



What is a vertical transfer system (vertical conveyor)?

A vertical transfer system is a cargo-only transfer machine with a vertical transfer path, which comprises a vertical transfer apparatus (the vertical transfer machine itself) fitted with a mechanism that raises and lowers a cargo receiver, and a lateral transfer apparatus (a loading/unloading conveyor or loading/unloading device) fitted with a loading/unloading mechanism that loads and unloads cargo to and from the cargo receiver. *This is a cargo-only device, **so people may not ride it under any circumstances.**

Case Item Transferring Vertilator Series

〈Case Item Transferrin〉 Vertical Continuous Transfer Machine

Vertilator

Light Duty VES11 [Max. transfer load 30kg]

VEF11 [Max. transfer load 100kg]

Medium Duty VEP11 [Max. transfer load 200kg]

〈Case Item Transferrin〉 Automatic Loading/Unloading Conveyor

Auto-assistor **Roller Type** BDA48 (Ribbed Belt Drive)
CDA48/57 (Chain Drive)

〈Case Item Transferrin〉 Belt Hoist Type Vertical Continuous Transport Machine

Belt Vertilator

Light Duty VBS14 [Max. transfer load 20kg] **Patent Acquired**

〈Case Item Transferrin〉 Automatic Loading/Unloading Conveyor

Auto-assistor **Belt Type** BCA





Leave it to the vertical professionals to meet your every need.

Just as every person is different, there is endless variety in distribution locations.
Vertical conveyors need to be adaptable to fit any and all sites.
At HOKUSHO, we pride ourselves on our ability to optimize our products.

HOKUSHO customizes each of its vertical transfer machines to suit the needs of the site.
Our professionals always rise to the challenge of meeting new requirements at each installation, with knowhow based on our track record of meeting the various needs of our clients; both the types of cargo (shape, size, weight etc.) and the site conditions (fire prevention, temperature reduction, explosion prevention, rust prevention, and clean room compatibility).

Vertical Continuous Transfer Machine

Vertilator

Continuous Transfer for Optimum Performance.
A staple vertical transfer machine for conveying cargo between floors.

Belt Vertilator Patent Acquired
Light Duty VBS14
[Max. transfer load: 20kg]



Vertilator
Light Duty VES11
[Max. transfer load: 30kg]



Multi-Floor Vertilator
Light Duty VSVF
[Max. transfer load: 80kg]

Vertilator
Light Duty VEF11
[Max. transfer load: 100kg]



Vertilator
Medium Duty VEP11
[Max. transfer load: 200kg]



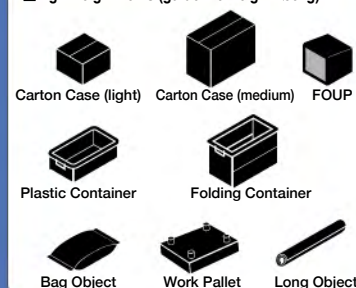
Vertilator
Heavy Duty VKW
[Max. transfer load: 1440kg]

Vertilator
Heavy Duty VCM
[Max. transfer load: 2700kg]

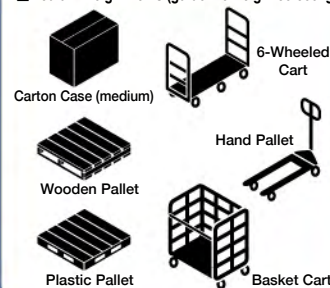


Cart Vertilator
Heavy Duty VKCW
[Max. transfer load: 1000kg]

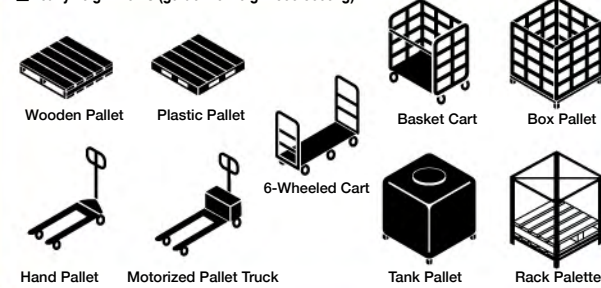
Lightweight items (guideline weight <50kg)



Medium-weight items (guideline weight 50-500kg)



Heavyweight items (guideline weight 500-3000kg)



Case Item Transfer Vertilator Overview

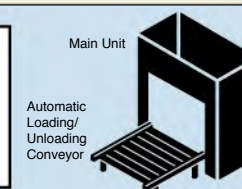
1 Comparison Between Vertilators And Elevators

Case Item Transfer Vertilator

Comparison

Passenger And Cargo Elevator

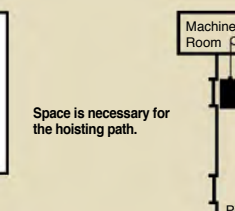
- 1 Automatic Loading/Unloading Conveyor : Necessary
- 2 Upper Machine Room : Unnecessary
- 3 Lower Pit : Unnecessary
- 4 Hoistway : Unnecessary
- 5 Height Limit : Included



Installation Space

Space is necessary for the main unit and the automatic loading/unloading conveyor installed in front of the main unit.
*A pit for the lower section will be necessary if the transfer height on the installation level is low.

- 1 Automatic Loading/Unloading Conveyor : Unnecessary
- 2 Upper Machine Room : Necessary
- 3 Lower Pit : Necessary
- 4 Hoistway : Necessary
- 5 Height Limit : Not Included



*The upper machine room requires more than double the floor space of the hoistway.

- 1 Size Regulations : Included
- 2 Shape Regulations : Included
- 3 Weight Regulations : Included
- 4 Operator : Non-rideable

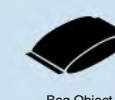
Only for use with cargo with flat bottoms and a rigid structure such as plastic containers, etc.
Non-rideable



Carton Case



Plastic Container



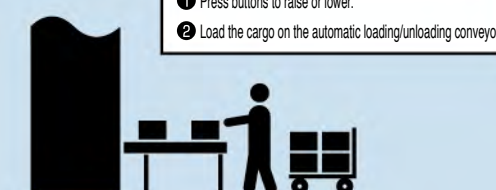
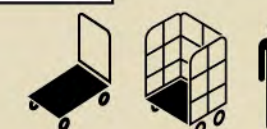
Bag Object



Cargo Regulations

- 1 Size Regulations : Included/Internal Dimensions of Basket
- 2 Shape Regulations : Non-rideable
- 3 Weight Regulations : Included
- 4 Operator : Rideable

When being ridden by an operator cargo is mainly transferred via cart.



After loading the cargo on the automatic loading/unloading conveyor, all other operations are conducted automatically.
*Separate operators are necessary to load and unload the cargo.

Usage Directions

- 1 Press the call button
- 2 The entrance/exit doors open
- 3 Insert the cargo
- 4 Press the destination level button
- 5 The entrance/exit doors close
- 6 Cargo is raised/lowered
- 7 The entrance/exit doors open
- 8 Remove the cargo



Just as with a normal elevator, operation is conducted by a single operator.

*Each operation, such as calling, opening and closing the doors, inserting the cargo, and raising and lowering, takes a certain amount of time.

