

6 **Root's Blower Vacuum Pumps** **Oerlikon Leybold Blower Packages**

Root's Blowers **RUTA Vacuum Systems** **Introduction**

Ideal Vacuum Products is proud to supply Oerlikon Leybold RUTA Root's blower vacuum systems and when at all possible, we strive to ship our stocked inventory of vacuum pump systems within 24-hours of your order. Root's blower systems are the vacuum workhorse of many industrial applications and research systems. The reasoning is that the Root's blower super-charges the roughing pump, which greatly increases the vacuum systems pumping speed, below the 10 Torr pressure range.

On the atmosphere pressure side the vacuum systems pumping speed is more close to the pumping speed for the single independent roughing pump, but as the pressure in the system falls the Root's blower really increases the vacuum systems pumping speed. The pumping speed approaches the maximum pumping speed of the blower near 1 Torr.

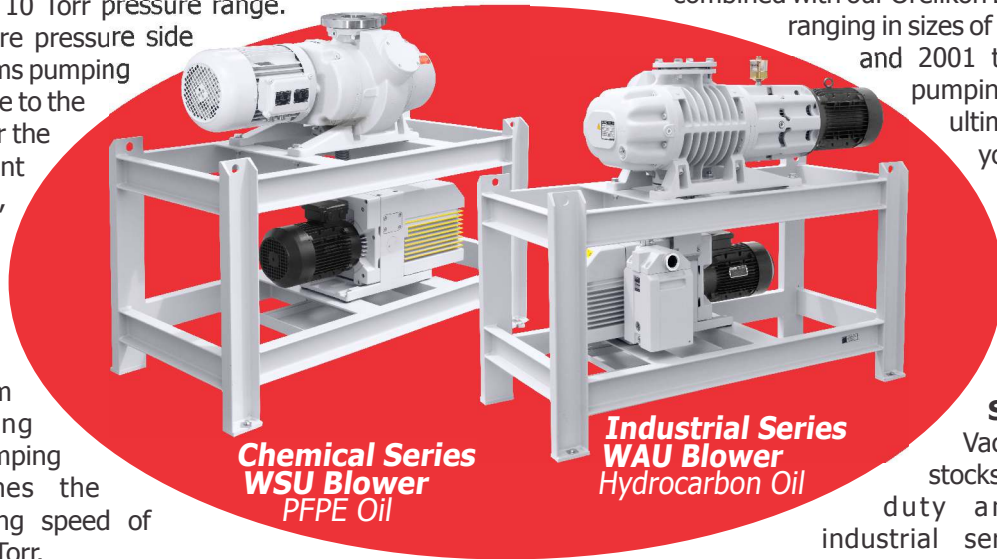
The ultimate pressure of a vacuum pump system depends on the number of stages it has, this is the reason our Oerlikon Leybold RUTA vacuum pump packages have a lower ultimate pressure than the single independent roughing vacuum pump. Final pressures of 1×10^{-4} Torr or lower are common. We carry single pump blowers as replacements and complete system packages with a blower and roughing pump. They can be built for standard pumping processes with hydrocarbon oil or for processes pumping harsher chemical gases which require PFPE oils. These mechanical vacuum systems are very durable & long lasting with easy preventive maintenance (PM), only requiring oil & oil filter changes.

Options to Choose from:

We stock Oerlikon Leybold RUTA Root's blower vacuum system packages that have maximum pumping speed ranging from 125 to 1,000 CFM, with single or dual stage backing pumps built from rotary vane or rotary piston technology.

Large Range of Pumping Speeds to Choose From:

Backing pumps as small as the Oerlikon Leybold D40B (33 CFM - dual stage) to as large as the SV630B (massive 444 CFM - single stage) are available on our Root's blower vacuum pump systems. These roughing pumps can be combined with our Oerlikon Leybold blowers ranging in sizes of 251, 501, 1001, and 2001 to produce the pumping speed and ultimate pressures you require.



