

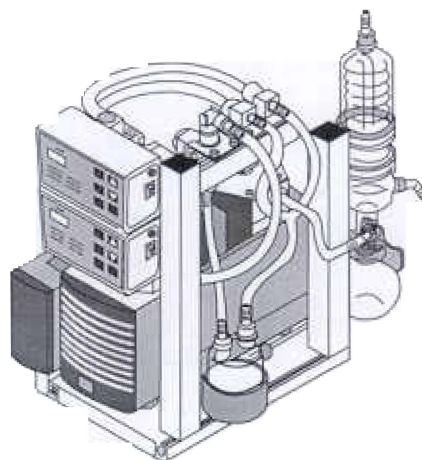


Figure 5: D-LAB system SCC, eg. pump model D-LAB 34-8

By adding a second Vacuum Controller two separate pumping applications may be carried out simultaneously and independently, using only one vacuum pump.

- ◆ Ensure that the gases evolved from both processes can safely be mixed.

2 General Safety Precautions

- ◆ Observe all applicable accident prevention regulations as well as generally recognised Health and Safety rules.
- * Parts of the casing marked with the sign opposite are only allowed to be opened after isolating the supply (disconnecting the power source). ...
- * Only authorized personnel should open those parts of the casing that contain live electrical parts.
- * Before using the D-LAB, carefully study the operating instructions. Avoid dangerous situations by observing the relevant instructions at all times.
- * Always keep the operating manual handy in the work area.
- * Before operation, ensure that the plastic plugs covering the inlet and outlet ports are removed.
- * Ensure that the pump system and its components are used only for those applications for which they were intended.
- * The equipment should only be connected to properly installed grounded outlets.
- * When cleaning the unit make sure that no fluids come into contact with the inside of the casing.
- * All pump models are fitted with protective thermal cut-outs. After operation of the thermal cutout or after a power failure the unit must be disconnected from the mains and then reconnected to reset the cut-out.
- * Do not operate the pump/D-LAB-system in an atmosphere containing explosive gases.
- * Use only original replacement parts.
- * Do not expose any part of your body to the vacuum.
- * Observe the specific safety precautions in section 4 of the Operating Instructions.

- * above.
- * Screw in the new diaphragm (do not overtighten).
Press the lip on the edge of the diaphragm into the groove in the housing.

Changing the Valve Plates

- * Unscrew the single screw in the top plate of one pump head.
- * Carefully remove the top plate; exposing the sealing rings and the valve plates.
- * Carefully remove old sealing rings and valve plates.
- * Insert new sealing rings and valve plates.
- * Reposition the top plate of the pump head.
Screw in the single screw in the centre of the pump top plate until it is flush with the top plate; then screw one final half turn to tighten (do not overtighten).
- * Repeat the above steps for the second pump head.

Refitting the Pump Head

- * Replace the pump head (note guide pin) and securely tighten screws in a crosswise pattern.
Reassemble interconnecting pipework connecting both pump heads.
- * Remount the pump to the Baseplate (if applicable).
Reconnect tubing.

If the pump does not reach the desired vacuum after changing diaphragms and/or valve plates:

- * Check whether the shim washers have been replaced onto the diaphragm screw thread.
- * Check the interconnecting pipework connection between both pump heads as well as the tubing for leaks. Possibly the screws on one of the pump heads (or both heads) are insufficiently tightened (carefully tighten them again crosswise).