- Defined as a "Vertical Reciprocating Conveyor" under the Japanese Industrial Standards (JIS). [JIS B8950]
- The definition of a hoisting machine (elevator/hoisting machine for small items only) under the Building Standards Act does not apply.
- Hoisting machines are defined as construction equipment; however, vertical conveyors (vertical transfer systems) are treated as different to hoisting machines.
[Interpretation of the technical standards for hoisting machines]
- The definition of an elevator/simple lift under the Industrial Safety and Health Act does not apply.
- Although elevators and simple lifts are regulated in the Safety Ordinance for Cranes etc., made under the Industrial Safety and Health Act, vertical conveyors (vertical transfer systems) are not covered by this regulation.
[Interpretation of the Safety Ordinance for Cranes etc.]
- It is categorized as a vertical conveyor in the "Technical Guidelines Concerning Conveyor Safety Standards," and its specifications are in accordance with said guidelines.
[Industrial Safety and Health Act, Article 151 (77) to (83)]
- The Fire Service Act may apply.
- If the hoistway is in a property under fire prevention measures (building) as stipulated by the Fire Service Act Enforcement Ordinance, it is necessary to have an automatic fire alarm system installed.
[Fire Service Act Enforcement Ordinance, Article 21]

Legal Handling

- The provisions of the Building Standards Act relating to elevators (elevator/hoisting machines for small items only) apply, and the Act must be complied with.
[Building Standards Act, Articles 34 and 36]
- It is necessary for fire doors (fire shutters) with fire and smoke obstructing capabilities to be installed along the hoistway of hoisting machines to delineate fire compartments.
[Enforcement Ordinance of the Building Standards Act, Articles 109 and 112]
- Periodic inspection must be conducted by a qualified architect or other qualified party stipulated by the Minister of Land, Infrastructure and Transport.
[Enforcement Ordinance of the Building Standards Act, Article 6]
- The Japanese Industrial Standards (JIS) contain stipulations concerning hoisting machines' inspection standards and wire ropes.
[JIS A4301, A4302, G3525]
- The provisions of the Industrial Safety and Health Act concerning elevators/simple lifts apply, and the Act must be complied with.
[Industrial Safety and Health Act, Article 37]
- The Fire Service Act may apply.
- If installed in a property under fire prevention measures (building) as stipulated by the Fire Service Act Enforcement Ordinance, it is necessary to have an automatic fire alarm system installed.
[Fire Service Act Enforcement Ordinance, Article 21]

2 Summary of the differences:

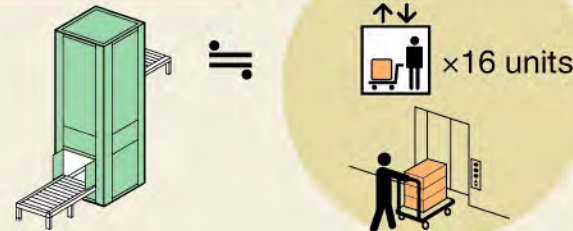
High transfer performance and energy-saving design



When transferring cases (height 400mm), a single Light Duty Vertilator (Z type) delivers high performance equivalent to approximately sixteen passenger and cargo elevators.

Light Duty Vertilator
Approx. 1,600 units/hour

Passenger And Cargo Elevator
Approx. 100 units/hour



Unlike an elevator, there is no legal requirement to conduct periodic inspections, which reduces maintenance costs. As transfer is continuous, the loss of energy on startup is negated. Also, the system features comprehensive **energy-saving control**, such as automatically stopping when there are no further cargo items to transfer.

*Energy-saving control (sequential starting and stopping control): Conveyors receiving cargo are activated sequentially, and automatically stop once cargo has passed through.



In the situation depicted in the above diagram, conveyors ② and ③ (with no cargo items on them) are stopped. Conveyors are activated sequentially when ready to receive cargo and stop when cargo has passed through.

There is no waiting time for calling and opening and closing of doors etc., and transfer is fully automated.

Workers need only load items onto the auto-assistor (automatic loading/unloading conveyor) for them to be transferred automatically to the appropriate floor. Operating efficiency is improved significantly as there is no unnecessary wait time.

Easy installation

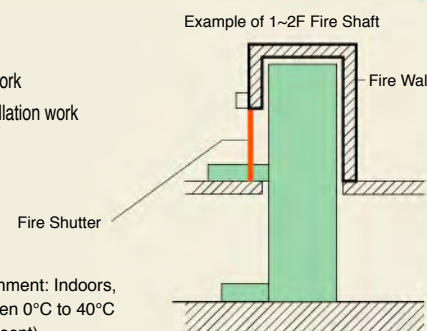
As a machine room is not necessary, installation is easy in any building, whether new or existing. Unlike an elevator, there is no need to apply for building certification or completion inspection.

Ancillary work when installing in an existing building (building work not undertaken by HOKUSHO)

- ① Aperture work
- ② Primary power source connection work
- ③ Suspended components installation work
- ④ Pit work (if a pit is necessary)

Ancillary work when installing in a fire compartment (building work not undertaken by HOKUSHO)

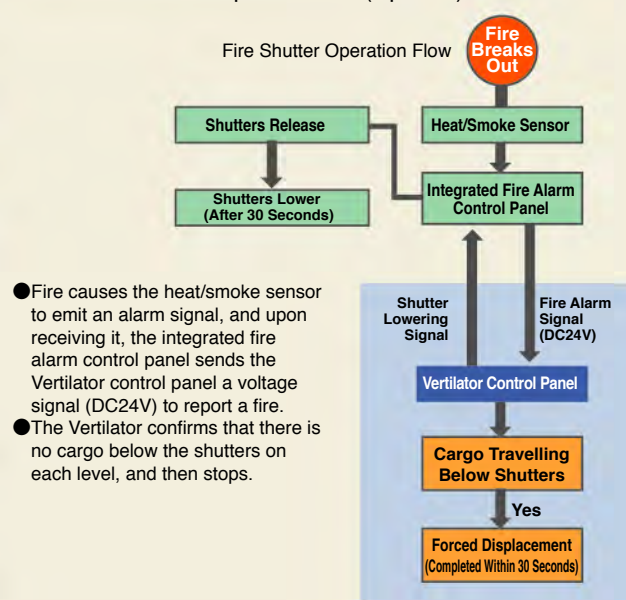
- ① Fire shaft work
- ② Fire shutter installation work
- ③ Heat/smoke sensor installation work
- ④ Fire alarm wiring work



*Optimal installation environment: Indoors, at a temperature of between 0°C to 40°C (with no condensation present)

Fire Prevention Measures

Fire Shutter Control Specifications (Optional)



- Fire causes the heat/smoke sensor to emit an alarm signal, and upon receiving it, the integrated fire alarm control panel sends the Vertilator control panel a voltage signal (DC24V) to report a fire.
- The Vertilator confirms that there is no cargo below the shutters on each level, and then stops.

3 Performance:

Safe Design

(OP) : Options

Various anomaly detection devices have been installed to ensure the safety of the operator as well as the cargo and the machinery.