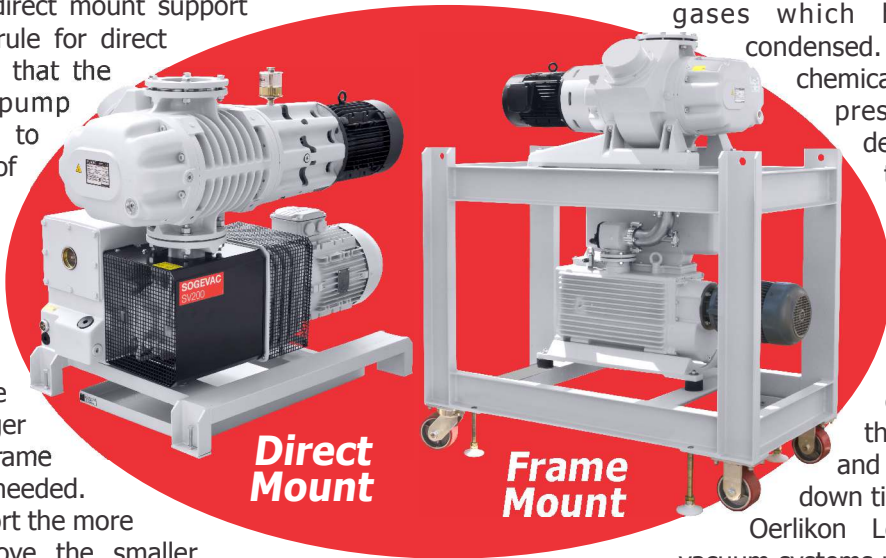
Available in Corrosive or Standard Industrial Systems:

Ideal Vacuum Products stocks both corrosive duty and standard industrial service Oerlikon Leybold RUTA Root's blower vacuum pump system packages. The standard industrial vacuum pump systems, are equipped with WAU blowers, and use standard hydrocarbon oil. The corrosive duty vacuum pump systems, typically come with WSU blowers, and use PFPE (perfluoro-polyether) oils, such as Fomblin fluids. PFPE is chemically inert and is therefore resistant to oxidizing agents, such as Fluorine (F) and Chlorine (Cl) and is used in vacuum pumping systems with chemical applications. These properties enable the PFPE fluid to withstand even the most harsh chemical environments while maintaining excellent high vacuum performance. We carry both hydrocarbon and PFPE oils.

Root's Blowers

RUTA Vacuum Systems

Frame or Direct Mount: We offer Oerlikon Leybold RUTA vacuum systems that have either frame mounted or direct mounted Root's blowers. With direct mounted, the blower is supported directly on top of the lower roughing pump with a solid direct mount support adapter. The basic rule for direct mounted systems is that the lower roughing pump needs to be able to support the mass of the upper blower. That is, direct mounted RUTA systems have an upper limit on the maximum blower size that can be connected. If a larger blower is desired a frame mounted system is needed. The frame can support the more massive blower above the smaller roughing pump. The advantages are that direct mounted RUTA systems are more compact having the lowest height to blower intake flange. The frame mounted systems are taller but very robust.



RUTA Pump Systems with Condensers: If the vacuum systems must pump larger quantities of vapor or of vapor gas mixtures, it is economical to insert cold condensers within the pump system. Cooled condensers are themselves effective partial pumps which condense most of the vapors from the pumped media. The downstream mechanical pumps will then only need to pump those gases which have not already condensed. The quantity and chemical properties of vapor present in each case determines the size of the condenser and the temperature at which it is operated. The size of the downstream pump is determined by the quantity of the non-condensable gases, the required pressure, and the required pump-down time for the system. All Oerlikon Leybold RUTA series vacuum systems may be equipped with one or several condensers. These are often used in the chemical industry where RUTA vacuum pump systems with condensers are not only used to generate vacuum but they are often employed in recovery of solvents.

RUTA Pump Systems for Metal Producing and The Processing Industry: In common vacuum furnace processes such as hardening, annealing, brazing, melting, and casting, oil-sealed or dry compressing standard vacuum pump systems are commonly used. The oil-sealed systems consist of a combination of a Root's vacuum pump and a single or two stage rotary vane or rotary piston pump. On small furnaces RUTA WAU blowers vacuum systems are the most suitable because these may be cut in at the higher operating pressure, while on larger furnaces and particularly where short pump-down cycles are required the use of larger RA series blowers with suitable sized backing pumps is advisable. For special processes, e.g. fusion or degassing of molten masses, due to the high dust contents, the additional use of a dust separator is required as well as equipping the backing pumps with oil filtering units.

