



Leonard Industrial Co., Limited

Professional Water Treatment & Bottling Solutions

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WD-XB15 Automatic carton packaging machine





1. Facility basic summary and requirement

The machine adopt to servo location, PLC controlling, auto operation, main drive adopt to import motor drive, multi degree rotation via chain, chain wheel speed regulator ect. It auto degree is high, reliable controlling, easy to adjust, intelligentize manipulation ect advantage, can widely used for beverage, beer, chemistry, food, medicine ect industry, can do all kind of tin and bottle second time package, can match with auto filling production line.

2. Main parameter

Product capacity: 15carton per minute

Rating power: 15KW

Used power supply: three phase,380V,50Hz

Controlling power supply: 24V DV

Compressor air: 1500L per minute, 0.6-0.8Mpa

Hot melting glue solidify time: 1.5-2S

Machine weight: 4000kg

Overall size: L6285*W2582*H2115MM

Bottle entry conveyor size: L3000*W620*1200MM

Package product overall size: Length 350-450、 Width 230-300mm, Hieght:85-320mm;

Package bottle diameter: D55-108MM

Cardboard requirement: accord with international GB/T6544-2008

Facility basic summary and requirement:

Facility name	Carton package machine	Power supply	380V,three-phase
Production capacity	15 pack/ minute	Power supply	220V AC
Product package qualified ratio	>99.8%	Controlling voltage	24V DC
Hot glue solidify time	≤1.5-2S	Main machine power	15KW
Facility weight	4T	Gas consumption quantity	1500 L/min
Machine overall size	6285*2582*2115	Compressor air requirement	0.6~0.8MPa
Bottle enter size	3000*620*1200	Package product overall size	(350-450)Length/ (200-330) Width/ (85-320) Height mm
Noise	85dB	Circumstance temperature requirement	0—45℃
Circumstance humidity requirement	Usually below 75%RH	Workshop requirement condition	Firm foundation