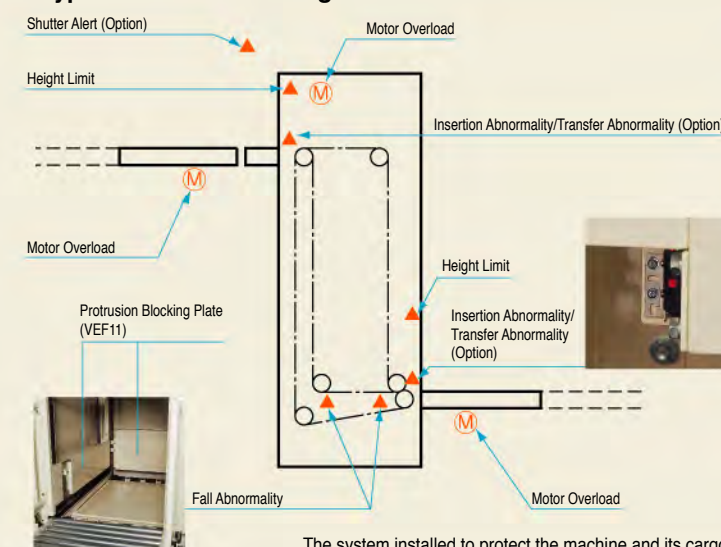
Accident Prevention Features

- ① The loading/unloading gate is fitted with an intrusion blocking panel.
- ② The control section (emergency stop button included) is operated by an easy-to-use button system.
- ③ Buzzers emit a warning signal when the switching on, or in case of an emergency. Furthermore, attaching a signal display device (recommended OP) or electronic display device (OP) allows the operator to check the status of operations, fullness, and abnormalities in real time.
- ④ The Vertilator is equipped with the various functions required for continuous transfer, such as a cycling stop to ensure that no cargo is left within the machinery upon stopping, and an automatic stop, activated if the machine reaches its maximum loading capacity.
- ⑤ Fitted as standard, our "industry first" status display monitors will display the status of any abnormalities, allowing the operator to view additional details via the touch panel. In addition to displaying the inspection results and replacement schedule of consumable components, the display also allows the operator to check abnormalities history logs and operational history logs.

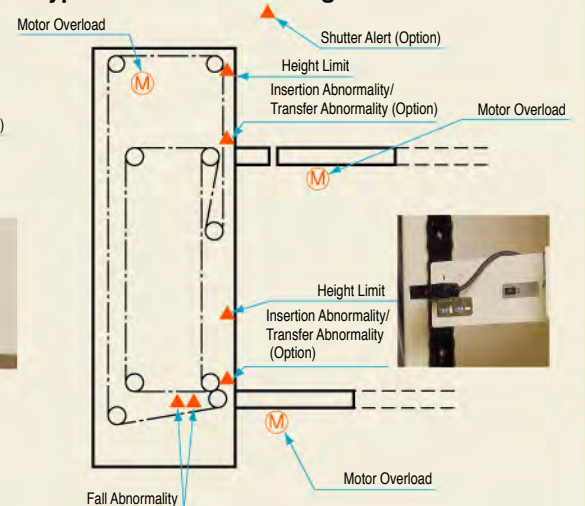


Various Fault Detection Devices

● Z type: Front-to-rear facing



● C type: Front-to-front facing

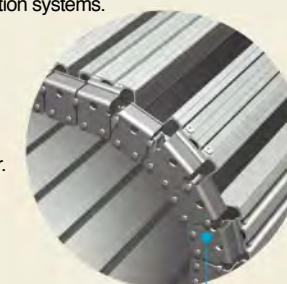


The system installed to protect the machine and its cargo will automatically stop the machine should any abnormality be detected.

Long service life: A more economical solution

The culmination of a wealth of experience and technology, this mechanism boasts outstanding functionality and durability. Furthermore, with a long life span thanks to the ease of maintenance, this unit is extremely economical.

- ① Achieves a higher level of precision manufacturing and faster turnaround using CAD/CAM production systems.
- ② The loading platform chain (bar chain) that stands at the heart of the unit is designed with Hokusho's unique technology to prevent sagging and maintain stable transfer.



Bar Chain

- ③ The frame's surface treatment is extremely durable powder coating (full gloss), so it will retain its looks without rusting.
- ④ Maintenance service is comprehensive. A range of service menu options are available. Please feel free to request the Vertical Transport System "VTS" maintenance service menu options.



*The structure of the VES loading platform chain differs from the figure above.

A vertical conveyor for continuously transferring case items and folding containers between upper and lower floors.

〈Case Item Transferrin〉 Vertical Continuous Transfer Machine

Vertilator

Light Duty VES11 [Max. transfer load 30kg]
VEF11 [Max. transfer load 100kg]

Medium Duty VEP11 [Max. transfer load 200kg]

〈Case Item Transferrin〉 Belt Hoist Type Vertical Continuous Transport Machine

Belt Vertilator

Light Duty VBS14 [Max. transfer load 20kg]

This unit is a cargo-only vertical transport machine designed to continuously transport a load in a similar manner to an escalator. Requiring less installation space than a sloping conveyor, its capacity is top of the general-purpose vertical conveyor class, contributing to great improvements in labor efficiency due to the unit's ability to transfer large volumes of cargo over a short period of time. By combining the unit with any of the horizontal conveyors it's possible to construct a three-dimensional, automatic transfer line. In addition to the unit being used as part of factory production lines, the unit has been implemented in a wide variety of locations, such as part of a shipping/receiving line in retail warehouses, and in meal tray transfer lines in hotels and inns. Furthermore, a new model has been developed using resin belts in the hoisting mechanisms. As the unit has no metal sliding parts, it requires no lubrication, eliminating metal filings and oil mist. This vertical transfer machine is ideal for locations which demand an environmentally friendly environment (pharmaceutical products, food production, or in factories producing rechargeable batteries, etc.).



VBS14/VES11/VEF11/VEP11 Main Specifications

■ **Installation location** / **Indoors** *Ambient temperature should be between 0 and 40°C.
*Ensure that no condensation occurs.

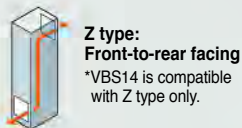
Due to its frame construction, installation is possible in locations without a hoistway (fire shaft) if an anti-shake buffer is fitted. In these circumstances, there is a height limit. Also, the Fire Services Act may apply.

*Please consult us before installing in a location facing outdoors.
*Please inform us if you have any requirements concerning fire compartments etc.
*Please inform us regarding the environment in which you will install the equipment if it will be used with chemicals, in low-temperature warehouses, or handle dangerous items etc.

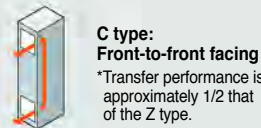
■ **Machine height** / VBS14 : Max.15m VES11 : Max.15m
VEF11 : Max.20m VEP11 : Max.25m

■ **Maximum no. of stations** / 2 *Stations are loading/unloading gates for cargo.

■ **Transfer direction format** /



Z type:
Front-to-rear facing
*VBS14 is compatible with Z type only.



C type:
Front-to-front facing
*Transfer performance is approximately 1/2 that of the Z type.