Applications:

- Industry
- Research & Chemistry
- Processes for metal production and drying
- Degassing
- Thermal Treatment
- Coating in semi conductor manufacturing
- Surface refinement
- Backing pump sets for high vacuum in combination with diffusion pumps, turbomolecular and cryo pumps

* Catalog Pricing
Subject to Change

6 **Root's Blower Vacuum Pumps** **Oerlikon Leybold Blower Pumps**

Root's Blowers

Stand Alone Replacement Blowers *(must be used with a roughing pump)*

Difference between WSU and WAU blowers: One major difference between the WSU and WAU Root's blowers is that the WSU blowers are hermetically sealed and have a canned motor. They do not have a shaft seal, the motor is inside the vacuum so no shaft seal is needed. The hermetically sealed property is important for harsh chemical applications where the WSU PFPE prepared blowers are commonly found. The standard series WAU blowers are not hermetically sealed, have the motor outside the vacuum, and do contain a shaft seal. We are excited to announce that both the RUTA WAU & WSU pumps can be operated at any pressure between atmosphere and ultimate vacuum! Common to all RUTA "U" series blowers WAU & WSU have the integrated bypass valve feature which permits switching on the blower pump at the same time as the backing pump.

The bypass valve maintains the maximum permissible pressure differential across the blower rotors. This is important when the vacuum chamber pressure is high and the roughing pump is unable to keep the blower's discharge pressure adequately low. The gain is additional pumping speed and shorter cycle times. This is an edge advantage to load lock applications and time critical processes. The WS and WA (versions without the bi-pass valve) are available but require additional electronics and control systems to turn the blower motor off above 20 Torr. If your application's needs are WS or WA pumps, please let us know and we will quote the best stand alone blower or system for your process.

WSU vs. WAU **BLOWERS**

WSU

Hermetically sealed, canned motor, no shaft seal, best for harsh chemical processes. Prepared for PFPE oils.

WAU

Has shaft seal, not hermetically sealed, best for standard industrial processes. Prepared for hydrocarbon oils.



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Oerlikon Leybold Blower Packages

Oerlikon Leybold Root's Blower Booster Packages

Chemical or Standard Systems With **MASSIVE** Pumping Speeds

RUTA Vacuum Systems Ideal Vacuum Products is proud to supply Oerlikon Leybold RUTA Root's blower vacuum systems and when at all possible, we strive to ship our stocked inventory of vacuum pump systems within 24-hours of your order. Root's blower systems are the vacuum workhorse of many industrial applications and research systems. The reasoning is, that the Root's blower super-charges the roughing pump, which greatly increases the vacuum systems pumping speed, below the 10 Torr pressure range. On the atmosphere pressure side the vacuum systems pumping speed is more close to the pumping speed for the independent roughing pump, but as the pressure in the system falls the Root's blower really increases the vacuum systems pumping speed. The pumping speed approaches the maximum pumping speed of the blower near 1 Torr. The ultimate pressure of a vacuum pump system depends on the number of stages it has, this is the reason our Oerlikon Leybold RUTA vacuum pump packages have a lower ultimate pressure than the independent roughing pump, final pressures of 1×10^{-4} Torr or lower are common. These mechanical vacuum systems are very durable & long lasting with easy preventive maintenance (PM), only requiring oil & oil filter changes.