8. Ordering Information

8. D-LAB Vacuum Pumps

Model	Order Number
D-LAB 10-100, 110V, 60Hz	
D-LAB 10-100, 220 - 240V, 50Hz	
D-LAB 10-100, 100V, 50/60Hz	
D-LAB 20-100, 110V, 60Hz	
D-LAB 20-100, 220 - 240V, 50Hz	
D-LAB 10-100, 100V, 50/60Hz	
D-LAB 34-100, 110V, 60Hz	
D-LAB 34-100, 220 - 240V, 50Hz	
D-LAB 10-100, 100V, 50/60Hz	
D-LAB 10-8, 110V, 60Hz	
D-LAB 10-8, 220 - 240Hz	
D-LAB 10-100, 100V, 50/60Hz	
D-LAB 20-8, 110V, 60Hz	
D-LAB 20-8, 220 - 240V, 50Hz	
D-LAB 10-100, 100V, 50/60Hz	
D-LAB 34-8, 110V, 60Hz	
D-LAB 34-8, 220 - 240V, 50Hz	
D-LAB 10-100, 100V, 50/60Hz	

8.2 Replacement Parts Service Set

Single Head Pumps

Service set includes 1 diaphragm, 2 sealing rings and 2 valve plates.

Pump	Order Number

Twin Head Pumps

Service set includes 2 diaphragms, 4 sealing rings and 4 valve plates.

Pump	Order Number

8.3 Accessories for the modular D-LAB - System

Item	Order Number
Baseplate	
D-LAB 10-100, 20-100, 10-8 and 20-8	A480-5/-34
D-LAB 34-100, and 34-8	A480-2 1-134
Vapour Trap*	
Gas Ballast control Valve	
D-LAB 10-100, 10-8	A480-1 5-135
D-LAB 20-100, 34-100, 20-8 and 34-8	A480-1 7-135
Vacuum Controller Complete Including Support Post & Electrical Supply Unit 220-240V, 50Hz	A480-5/-38
Vacuum Controller Complete Including Support Post & Electrical Supply Unit 100-1 10V, 50/60Hz	A480-15/-39
Electrical Supply Cable with IEC socket (for 220 - 240V)	
UK Three pin plug	AS0S-05-000
North European plug	AS0S-06-000
No plug	AS0S-08-000

9. Specifications

D-LAB 10-100

Maximum capacity:	10 l/min
Ultimate vacuum:	◆ 100 mbar abs
Maximum continuous pressure:	bar g (14.7 psi)
Permissible ambient temp:	+s ... +40 °C
Permissible temp. of gas to be pumped:	+5 ... +40 °C
Weight of pump:	5.9 kg

Electrical Specification			
Voltage (V)	110	115	230

Power Consumption Pump (W)

Fuse Pump (2x) T (A)	25	25	25
----------------------	----	----	----

D-LAB 20-1 00

Maximum capacity:	20 l/min
Ultimate vacuum:	± 100 mbar abs
Maximum continuous pressure:	bar g (14.7 psi)
Permissible ambient temp:	+5 ... +40 °C
Permissible temp. of gas to be pumped:	+5 ... +40 °C
Weight of pump:	71 kg

Electrical Specification			
Voltage (V)	100	115	230

50/60

Power Consumption Pump (W)

Fuse Pump (2x) T (A)	40	35	20
----------------------	----	----	----

D-LAB 34-100

Maximum capacity:	34 l/min
Ultimate vacuum:	± 100 mbar abs
Maximum continuous pressure:	bar g (14.7 psi)
Permissible ambient temp:	+5 ... +40 °C
Permissible temp. of gas to be pumped:	+5 ... +40 °C
Weight of pump:	103 kg

Electrical Specification			
Voltage (V)	100	115	230

Power Consumption Pump (W)

Fuse Pump (2x) T (A)	63	63	25
----------------------	----	----	----

D-LAB 10-8

Maximum capacity:	10 l/min
Ultimate vacuum:	± 8 mbar abs
Maximum continuous pressure:	bar g (14.7 psi)
Permissible ambient temp:	+5 ... +40 °C
Permissible temp. of gas to be pumped:	+5 ... +40 °C
Weight of pump:	69 kg

Electrical Specification			
Voltage (V)	100	115	230

Power Consumption Pump (W)

Fuse Pump (2x) T (A)	2.5/12	25	125
----------------------	--------	----	-----

D-LAB 20-8

Maximum capacity:	20 l/min
Ultimate vacuum:	± 8 mbar abs
Maximum continuous pressure:	bar g (14.7psi)
Permissible ambient temp:	+5 ... +40 °C
Permissible temp. of gas to be pumped:	+5 ... +40 °C
Weight of pump	93 kg