■ **Hoist speed (m/min)** / ■ **Approx. transfer performance**

VBS14 - Z : 20 25 30 35 40 45 50 / 3000units/hour
*Uses inverter speed control.

VES11 - Z : 15 20 25 30 36 / 2000units/hour
VES11 - C : 15 20 25 30 36 / 1000units/hour

*Inverter speed control is employed when speed exceeds 30m/min, transfer performance exceeds 1000 units/hour, or when the unit needs to be repeatedly activated and stopped.

VEF11 - Z : 15 20 25 30 / 1600units/hour

VEF11 - C : 15 20 25 / 700units/hour

*Inverter speed control is employed when transfer performance exceeds 1000 units/hour, or when the unit needs to be repeatedly activated and stopped.

VEP11 - Z : 13 15 18 20 / 600units/hour

VEP11 - C : 13 15 18 20 / 400units/hour

*Inverter speed control is employed when the unit needs to be repeatedly activated and stopped.

■ **Auto-assistor (Automatic Loading/Unloading Conveyor)** / 1 per station
[Roller Type] Transfer Speed (m/min.) / 13 15 18 20 25 30 36
[Belt Type] Transfer Speed (m/min.) / 20 25 30 35 40 45 50

*An in-shutter conveyor is required when installing unit in a hoistway (fire shaft).
*If main unit uses inverter speed control specifications, the auto-assistor will as well.
*A belt type may also be used when the hoist speed exceeds 30m/min, or when transferring cargo with a slip-prone underside.
*Please consult us before creating a line connecting an auto-assistor to a horizontal conveyor.

■ **Cargo item size (mm)** [Cargo Weight]

VBS14 - Z : Max. W 500 × L 700 × H 500 [Max. ~ 20kg]
: Min. W 200 × L 230 × H 100 [Min. 0.5kg]

Used for both VES11 - Z and VES11 - C

: Max. W 500 × L 700 × H 700 [Max. ~ 30kg]
: Min. W 200 × L 270 × H 75 [Min. 0.5kg]

Used for both VEF11 - Z and VEF11 - C

: Max. W 1200 × L 1200 × H 1000 [Max. ~100kg]
*Maximum transfer load of C type is 80kg.
: Min. W 200 × L 300 × H 75 [Min. 0.5kg]

VEP11 - Z : Max. W 1520 × L 1500 × H 1050 [Max. ~200kg]
: Min. W 200 × L 375 × H 75 [Min. 0.5kg]

VEP11 - C : Max. W 1520 × L 1450 × H 1050 [Max. ~200kg]
: Min. W 200 × L 550 × H 75 [Min. 0.5kg]

*Please contact us if a unit smaller than the minimum listing size is required.

■ **Main Unit Exterior Cladding Type** / Sheet steel/Expanded sheet/Resin(transparent window with sheet steel frame specifications)

■ **Paintwork colors (standard)** /

Ivory

Light gray

● Powder coating (full gloss) finish.

● Lead-free paint is used.

*Specifying the color requires a special order (custom).

*Actual color may vary slightly. Please feel free to request a color sample plate.

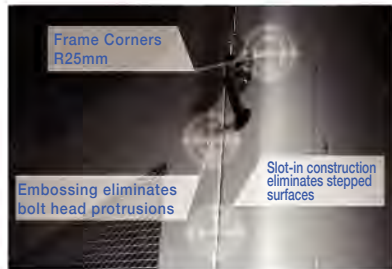
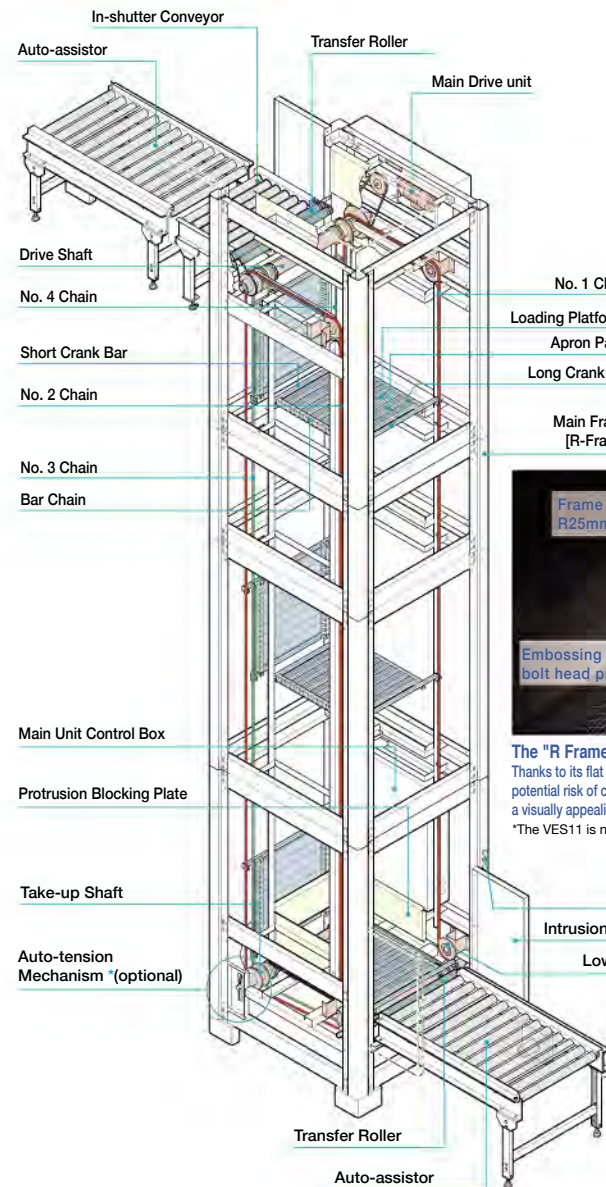
Vertilator Structure

*The main unit exterior cladding is not shown in the structural chart.