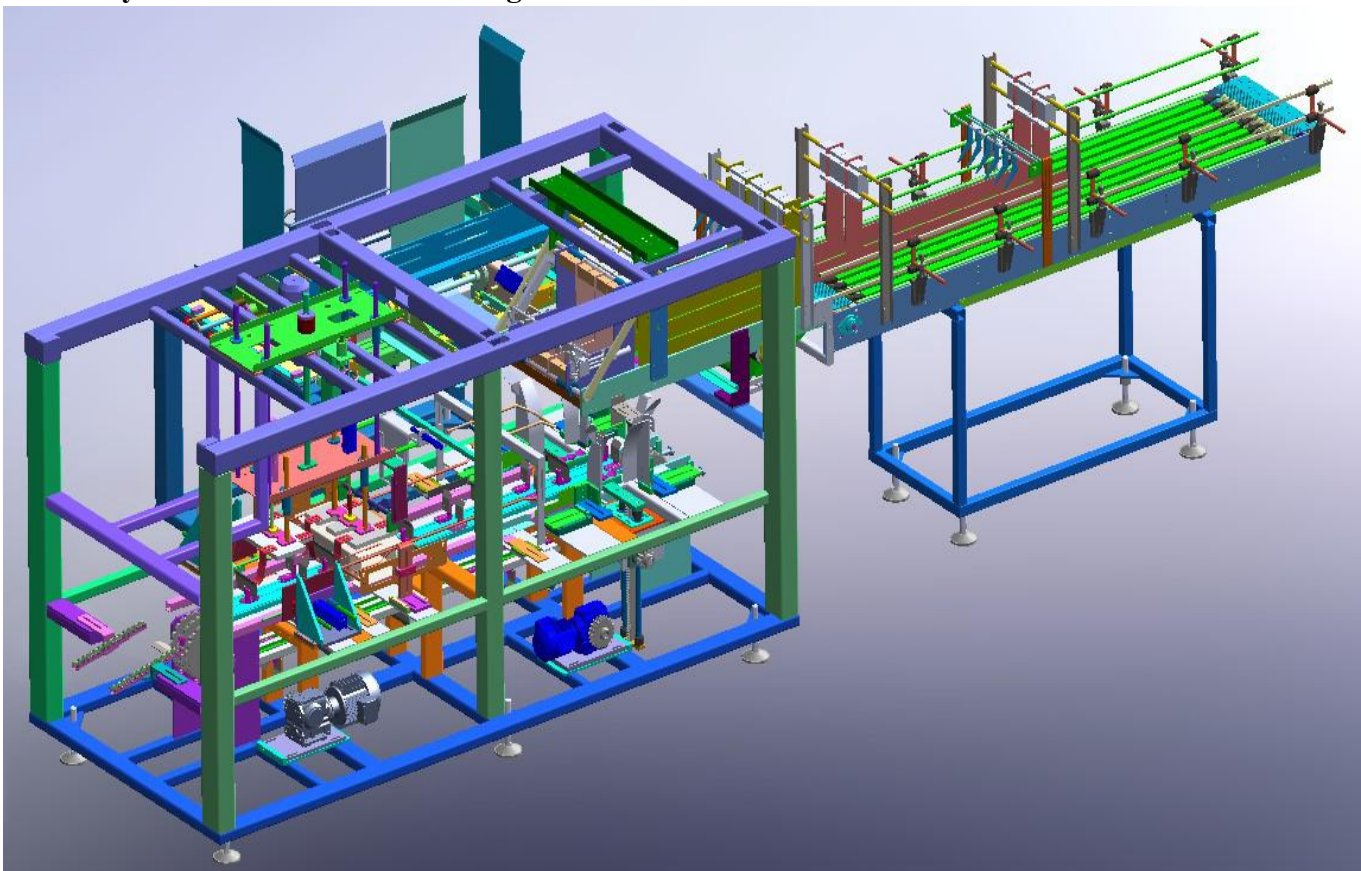


Facility collocate requirement	Dry, anti-dust, good ventilation good condition
Cardboard specific requirement	<p>a. Material: corrugate, used carton is three-layer, surface is white 250gram/sm, middle is high strength 150gram/sm. Bottom is cow cardboard 280g/sm;</p> <p>b. Carton each layer not allow have layering phenomenon , leatheroid thickness $\geq 3\text{mm}$</p> <p>c. Carton indentation thread thickness is moderate, width is not bigger than 2mm</p>