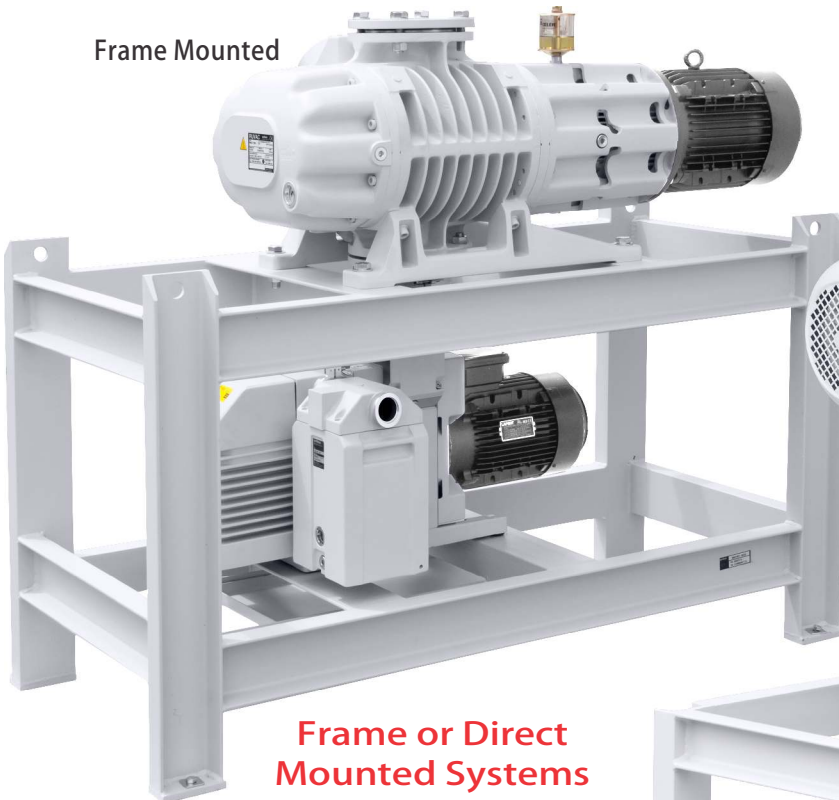
Features Include:

- Ultimate pressures down to 1×10^{-4} Torr (with dual stage roughing pump)
- Sizes from 100 to 1100 CFM
- Available for Chemical or Standard Applications
- Frame, Direct Mount, and Mobile for each version
- WSU Blowers (hermetically sealed, no shaft seals)
- WAU Blowers (shaft seals, motor outside)
- "U" Series blowers (bypass valve, switch blower & backing pump on at same time, gain of better pumping speed & shorter cycle times)

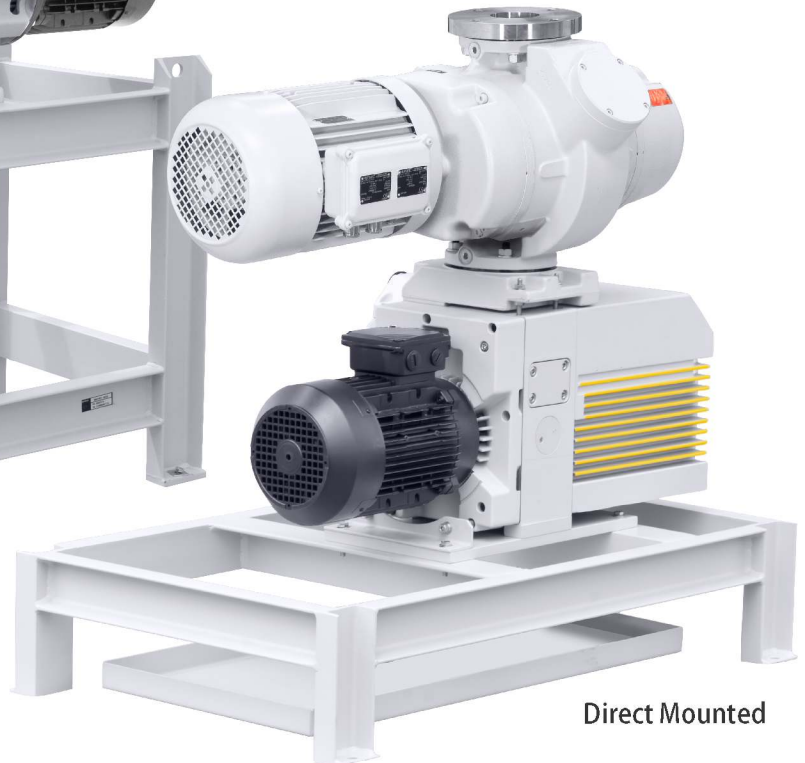
Applications Include:

- Industry, Research & Chemistry
- Processes for Metal Production
- Drying & Degassing, Thermal Treatment
- Coating in Semiconductor Manufacturing
- Vacuum Furnace Processes
- Backing Pump Sets for High Vacuum in Combo with Diffusion, Turbomolecular or Cryo Pumps

Frame Mounted



Frame or Direct Mounted Systems Available with Heavy Duty Wheels For Mobile Operations



Direct Mounted

* Catalog Pricing Subject to Change

6 Root's Blower Vacuum Pumps Derlikon Leybold Blower Packages

Derlikon Leybold Root's Blower Booster Packages Direct Mounted or Frame Mounted

IDEAL P/N	Mount	Blower Booster	With Roughing Vacuum Pump	CFM	Connection Flanges In/Out	OIL	Price*
P105271	Direct Mount Skid	RUVAC WSU-251	TriVac D40BCS	142	63 ISO-K / 40 ISO-KF	(1)	\$23,000.00
P105296	"	RUVAC WSU-501	TriVac D40BCS	262	63 ISO-K / 40 ISO-KF	(1)	\$23,995.00
P105272	"	RUVAC WSU-251	TriVac D65BCS	148	63 ISO-K / 40 ISO-KF	(1)	\$23,995.00
P105273	"	RUVAC WSU-501	TriVac D65BCS	269	63 ISO-K / 40 ISO-KF	(1)	\$26,995.00
P105269	Direct Mount Mobile	RUVAC WSU-251	TriVac D40BCS	142	63 ISO-K / 40 ISO-KF	(1)	\$22,995.00
P105270	"	RUVAC WSU-501	TriVac D40BCS	262	63 ISO-K / 40 ISO-KF	(1)	\$23,995.00
P105268	"	RUVAC WSU-251	TriVac D65BCS	148	63 ISO-K / 40 ISO-KF	(1)	\$23,995.00
P105267	"	RUVAC WSU-501	TriVac D65BCS	269	63 ISO-K / 40 ISO-KF	(1)	\$26,995.00
P105293	Frame Mount	RUVAC WSU-251	TriVac D40BCS	142	63 ISO-K / 40 ISO-KF	(1)	\$23,495.00
P105289	"	RUVAC WSU-501	TriVac D40BCS	262	63 ISO-K / 40 ISO-KF	(1)	\$23,495.00
P105290	"	RUVAC WSU-251	TriVac D65BCS	148	63 ISO-K / 40 ISO-KF	(1)	\$23,995.00
P105291	"	RUVAC WSU-501	TriVac D65BCS	269	63 ISO-K / 40 ISO-KF	(1)	\$26,995.00
P105321	"	RUVAC WSU-1001	TriVac D65BCS	438	100 ISO-K / 40 ISO-KF	(1)	\$29,995.00
P105292	"	RUVAC WSU-2001	TriVac D65BCS	739	160 ISO-K / 40 ISO-KF	(1)	\$34,995.00
P105277	Frame Mount Mobile	RUVAC WAU-1001	Rotary Piston DK-200	576	100 ISO-K / 63 ISO-K	(2)	\$37,895.00
P105274	"	RUVAC WAU-2001	Rotary Piston DK-200	950	160 ISO-K / 63 ISO-K	(2)	\$39,950.00
P105276	"	RUVAC WAU-1001	Rotary Piston E250	565	100 ISO-K / 63 ISO-K	(2)	\$37,995.00