Mechanism

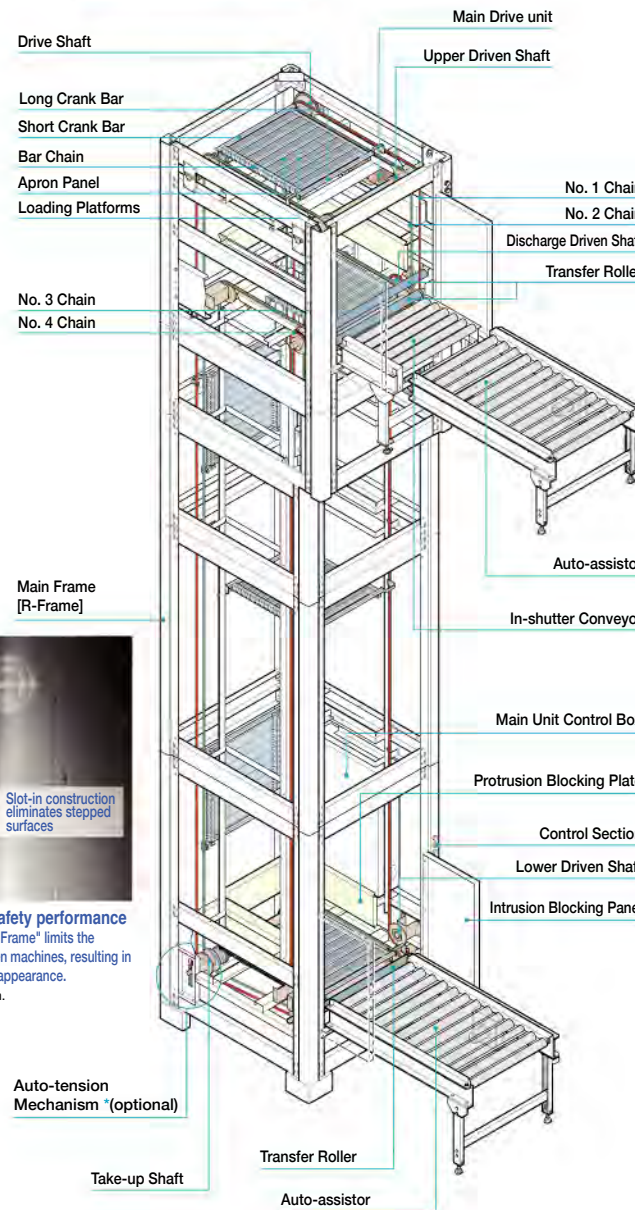
The Vertilator mechanism is fitted with four endless chains and multiple loading platforms which can be only inwardly, which can be continuously raised (/lowered) in order to maintain the continuous transfer of cargo while keeping it level.

VEF11-Z
(Chain Hoist Type)



The "R Frame," pursuing ultimate safety performance
Thanks to its flat surface construction, the "R Frame" limits the potential risk of contact and snagging between machines, resulting in a visually appealing and uncluttered external appearance.
*The VES11 is not flat surface construction.

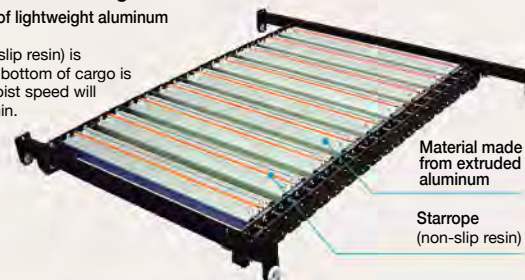
VEF11-C
(Chain Hoist Type)



*The auto-tension mechanism refers to [VES11: standard equipment], [VEF11/VEP11: optional].

VEF11: Standard Loading Platform

Apron panel is of lightweight aluminum slat material
*Starrope (non-slip resin) is installed when bottom of cargo is slippery and hoist speed will exceed 30m/min.



Main Unit Type

VEF11-Z 12-08 08 - P S

[Basic Code] [Height (m)] [Nominal Width] [Nominal Depth] [Cladding]
S: Sheet steel (entire surface)
X: Expanded sheet (entire surface)
P: Resin (entire surface)
M: Composite of S and X (entire surface)
Z: None
[Transfer direction format]
Z type: Front-to-rear facing
C type: Front-to-front facing
[Control Specifications]
P: Sequencer
E: External devices only
Z: None

Hoist speed transfer reference overview

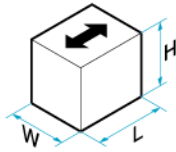
Transfer capacity varies depending on conditions such as cargo size, transfer speed and transfer direction format.

■VES11 hoist speed transfer reference overview

*In principle the formula [width of cargo W ≤ length of cargo L ≥ height of cargo H] is applied. As such, the figure can be calculated by inserting the respective values. Please conduct a transfer test to confirm.

*Hoist speed (transfer up and down): Margin of error from listed values is within ±10%.

*Lifting height: Refers to vertical transfer stroke, and is the distance from installation floor cargo loading height to upper floor cargo loading height.



●VES11[Z type and C type] hoist speed: 15m/min transfer reference overview (units/hour)

Transfer conditions		Max. cargo length L							
		Nominal 02 04		Nominal 03 05		Nominal 04 06		Nominal 05 07	
Nominal (Width/Depth)	Transfer direction format	Z type	C type	Z type	C type	Z type	C type	Z type	C type
Cargo Weight		30kg	30kg	30kg	30kg	30kg	30kg	30kg	30kg
*Lifting height: 5m		400mm	400mm	500mm	500mm	600mm	600mm	700mm	700mm
Max. cargo height H	100mm	1246	529	1068	455	980	448	886	380
	200mm	1090	529	915	455	905	392	738	380
	300mm	934	470	838	398	830	392	738	380
	400mm	856	470	762	398	754	392	665	326
	500mm	(779)	(411)	686	398	679	336	590	326
	600mm	(700)	(411)	(686)	(342)	603	336	590	326
	700mm	(700)	(411)	(609)	(342)	(603)	(336)	517	326

●VES11[Z type and C type] hoist speed: 20m/min transfer reference overview (units/hour)

Transfer conditions		Max. cargo length L							
		Nominal 02 04		Nominal 03 05		Nominal 04 06		Nominal 05 07	
Nominal (Width/Depth)	Transfer direction format	Z type	C type	Z type	C type	Z type	C type	Z type	C type
Cargo Weight		30kg	30kg	30kg	30kg	30kg	30kg	30kg	30kg
*Lifting height: 5m		400mm	400mm	500mm	500mm	600mm	600mm	700mm	700mm
Max. cargo height H	100mm	1662	705	1423	607	1308	597	1182	507
	200mm	1454	705	1220	607	1207	523	985	507
	300mm	1246	627	1118	531	1107	523	985	507
	400mm	1142	627	1017	531	1006	523	886	435
	500mm	(1038)	(548)	915	531	905	448	788	435
	600mm	(934)	(548)	(915)	(455)	804	448	788	435
	700mm	(934)	(548)	(813)	(455)	(804)	(448)	689	435

●VES11[Z type and C type] hoist speed: 25m/min transfer reference overview (units/hour)

Transfer conditions		Max. cargo length L							
		Nominal 02 04		Nominal 03 05		Nominal 04 06		Nominal 05 07	
Nominal (Width/Depth)	Transfer direction format	Z type	C type	Z type	C type	Z type	C type	Z type	C type
Cargo Weight		30kg	30kg	30kg	30kg	30kg	30kg	30kg	30kg
*Lifting height: 5m		400mm	400mm	500mm	500mm	600mm	600mm	700mm	700mm
Max. cargo height H	100mm	1995	846	1709	729	1569	718	1420	609
	200mm	1745	846	1465	729	1449	628	1182	609
	300mm	1496	752	1342	637	1328	628	1182	609
	400mm	1371	752	1220	637	1208	628	1065	522
	500mm	(1246)	(658)	1098	637	1086	538	946	522
	600mm	(1122)	(658)	(1098)	(546)	966	538	946	522
	700mm	(1122)	(658)	(976)	(546)	(966)	(538)	828	522

●VES11[Z type and C type] hoist speed: 30m/min transfer reference overview (units/hour)