3. Applied bottle type: round bottle, square bottle, alien bottle.

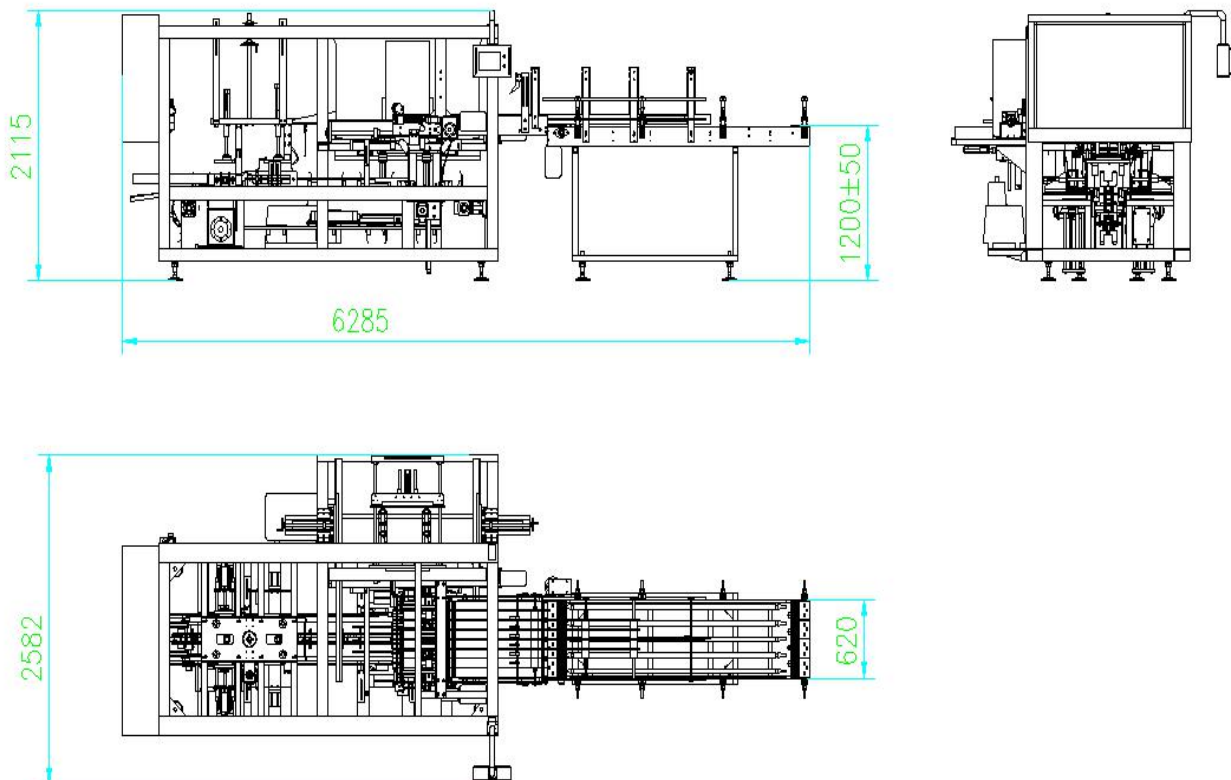
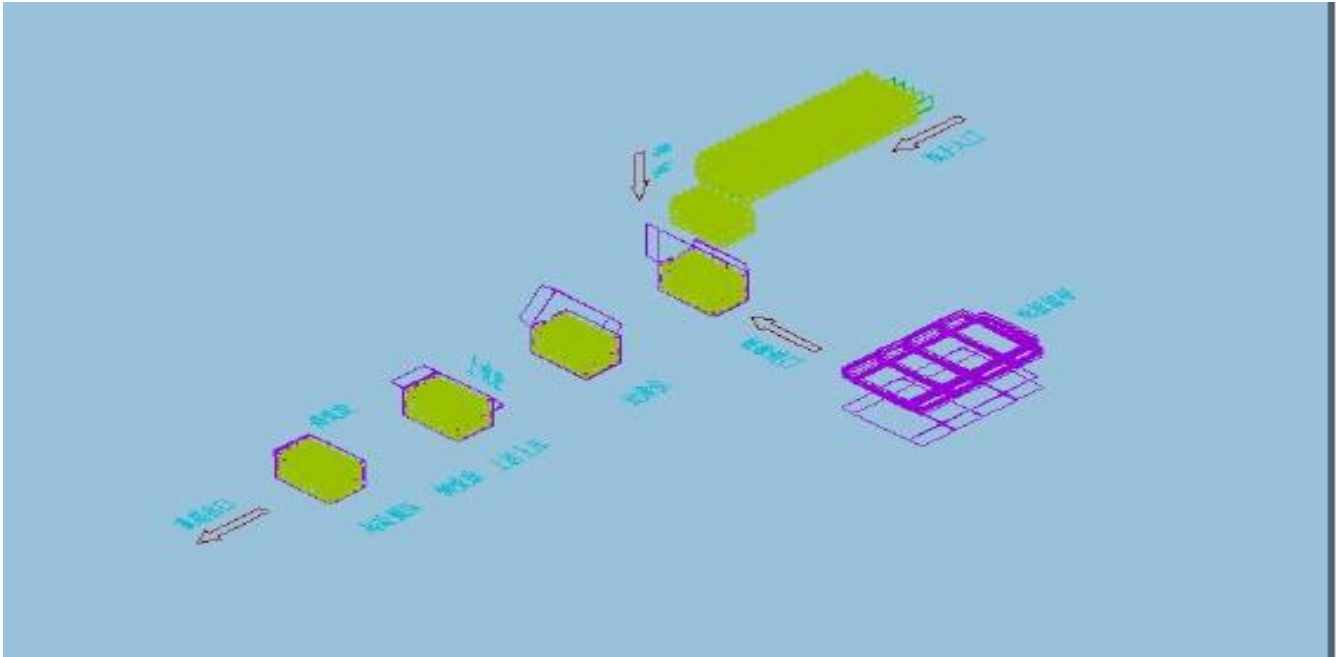
Package product	Package specification	Capacity	Applied bottle type
200ML-400ML	4*6,4*5,3*4 or 3*5,2*3 ect	15carton/minute	PET/Tin/Glass bottle
300ML-500ML	4*6,4*5,3*4 or 3*5,2*3 ect		
300ML-600ML	4*6,4*5,3*4 or 3*5,2*3 ect		
500ML-1250ML	3*4, 2*3 ect		
1250ML-2500ML	2*3,2*2 ect		

