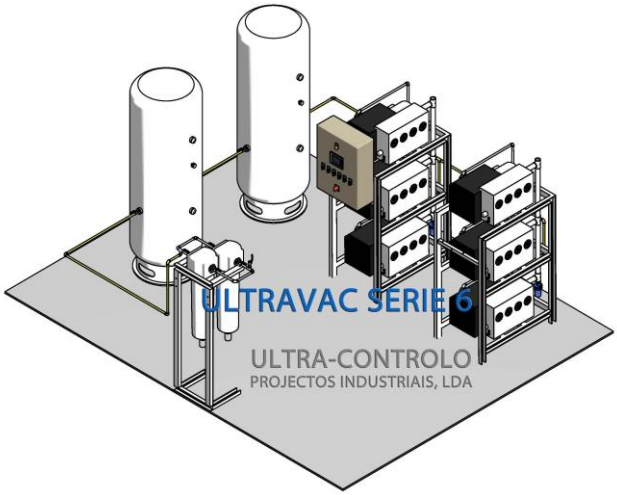
ULTRA CONTROLO INTERNATIONAL, LDA

Medical Vacuum System - ULTRAVAC® series 6
EN ISO 7396-1:2007
208V - 480V / 50Hz – 60Hz
HEXAPLEX

TECHNICAL SPECIFICATION

ULTRAVAC®

The ULTRAVAC® Medical Vacuum System shall conform to EN ISO 7396-1, and Technical Requirements shall conform to ACSS 03/2006. The Medical Vacuum System shall ensure the minimum pipeline vacuum level of 450mmHg is maintained at the plant service connection point at the rated volumetric 'free air' flow rate with one pump in standby. The bacteria filtration system shall be 'duplexed' such that each filter can be isolated for replacement of the filter cartridge. The vacuum flow rate should be assured by 4 pumps capable to guarantee 100% of the calculated to the installation, leaving 2 other pumps in standby.



Vacuum Pumps

Vacuum pumps shall be air-cooled, oil lubricated rotary vane type suitable for both continuous and frequent start/stop operation at nominal inlet vacuum levels of between 578mmHg and 728mmHg (between -0,77 and -0,97bar). Solid aluminum rotor blades shall be fitted to minimize the need for maintenance and shall be supplied with a 5-year or 30.000 hours of continuous service warranty. Rotor shall be driven by directly coupled TEFV electric motor with pin and bush couplings. Electric engines should meet the standard EN 60034-30 and be classified as IE2 or CT45. There are available versions with single-phase motor (between 208V and 255V) and three-phase motor (between 208V and 480V). Pump inlet shall include a wire mesh filter and integral non-return valve to prevent oil suck back and pressure increases in the vacuum system. An integral gas ballast valve shall be fitted to filter atmospheric air, preventing oil emulsification and ensuring a high water vapor tolerance.
The vacuum pump shall have oil separators cartridges mounted outside of the oil separator housing for easy replacement. The oil separator system shall have three separation stage filtration to ensure a virtually oil-free exhaust. The pump shall be fitted with anti-vibration pads between the pump foot and mounting frame. It is intended to ensure that the pumps have no oil leaks or who may have grinded threads, preventing their Stop with consequent breakdown of system redundancy and increased costs for repairs. Each pump should come equipped with respective check valve and isolating valve. The suction capacity and the curve of flow / pressure characteristics must follow the PNEUROP's standards and the effective pump flow calculated at normal operating temperature.

Bacteria Filters

The duplexed bacteria filter system shall incorporate high efficiency filter element. A differential vacuum indicator shall be installed across the filter to indicate blockage. Additional pressure sensors shall be available to be installed at the inlet and outlet of the filter to measure the pressure drop across the filters.

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Each filter shall be designed and sized to carry the full plant design flow capacity with a pressure drop not exceeding 30mbar (24mmHg). Bacteria Filter elements shall have penetration levels not exceeding 0.005% when tested by the sodium flame method in accordance with BS 3928:1969 and utilizing particles in the 0.02 to 2 micron size range. Drain flask shall be connected to the filter. Drain flask shall be manufactured from transparent Pyrex®. The drain flask shall be suitable for sterilization and be connected via a manual isolating valve.

Control System

The control system shall be able to work as stand alone unit or through central control system. In case a central control system it shall provide an intelligent human machine interface incorporating on board flash memory and real-time clock for recording operational parameters in the in built event log. The central control system shall operate at low voltage and include BMS connection for common fault. Visualization of plant inputs, outputs and status through a web browser, using a simple Ethernet connection shall be available. The central control unit shall incorporate a user friendly 5.7" high-definition color display with clear pictograms and touch screen communication and light indicators, providing easy access to system operational information.
Cascading of vacuum pumps shall be achieved by measuring the vacuum level at the plant inlet with a pressure transducer. A mechanical back-up facility shall ensure continued operation in the event of a control system malfunction. The control system shall normally employ automatic rotation of the lead pump to maximize pump life and ensure even wear. The control system shall be able to record at least one year of all events occurred in the system and transfer the data to a computer. The system shall be able to anticipate maintenance information providing alerts to the technical staff.

Optional Control Equipment

An advanced monitoring system through ModBus or ProfiBus communication shall be available to give immediate access to valuable information such as system status, trends, historical data and system performance. Data collected from all pumps shall be made available in real-time visualization pages and shall be accessed through the hospital's LAN, such that total data security is assured.
The QuVAC monitoring system shall also include :

- Logging and trending for an accurate performance status of your system.
- Remote access via Ethernet
- Desktop event notification to avoid constant status checking.
- E-mail and SMS event notification for additional convenience.