Transfer conditions		Max. cargo length L							
		Nominal 02 04		Nominal 03 05		Nominal 04 06		Nominal 05 07	
Nominal (Width/Depth)	Transfer direction format	Z type	C type	Z type	C type	Z type	C type	Z type	C type
Cargo Weight		30kg	30kg	30kg	30kg	30kg	30kg	30kg	30kg
*Lifting height: 5m		400mm	400mm	500mm	500mm	600mm	600mm	700mm	700mm
Max. cargo height H	100mm	2369	1006	2029	866	1864	852	1686	723
	200mm	2072	1006	1739	866	1721	745	1405	723
	300mm	1776	893	1594	757	1577	745	1405	723
	400mm	1628	893	1449	757	1434	745	1264	620
	500mm	(1480)	(782)	1304	757	1290	638	1124	620
	600mm	(1332)	(782)	(1304)	(649)	1147	638	1124	620
	700mm	(1332)	(782)	(1159)	(649)	(1147)	(638)	983	620

●VES11[Z type and C type] hoist speed: 36m/min transfer reference overview (units/hour)

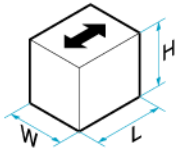
Transfer conditions		Max. cargo length L							
		Nominal 02 04		Nominal 03 05		Nominal 04 06		Nominal 05 07	
Nominal (Width/Depth)	Transfer direction format	Z type	C type	Z type	C type	Z type	C type	Z type	C type
Cargo Weight		30kg	30kg	30kg	30kg	30kg	30kg	30kg	30kg
*Lifting height: 5m		400mm	400mm	500mm	500mm	600mm	600mm	700mm	700mm
Max. cargo height H	100mm	2868	1218	2457	1048	2257	1032	2042	876
	200mm	2509	1218	2106	1048	2084	903	1701	876
	300mm	2151	1082	1930	917	1911	903	1701	876
	400mm	1971	1082	1755	917	1736	903	1531	750
	500mm	(1792)	(947)	1579	917	1563	774	1361	750
	600mm	(1613)	(947)	(1579)	(786)	1389	774	1361	750
	700mm	(1613)	(947)	(1404)	(786)	(1389)	(774)	1190	750

■VEF11 hoist speed transfer reference overview

*In principle the formula [width of cargo W ≤ length of cargo L ≥ height of cargo H] is applied. As such, the figure can be calculated by inserting the respective values. Please conduct a transfer test to confirm.

*Hoist speed (transfer up and down): Margin of error from listed values is within ±10%.

*Lifting height: Refers to vertical transfer stroke, and is the distance from installation floor cargo loading height to upper floor cargo loading height.



●VEF11[Z type and C type] hoist speed: 15m/min transfer reference overview (units/hour)

Transfer conditions		Max. cargo length L							
		Nominal 05 05		Nominal 05 07		Nominal 07 09		Nominal 10 12	
Nominal (Width/Depth)	Transfer direction format	Z type	C type	Z type	C type	Z type	C type	Z type	C type
Cargo Weight		72~100kg	80kg	86~100kg	80kg	100kg	80kg	50kg	50kg
*Lifting height: 5m		500mm	500mm	700mm	700mm	950mm	950mm	1200mm	1200mm
Max. cargo height H	100mm	1047	515	792	379	695	307	537	244
	200mm	973	458	721	379	626	307	537	244
	300mm	823	458	648	324	556	307	470	244
	400mm	748	400	648	324	556	256	470	244
	500mm	673	400	576	324	487	256	470	244
	600mm	(673)	(400)	576	324	487	256	402	244
	700mm	(598)	(339)	504	267	417	253	402	244
	800mm	(523)	(335)	(504)	(264)	417	250	402	191
	900mm	(523)	(330)	(432)	(260)	417	247	336	188
	1000mm	(523)	(327)	(432)	(257)	(347)	(245)	336	187

●VEF11[Z type and C type] hoist speed: 20m/min transfer reference overview (units/hour)

Transfer conditions		Max. cargo length L							
		Nominal 05 05		Nominal 05 07		Nominal 07 09		Nominal 10 12	
Nominal (Width/Depth)	Transfer direction format	Z type	C type	Z type	C type	Z type	C type	Z type	C type
Cargo Weight		53~81kg	80kg	63~100kg	80kg	75~100kg	80kg	50kg	50kg
*Lifting height: 5m		500mm	500mm	700mm	700mm	950mm	950mm	1200mm	1200mm
Max. cargo height H	100mm	1381	680	1045	499	917	405	708	321
	200mm	1282	604	950	499	825	405	708	321
	300mm	1085	604	855	428	734	405	620	321
	400mm	986	528	855	428	734	338	620	321
	500mm	887	528	760	428	641	338	620	321
	600mm	(887)	(528)	760	428	641	338	531	321
	700mm	(788)	(447)	665	352	549	334	531	318
	800mm	(690)	(441)	(665)	(348)	549	331	531	251
	900mm	(690)	(436)	(570)	(343)	549	327	442	248
	1000mm	(690)	(431)	(570)	(340)	(458)	(323)	442	245

●VEF11[Z type and C type] hoist speed: 25m/min transfer reference overview (units/hour)

Transfer conditions		Max. cargo length L							
		Nominal 05 05		Nominal 05 07		Nominal 07 09		Nominal 10 12	
Nominal (Width/Depth)	Transfer direction format	Z type	C type	Z type	C type	Z type	C type	Z type	C type
Cargo Weight		42~66kg	80kg	50~86kg	80kg	59~83kg	80kg	50kg	50kg
*Lifting height: 5m		500mm	500mm	700mm	700mm	950mm	950mm	1200mm	1200mm
Max. cargo height H	100mm	1667	821	1262	603	1107	490	855	388
	200mm	1548	729	1147	603	996	490	855	388
	300mm	1310	729	1032	517	885	490	748	388
	400mm	1191	637	1032	517	885	408	748	388
	500mm	1072	637	918	517	775	408	748	388
	600mm	(1072)	(637)	918	517	775	408	641	388
	700mm	(952)	(540)	803	426	664	403	641	384
	800mm	(833)	(534)	(803)	(421)	664	399	641	303
	900mm	(833)	(526)	(688)	(415)	664	394	535	300
	1000mm	(833)	(520)	(688)	(410)	(553)	(391)	535	297

●VEF11[Z type] hoist speed: 30m/min transfer reference overview (units/hour)