4. Facility Constitute a schematic diagram





5. Carton package procedure flow:



Bottle are separated to multi channel at conveyor, and then group by bottle separate fracture evenly. Bottle are grouped , then drop to cardboard via bottle drop fracture. At drop fracture with bottle and cardboard fall



procedure, via one group of form block board, then card board fold to carton form. Via main drive with carton move forward, at the same time, via glue spray fracture to finish carton top glue spray, again the cam fracture via top ledge fold, at the same top carton fold to finish top sticking. Carton move forwarder, again via glue spray fracture to finish carton side glue spray, and via side pressure and carton press fracture to finish carton finally form and sticking, and via main drive let carton move forwarder to conveyor .

6、 Facility configuration

Bottle transportation fracture



The part adopt to our country good brand motor and reduction gear motor separate move, via Japan Mitsubishi frequency convertor realize speed adjust. Bottle entry conveyor adopt to high module, low abrasion, make out via lubrication engineering plastic. For each details super design, to ensure character steadily. To ensure production continue, steadily movement. Bottle Before package, system will check package zone if have bottle lack, bottle inverse phenomena, bottle dropping fracture auto stop bottle drop and system will display.

bottle drop fracture





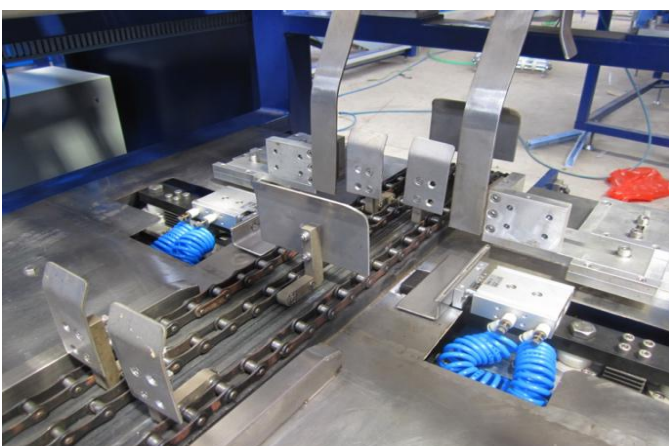
While photoelectric detect bottle and cardboard also be transported to bottle bottom, at this time, cylinder will push bottle dropping fracture, machine force section load cylinder reduce pressure, let bottle quickly drop to cardboard from bottle drop interval.

Cardboard transportation fracture



Cardboard fracture is for saving cardboard and let cardboard transport to the bottle drop bottom position fracture. And on it load cardboard saving quantity inspection fracture, when saving quantity above on an quantity, system will indict manipulation worker to add cardboard. Via promote and demote cylinder enhance board absorb (FESTO vacuum start component produce vacuum), save cardboard one by one absorb cardboard, right conveyor cardboard cylinder conveyor to cardboard leading groove. Via reduce motor drive transmission wheel let cardboard leading groove cardboard, via top and bottom V type conveyor belt to bottle dropping fracture bottom.