P105275	"	RUVAC WAU-2001	Rotary Piston E250	954	160 ISO-K / 63 ISO-K	(2)	\$39,995.00
P105434	Direct Mount Skid	RUVAC WAU-251	Sogevac SV100B	161	63 ISO-K / 1 1/2" NPT	(2)	\$14,600.00
P105435	"	RUVAC WAU-501	Sogevac SV100B	270	63 ISO-K / 1 1/2" NPT	(2)	\$17,600.00
P105436	"	RUVAC WAU-251	Sogevac SV200	205	63 ISO-K / 2" NPT	(2)	\$15,995.00
P105437	"	RUVAC WAU-501	Sogevac SV200	258	63 ISO-K / 2" NPT	(2)	\$16,995.00
P105438	"	RUVAC WAU-1001	Sogevac SV200	505	100 ISO-K / 2" NPT	(2)	\$18,995.00
P105439	"	RUVAC WAU-501	Sogevac SV300B	380	63 ISO-K / 2" NPT	(2)	\$19,995.00
P105440	"	RUVAC WAU-1001	Sogevac SV300B	516	100 ISO-K / 2" NPT	(2)	\$23,375.00
P105441	"	RUVAC WAU-2001	Sogevac SV300B	1020	160 ISO-K / 2" NPT	(2)	\$26,995.00
P105442	"	RUVAC WAU-1001	Sogevac SV630B	552	100 ISO-K / 100 ISO-K	(2)	\$31,995.00
P105443	"	RUVAC WAU-2001	Sogevac SV630B	1194	160 ISO-K / 100 ISO-K	(2)	\$33,995.00
P105278	Direct Mount Mobile	RUVAC WAU-251	TriVac D40B	142	63 ISO-K / 40 ISO-KF	(2)	\$18,200.00
P105279	"	RUVAC WAU-501	TriVac D40B	262	63 ISO-K / 40 ISO-KF	(2)	\$19,450.00
P105280	"	RUVAC WAU-251	TriVac D65B	148	63 ISO-K / 40 ISO-KF	(2)	\$19,450.00
P105281	"	RUVAC WAU-501	TriVac D65B	269	63 ISO-K / 40 ISO-KF	(2)	\$19,995.00
P105294	Direct Mount Skid	RUVAC WAU-251	TriVac D40B	142	63 ISO-K / 40 ISO-KF	(2)	\$19,200.00
P105284	"	RUVAC WAU-501	TriVac D40B	262	63 ISO-K / 40 ISO-KF	(2)	\$20,450.00
P105282	"	RUVAC WAU-251	TriVac D65B	148	63 ISO-K / 40 ISO-KF	(2)	\$20,450.00
P105283	"	RUVAC WAU-501	TriVac D65B	269	63 ISO-K / 40 ISO-KF	(2)	\$20,995.00
P105287	Frame Mount	RUVAC WAU-251	TriVac D40B	142	63 ISO-K / 40 ISO-KF	(2)	\$19,200.00
P105288	"	RUVAC WAU-501	TriVac D40B	262	63 ISO-K / 40 ISO-KF	(2)	\$20,200.00
P105295	"	RUVAC WAU-251	TriVac D65B	148	63 ISO-K / 40 ISO-KF	(2)	\$20,200.00
P105285	"	RUVAC WAU-501	TriVac D65B	269	63 ISO-K / 40 ISO-KF	(2)	\$21,200.00
P105266	"	RUVAC WAU-1001	TriVac D65B	438	100 ISO-K / 40 ISO-KF	(2)	\$23,950.00
P105286	"	RUVAC WAU-2001	TriVac D65B	739	160 ISO-K / 40 ISO-KF	(2)	\$26,995.00