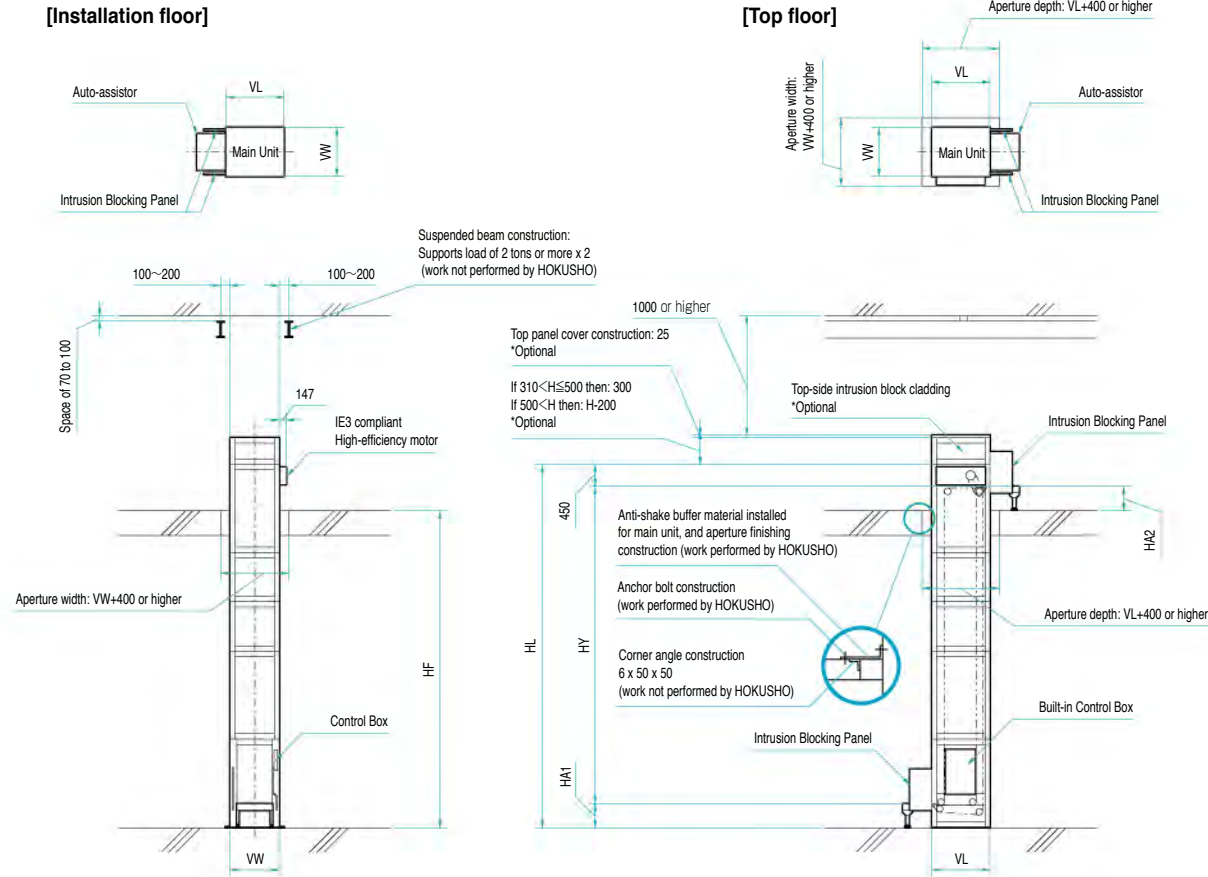
Transfer conditions		Max. cargo length L			
		Nominal 05 05	Nominal 05 07	Nominal 07 09	Nominal 10 12
Nominal (Width/Depth)	Transfer direction format	Z type	Z type	Z type	Z type
Cargo Weight		32~50kg	38~66kg	44~62kg	50kg
*Lifting height: 5m		500mm	700mm	950mm	1200mm
Max. cargo height H	100mm	2097	1587	1392	1076
	200mm	1947	1442	1252	1076
	300mm	1647	1298	1113	940
	400mm	1497	1298	1113	940
	500mm	1347	1154	974	940
	600mm	(1347)	1154	974	806
	700mm	(1197)	1009	834	806
	800mm	(1048)	(1009)	834	806
	900mm	(1048)	(865)	834	672
	1000mm	(1048)	(865)	(695)	672

■VEP11 hoist speed

■VES11-Z dimensions reference image (mm)

Main unit size ranks: width 05, depth 05 / 2F (transfer direction type: Z) / with 1 auto-assistor per station

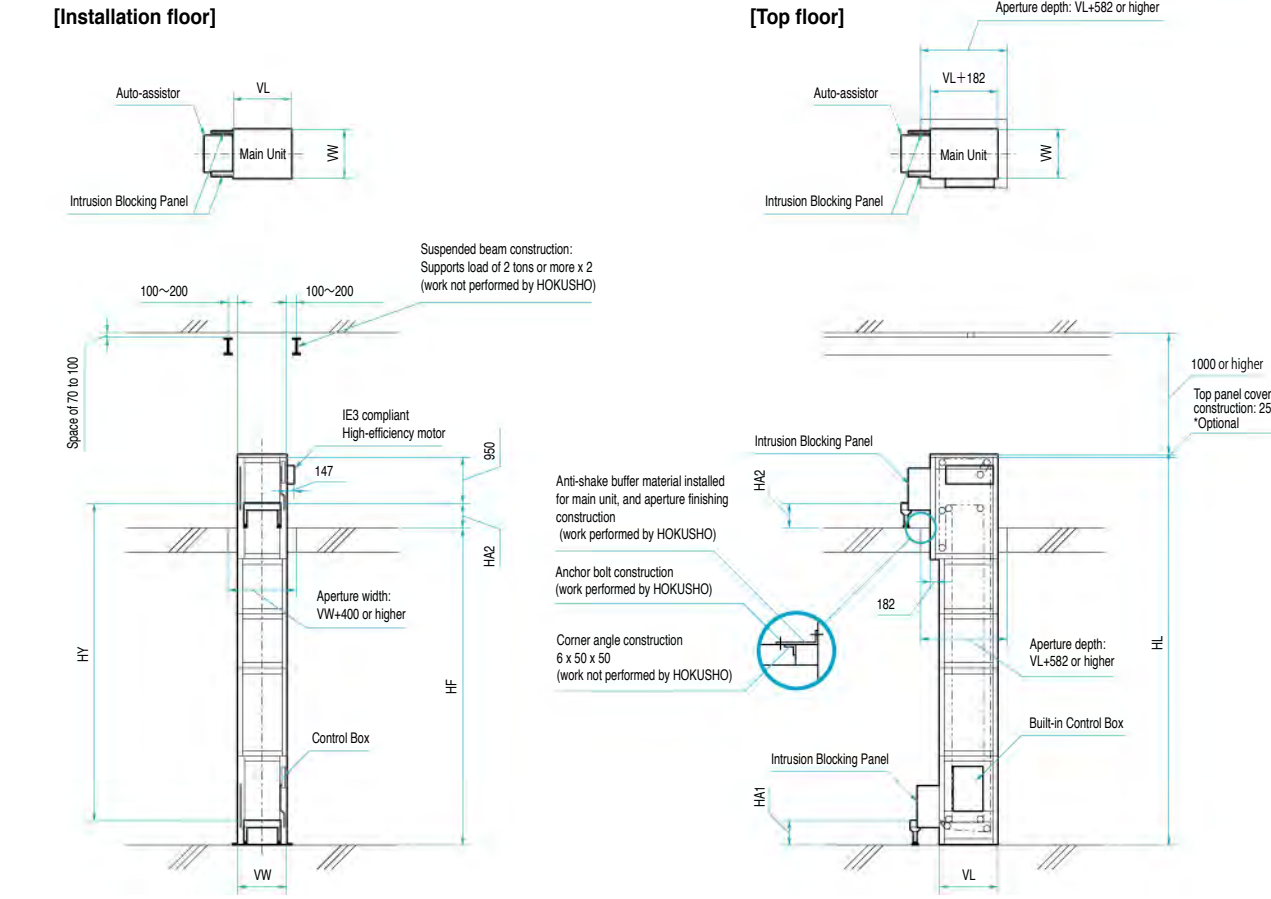
VW : Main unit width dimensions
VL : Main unit depth dimensions
HL : Height
HF : Floor height
HA : Cargo loading height
H : Max. cargo height
HY : Lifting height