Electrical Specification			
Voltage (V)	100	115	230

Power Consumption Pump (W)

Fuse Pump (2x) T (A)			
----------------------	--	--	--

D-LAB 34-8

Maximum capacity:	41/min
Ultimate vacuum:	± 8 mbar abs
Maximum continuous pressure:	bar g (14.7psi)
Permissible ambient temp:	+5 ... +40 °C
Permissible temp of gas to be pumped:	+5 ... +40 °C
Weight of pump:	126 kg

Electrical Type			
Voltage (V)	100	115	230

Power Consumption Pump (W)

Fuse Pump (2x) T (A)	6.3	6.3	3.15
----------------------	-----	-----	------

9.2 Electrical Supply Unit

Electrical Type			
Voltage (V)	110	115	230

Power Consumption Pump (W)

Fuse Pump (2x) T (A)	6.3	6.3	3.15
----------------------	-----	-----	------

9.3 Vacuum Controller

Electrical Type			
Voltage (V)	100	115	230

Power Consumption Pump (W)

Fuse Pump (2x) T (A)	0.2	0.2	0.1
----------------------	-----	-----	-----

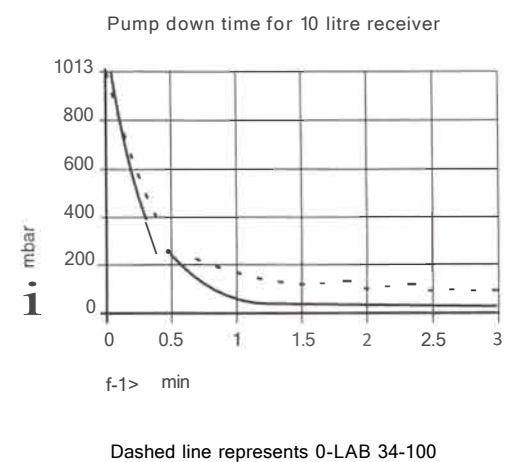
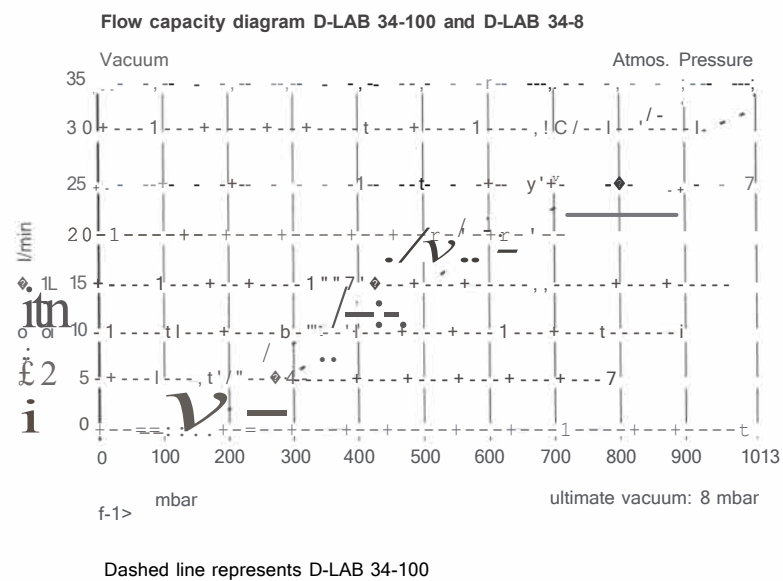
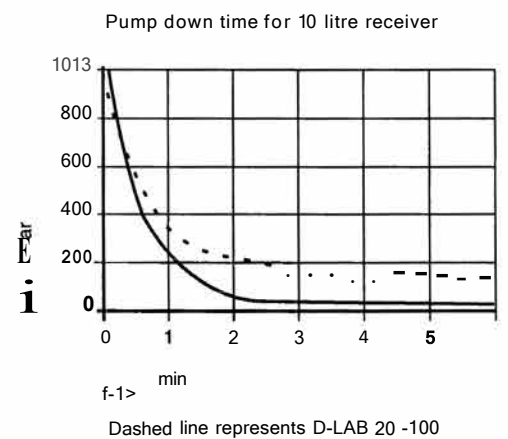
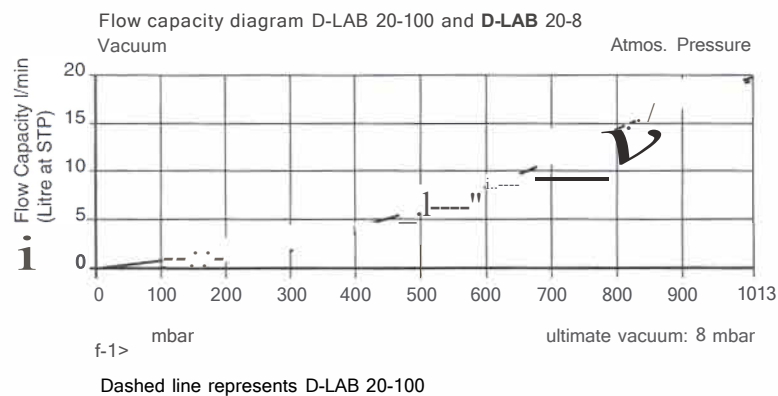
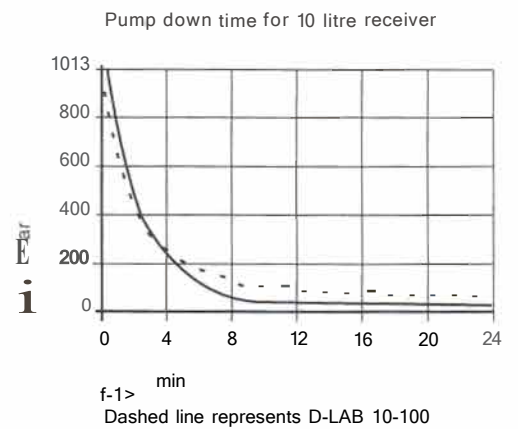
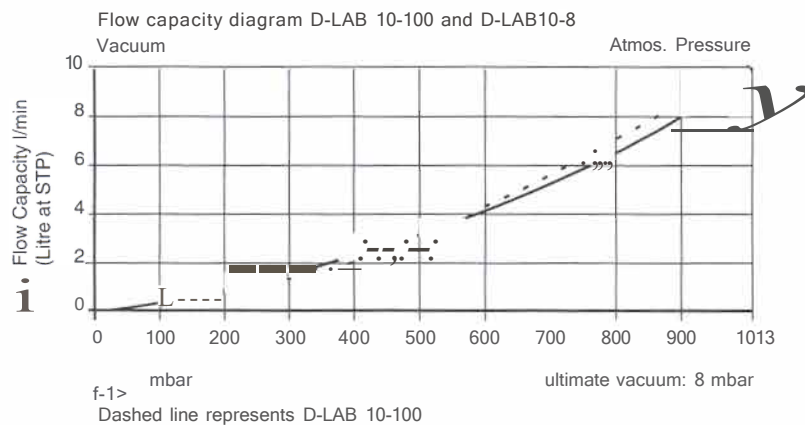
CE - Safety Requirements

The D-LAB pumps correspond to the safety regulations of the EG low voltage directive 73/23 EWG and of the EG directive concerning electromagnetic compatibility 89/336 EWG. The requirements of the following harmonised standards are fulfilled: EN 61010 part 1, EN 50082 part 1.

The pumps correspond to IEC 664:

- * The overload category II.
- * The pollution degree 2

10. Performance Graphs





По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижегород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: ewc@nt-rt.ru || сайт: <https://edwards.nt-rt.ru/>