(1) Chemical Series Pumps prepared for Chemical Processes, Use PFPE Inert Oil
 (2) Standart Series Pumps prepared for Standard Processes, Use Hydrocarbon Oil

ALL Packages are 3 phase 200-230 or 440-480 VAC input power

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Oerlikon Leybold Blower Pumps

Oerlikon Leybold

Blowers **ONLY** Stand Alone Units

Pump Models Ruvac WAU Standard Series

Prepared for Hydrocarbon LVO-100 Oil and 3 phase 200-240/380-480 VAC 60hz. Motors

Ruvac WAU Booster Blower Pumps	Connection Flange	Ultimate Total Pressure Torr	Max. effective pumping speed with backing pump (CFM)	Nominal Pump Speed CFM	IDEAL VACUUM P/N	Price*
WAU-251	63 ISO-K	6×10^{-4}	D65B (148)	179	P105162	\$9,500.00
WAU-501	63 ISO-K	6×10^{-4}	SV200 (312)	357	P105163	\$12,500.00
WAU-1001	100 ISO-K	6×10^{-4}	SV300 (588)	707	P105164	\$16,500.00
WAU-2001	160 ISO-K	6×10^{-4}	SV630 (1236)	2100	P105165	\$21,000.00

Pump Models Ruvac WSU CHEMICAL Series

Prepared for PFPE LVO-400 Oil and 3 phase 200-240/380-480 VAC 60hz. Motors

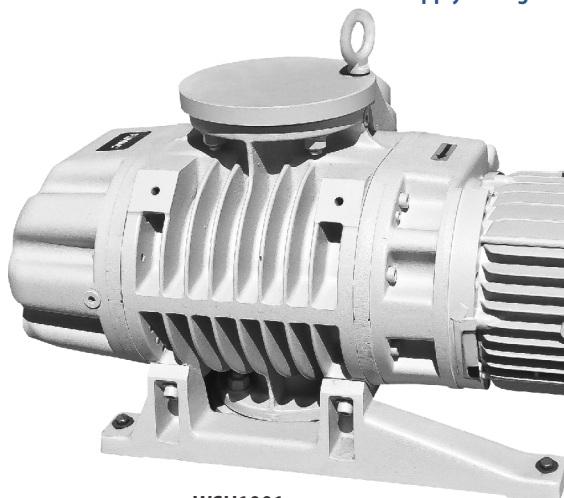
Ruvac WSU Booster Blower Pumps	Connection Flange	Ultimate Total Pressure Torr	Max. effective pumping speed with backing pump (CFM)	Nominal Pump Speed CFM	IDEAL VACUUM P/N	Price*
WSU-251	63 ISO-K	6×10^{-4}	D65BCS (148)	179	P105155	\$12,000.00
WSU-501	63 ISO-K	6×10^{-4}	SV200 (312)	357	P105156	\$15,000.00
WSU-1001	100 ISO-K	6×10^{-4}	SV300 (588)	707	P105142	\$24,500.00
WSU-2001	160 ISO-K	6×10^{-4}	SV630 (1236)	2100	P105157	\$25,500.00

Pump Models Ruvac WSU Standard Series

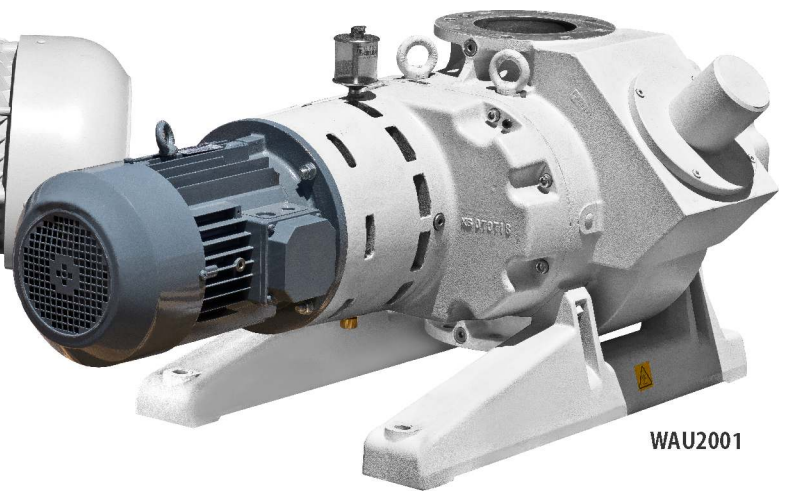
Prepared for Hydrocarbon LVO-100 Oil and 3 phase 200-240/380-480 VAC 60hz. Motors

Ruvac WSU Booster Blower Pumps	Connection Flange	Ultimate Total Pressure Torr	Max. effective pumping speed with backing pump (CFM)	Nominal Pump Speed CFM	IDEAL VACUUM P/N	Price*
WSU-251	63 ISO-K	6×10^{-4}	D65B (148)	179	P105158	\$11,000.00
WSU-501	63 ISO-K	6×10^{-4}	SV200 (312)	357	P105159	\$14,600.00
WSU-1001	100 ISO-K	6×10^{-4}	SV300 (588)	707	P105160	\$18,500.00
WSU-2001	160 ISO-K	6×10^{-4}	SV630 (1236)	2100	P105161	\$23,000.00

Electrical Supply Voltage for all these Booster Blowers is 3 phase 60hz. 200-240/380-480 VAC



WSU1001



WAU2001

* Catalog Pricing
Subject to Change

* Catalog Pricing
Subject to Change