Vacuum Receiver(s)

Vacuum receiver(s) shall be supplied with relevant test certificates and have a total volume of at least 100% of the plant output in 1 minute in terms of free air aspired at normal working pressure. Pyrex® is a registered trademark of Corning Glass.
The receivers should preferably be hot dip galvanized, with primary treatment and finish in epoxy painting. The system should possess additional connections available and free for connecting emergency groups.

Condensate Collector

The medical vacuum plant shall be equipped with one or more condensate collectors and shall have a transparent flask for easy inspection and service.

CE Marking

The standard range of Ultra Controlo Medical Vacuum plant systems are 'CE' marked under the Medical Devices Directive 93/42/EEC with approval from notified body no. 0120 (SGS-UKAS). Under this directive, the specified products are classified as Class IIb Medical Devices.

Basic composition of ULTRAVAC®, series 6:

6 Vacuum pump rotary vane oil lubricated
2 Vacuum tank
2 Bacterial filters with shutoff valves
1 Electrical Control panel. Optional: with digital control system QuVAC
1 Cup condensation drain

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Due to the continuous improvement of our products, the right is reserved to change the specification of the items described herein at any time. Please contact us for further information and up to date specifications.

Medical Vacuum System - ULTRAVAC®
EN ISO 7396-1
200V - 480V / 50Hz
HEXAPLEX

ULTRAVAC						
400V 50Hz						
Model	**System capacity**			**Electric power** (per unit)		**Article Number**
	l/m	**l/s**	**scfm**	**Kw**	**hP**	
6.10/200	666,67	11,111	23,5	0,4	0,5	300.01.00500
6.15/200	1000	16,667	35,3	0,6	0,75	300.01.00501
6.15/300	1000	16,667	35,3	0,6	0,75	300.01.00502
6.20/300	1333,3	22,222	47	0,8	1	300.01.00503
6.25/500	1666,7	27,778	58,8	0,8	1	300.01.00504
6.50/500	3333,3	55,556	118	1,3	1,75	300.01.00505
6.75/500	4666,7	77,778	165	1,9	2,5	300.01.00506
6.100/800D	7333,3	122,22	259	2,2	3	300.01.00507
6.100/1000	7333,3	122,22	259	2,2	3	300.01.00508
6.150/800D	10000	166,67	353	3	4	300.01.00509
6.150/1000	10000	166,67	353	3	4	300.01.00510
6.200/800D	13333	222,22	470	4	5,5	300.01.00511
6.200/1000D	13333	222,22	470	4	5,5	300.01.00512
6.200/1500	13333	222,22	470	4	5,5	300.01.00513
6.300/1000D	20000	333,33	706	5,5	7,5	300.01.00514
6.300/2000	20000	333,33	706	5,5	7,5	300.01.00515
6.400/1500D	26667	444,44	941	9	12	300.01.00516
6.400/1000T	26667	444,44	941	9	12	300.01.00517
6.500/2000D	36667	611,11	1294	11	15	300.01.00518
6.700/2000T	46667	777,78	1646	15	20	300.01.00519
6.900/2000T	55333	922,22	1952	19	25	300.01.00520
6.1100/2000Q	73333	1222,2	2587	30	40	300.01.00521
6.1300/2000P	85333	1422,2	3011	30	40	300.01.00522

D- with 2 tanks T- with 3 tanks Q– with 4 tanks P- with 5 tanks
To single-phase engine versions the tension range is between 208V – 255V, to 50Hz

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Medical Vacuum System - ULTRAVAC®
EN ISO 7396-1
200V - 480V 60Hz
HEXAPLEX

ULTRAVAC						
380V 60Hz						
Model	**System capacity**			**Electric power** (per unit)		**Article Number**
	l/m	**l/s**	**scfm**	**Kw**	**hP**	
6.10/200	800	13,333	28,2	0,4	0,8	300.01.01100
6.15/200	1200	20	42,3	0,7	1	300.01.01101
6.15/300	1200	20	42,3	0,7	1	300.01.01102
6.20/300	1600	26,667	56,4	0,9	1	300.01.01103
6.25/500	1746,7	29,111	61,6	0,9	1	300.01.01104
6.50/500	4000	66,667	141	1,5	2	300.01.01105
6.75/500	5600	93,333	198	2,2	3	300.01.01106
6.100/800D	8000	133,33	282	2,6	4	300.01.01107
6.100/1000	8000	133,33	282	2,6	4	300.01.01108
6.150/800D	12000	200	423	3,6	5	300.01.01109
6.150/1000	12000	200	423	3,6	5	300.01.01110
6.200/800D	16000	266,67	564	5,5	7,5	300.01.01111
6.200/1000D	16000	266,67	564	5,5	7,5	300.01.01112
6.200/1500	16000	266,67	564	5,5	7,5	300.01.01113
6.300/1000D	24000	400	847	7,5	10	300.01.01114
6.300/2000	24000	400	847	7,5	10	300.01.01115
6.400/1500D	32000	533,33	1129	11	15	300.01.01116
6.400/1000T	32000	533,33	1129	11	15	300.01.01117
6.500/2000D	44000	733,33	1552	13	18	300.01.01118
6.700/2000T	56000	933,33	1976	18	25	300.01.01119
6.900/2000T	66333	1105,6	2340	22	30	300.01.01120
6.1100/2000Q	88000	1466,7	3105	36	50	300.01.01121
6.1300/2000P	102333	1705,6	3610	36	50	300.01.01122

D- with 2 tanks T- with 3 tanks Q– with 4 tanks P- with 5 tanks
To single-phase engine versions the tension range is between 208V – 255V, to 60Hz