

Equipment Information



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1 Description and key features

1.1 Description

The CRYOVAC® VSA is a brand new, fully automatic vacuum packaging machine suitable for a wide range of fresh red meat industrial units. Based on the chamber belt machine principle, it has been designed for production in conjunction with fully automatic OSB™ loaders.

The machine is basically made up of six modules; the transfer conveyor, the infeed conveyor and the infeed shuttle (managing the transport and the positioning of the products), the vacuum chambers module (packing the products and comprising two or three chambers on top of each other), the outfeed shuttle and the outfeed conveyor (ensuring the product discharge).

The machine can be fed with products in two modes; an automatic feeding mode where the products, correctly oriented and spaced, enter the machine automatically one-by-one; or in manual feeding mode, where the products being previously grouped and positioned manually, enter the machine as a batch. When sufficient products have accumulated on the infeed conveyor, the products are transferred onto the shuttle. The shuttle then moves up or down to the level of the first available vacuum chamber conveyor, and after moving slightly forward to fill the gap between the conveyors, the products are fed further onto the vacuum chamber conveyor which in turn rises into the chamber. The package is pre-cut, vacuumized and sealed. After cooling and cutting off the bag excess, the pressure in the chamber is then increased to atmosphere, the chamber conveyor lowers and the packed products are discharged onto the waiting shuttle conveyor which in turn transfers them onto the outfeed conveyor.

The VSA is controlled by a PLC (programmable logic control) system which monitors and sequences each phase of the machine during operation. It incorporates several recipes with parameters that can be customised to suit particular requirements. Programming is simple and made via a touchscreen control panel. A line supervisor is required to observe the loading, vacuum and shrink units.

Construction is simple and robust. All critical parts are treated against the corrosive environment often found in food production and packaging rooms. Designed with ergonomics safety and hygiene in mind it is easy to use and clean, simple to maintain and meets all relevant European legislation for safety and hygiene.

1.2 Key features

- Automatic machine, requiring only a line supervisor when using OSB™ bags, or 1 - 2 operators for feeding when using traditional Cryovac® bags (when using traditional Cryovac® bags only batch (manual) mode is available and the machine capacity is reduced, each bag having to be separated)
- Userfriendly operator interface, full colour touchscreen control panel with Windows-CE operating system
- Controlled by a Siemens S7 PLC and Profibus
- Equipped with 2 chambers and 1 pump or 3 chambers and 2 pumps, offering the most rationalised and cost-effective packaging solution. Can achieve from 4.9 up to 7.7 cycles per minute, delivering from 9.8 (4.9 x 2) up to 31 (7.7 x 4) ppm of FRM, depending upon the number of chambers, products and vacuum pump sizes
- Each chamber is equipped with 1 mono-active Ultraseal® sealing system, final cutting and trim removal system
- Integrated vacuum booster pump with frequency inverter
- Active safety devices and a category 2 fail safe control system combine to provide a state of the art safety system
- Hygienic design makes cleaning easy and effective
- All belts can be removed for cleaning without the use of tools
- Very good access for maintenance
- Robust, high quality build standard using food approved materials throughout

3 Nominal Technical data

3.1 Machine dimensions


Length, width & height See machine layout

3.2 Weight


Weight gross 5550 kg approx. with all modules assembled
 (see layout for each module)
 See machine layout for each module 5t forklift necessary.

3.3 Utilities


3.3.1 Compressed air

	Air type	Clean and dry
	Pressure	6 bar
	Consumption	25 m ³ /h maximum for the VSA312
	Connecting fitting / supply pipe diameter	Hose fitting 3/4" / 19 mm I/D

3.3.2 Electrical

	Voltage	400 V
	No. of phases	3 + earth
	Frequency	50 Hz
	Wiring	4 x 10 mm ²
	Installed power	20 kW approx. without booster 3 kW per booster (1 or 2)
	Current protection	40 A delayed action type
	Residual-current circuit breaker	Minimum fail current 100 mA recommended - Möller F7-40/4/01-U

3.3.3 Vacuum

	Configuration 1 group	Busch RA 630 B pump (11 kW) + integrated WP1250D booster (Busch RA 1000 B pump may be used, refer to Kriens)
	Configuration 2 groups	Twice one of the above described configurations

3.4 Working characteristics

3.4.1 Product dimensions

Length	760 mm max.
Height	220 mm max.
Width	400 mm max. (auto mode)
Weight	250 g min. product weight, 60 kg max. total per conveyor

3.4.2 Sealing bars

Length	1.2 m, effective use 1.1 m
Sealing bar height	35 mm (10 or 65 mm as option)

3.4.3 Bag details

Length	To suit product
Width	To suit product, 450 mm max. (auto mode)
Bag type(s)	Current range of Cryovac® shrink bags (automatic feeding only with OSB™ bags)

3.4.4 Functional details

Working speed	4.9 to 5.1 cycles/min with 2 chambers and 1 RA630B pump + integrated WP1250D booster 7.3 to 7.7 cycles/min with 3 chambers and 2 RA630B pumps + 2 integrated WP1250D booster (depending on product types)
Noise level	63 dB (A) at operator's working position 72 dB (A) at exit conveyor
No. of operators	1 line supervisor (only when using OSB™ bags) 1 - 2 operators (for feeding when using other Cryovac® bag types)

4 Configuration

4.1 Standard

- 1 transfer conveyor module equipped with photocells for product detection
- 1 infeed conveyor module
- 1 infeed shuttle module
- 1 chamber vacuum module, comprising 2 or 3 chambers, each chamber equipped with:
 - Ultraseal® sealing system
 - one 1.2 m sealing bar, effective use 1.1 m, 35 mm height
 - internal pre-cutting, anti-ballooning system, Ultravac, final cutting
- Trim removal system
- 1 outfeed shuttle module
- 1 outfeed conveyor module
- Integrated booster pump, Busch WP1250D (1 in versions VSA211 & VSA2113C, 2 in version VSA312)
- Spare parts kit
- Installation kit
- Technical manual and declaration of conformity

4.2 Versions

- VSA211LH 2 chambers with 1 integrated Busch booster pump WP1250D
- VSA211RH 2 chambers with 1 integrated Busch booster pump WP1250D
- VSA2113CLH VSA211 pre-equipped with 3 chambers & 1 integrated Busch booster pump WP1250D
- VSA2113CRH VSA211 pre-equipped with 3 chambers & 1 integrated Busch booster pump WP1250D
- VSA312LH 3 chambers with 2 integrated Busch booster pump WP1250D
- VSA312RH 3 chambers with 2 integrated Busch booster pump WP1250D

Note: LH = machine direction is left to right, RH = machine direction is right to left

4.3 Options

- Fixed sealing bar height any other than standard (10/65)
- Upgrade of a VSA2113C to a VSA312 (including parts and installation at the Customer)
- Upgrade of a VSA211 to a VSA312, upon request and study
- Trim removal unit X143
- Vacuum Pump Busch RA630B (1 in versions VSA211 & VSA2113C, 2 in version VSA312)
- External precutting device

4.4 Recommended line assembly

- BLR1 + TXM VSA + VSA + ST98-800
- FV + TXM VSA + VSA + ST98-800