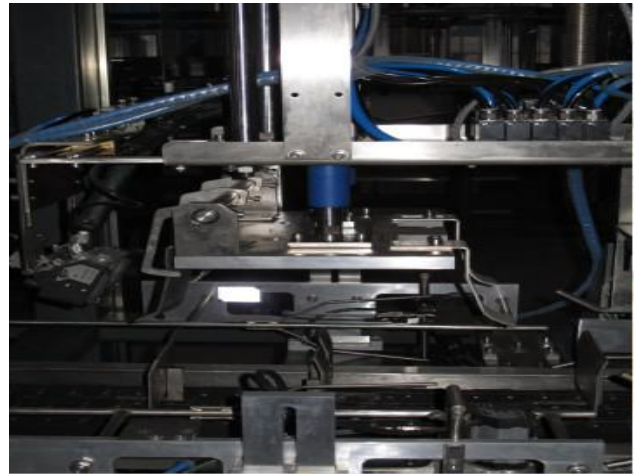
Carton dropping fracture



Via servo motor via wheel gear in phase device , let left and right two group in phase uplift to cardboard bottom and let card board absorb, and when bottle separation device let bottle top cardboard, again via servo motor drive in phase device dropping, at the same time left and right two group absorb plate absorb card board, bottle finally drop to main drive conveyor chain force and back clip carton chain middle.



Force carton pressing



When carton wrapping conveyor to force carton fold glue spray position, force fold glue spray device via cylinder drive glue spray revolve , spray glue on the carton top cover; again via force fold cylinder drive force fold and block board, via one pcs of cam wheel fracture to realize folding, blocking force and back move to do carton fold.

back carton pressing



While carton wrapping machine transport to side glue spray position (at that time side pressure fracture already let carton side edge glue spray finish). Via cylinder let back pressing board down pressing,. Let carton wrapping and fixed, to convenient side edge fracture let spray glue carton wrapping side edge pressing. Back pressing device let carton fixed and fixed situation, via two side cylinder push side pressing board, let carton side edge pressing fit.



carton forming



Carton form have three procedure finish:

1. When cardboard absorb fracture let cardboard and bottle dropping, via one group of forming block board, let cardboard fold to carton type. while bottle cardboard dropping let form, finish cardboard firstly fold forming.
2. Via force pressing carton cylinder blocking board down pressing, via cam wheel fracture realize force fold pressing board, blocking board force and back movement to do carton force fold pressing.
3. Back pressing carton device let carton fix and fixed position situation, via two side side pressing cylinder push side pressing board, let carton finish forming.

Main drive

Main drive via drive device, conveyor device, adjust device combination.

Via servo motor as drive, drive worm and gear reduction box via multiple disk sleeve roller chain, drive conveyor device force rotate shaft, back rotate shaft conveyor chain and force and back clip carton chain board combination. It can let carton conveyor fix position can adjust force and back carton clip chain board middle distance to apply for carton requirement.

Glue spray system



Whole system character is steadily, convenient to adjust, glue spray position is reliable, choose Nordson or Le



Bai De Special used for package calling new style glue machine, greatly lengthen glue machine operation time, greatly decrease maintain time, can deduce cost for user, heighten production efficiency.

Character

- * glue extruding capacity can reach 12.4kg each hour,
- * big volume glue jar
- * adopt to basket mesh filter net, no need daily washing.

Controlling system



Complete all kind of controlling project, all kind of main key point all set electronic monitoring device.

Mature servo controlling technology let client buy good price, relieve to use.

Facility working steadily, low noise, high efficiency.

Locale bus controlling technology, baud rate ratio support 9.6L to 12M, bus can finally connect 126 facility and support board cast and multi point communication.

SICK photoelectric switch, steadily character, related time is just 0.5MS.

7、 Facility working requirement

Product must be correspond steadily speed enter into machines, upstream product conveyor speed should can control, to avoid product middle over crushing. At the carton exit position, package product must be carefully timely move, package process normally doing.

8、 Facility basic collocati

Collocation name	Brand	Collocation name	Brand
Main drive servo	Schneider	PLC	Simens
Photoelectric sensor	AUTONICS	Pneumatic component	AIRTAC
Frequency transducer	TECO	Glue machine	ITW Dynatec
Touch screen	Simens	Servo controller	Schneider
Motor	Shanghai	Low pressure controlling	Schneider