■VES11-C dimensions reference image (mm)

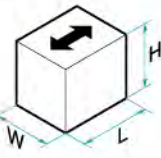
Main unit size ranks: width 05, depth 05 / 2F (transfer direction type: C) / with 1 auto-assistor per station

VW : Main unit width dimensions
VL : Main unit depth dimensions
HL : Height
HF : Floor height
HA : Cargo loading height
H : Max. cargo height
HY : Lifting height



■VES11-Z / VES11-C Size table

Main unit size ranks		Main unit dimensions		Max. cargo size			Max. load weight (per loading platform)	
Width (nominal)	Depth (nominal)	Width (mm)	Depth (mm)	Width (mm)	Length (mm)	Height (mm)	Weight (kg)	
		VW	VL	W	L	H	Z type	C type
02	04	700	1061	200	400	700	30	
	05		1188		500		30	
03	04	800	1061	300	400	700	30	
	05		1188		500		30	
04	04	900	1061	400	400	700	30	
	05		1188		500		30	
05	06	1000	1252	500	600	700	30	
	07		1379		700		30	



Reference chart supplemental points

- Cargo loading height (mm) : 500≤HA1≤787
350≤HA2
- ※A pit is needed if HA1 is made lower than 500. (Pit installation not performed by HOKUSHO)
- ※A frame is added if HA1 is made higher than 787. (Option)
- VES11-ZHeight (mm) : HL=HF+HA2+450
VES11-CHeight (mm) : HL=HF+HA2+950
- ※If there is a pit, please include pit depth when calculating.
- ※Max. HL is 15m.
- Min. cargo length (mm) : 270
- * The BDA48 [100P] unit's minimum cargo length is 310mm.
- * CDA48/57 [101.6P] unit's minimum cargo length is 320mm.
- ※Please contact us regarding cargo smaller than 270mm.

- Main unit ancillary work
 - Installation of anti-shake buffer material for main unit
 - Aperture finishing construction
 - Upper intrusion block cladding for the VES11-Z (optional) / Top panel cover construction (optional)
 - VES11-C top panel cover construction (optional)

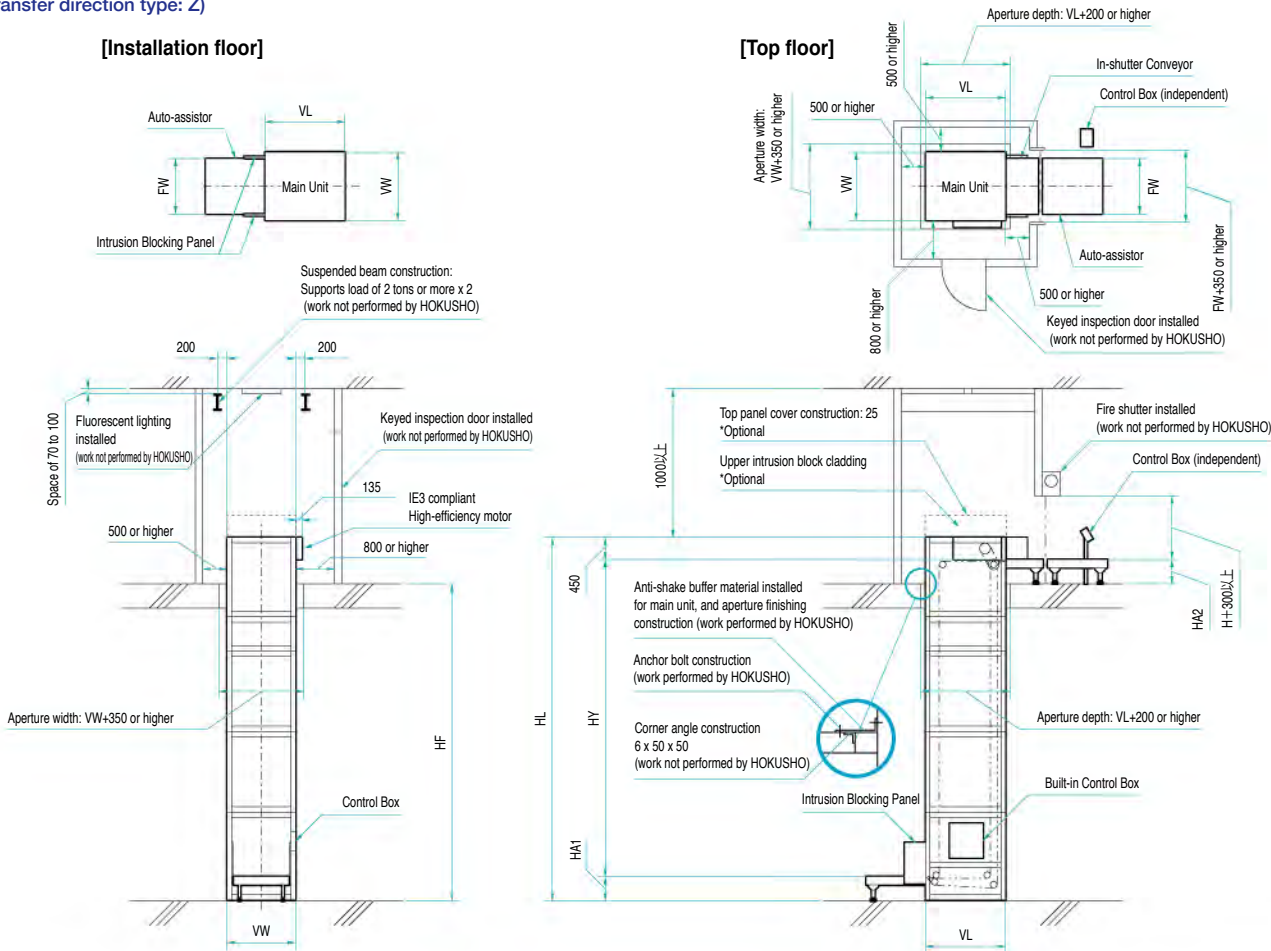


- Work not performed by HOKUSHO**
1. Please wire up/connect your primary power source to the HOKUSHO control box.
 2. Please install the suspended components.
 3. Please construct corner angles on floor aperture and pit corners.
4. Please install railings (of pipe, wood, or other material) around floor apertures.
 5. Please perform the concrete construction for installation of the main unit and horizontal conveyor.

■VEF11-Z dimensions reference image (mm)

Main unit size ranks: width 08, depth 08 / Installation inside top floor hoistway (fire shaft) / 2F (transfer direction type: Z)

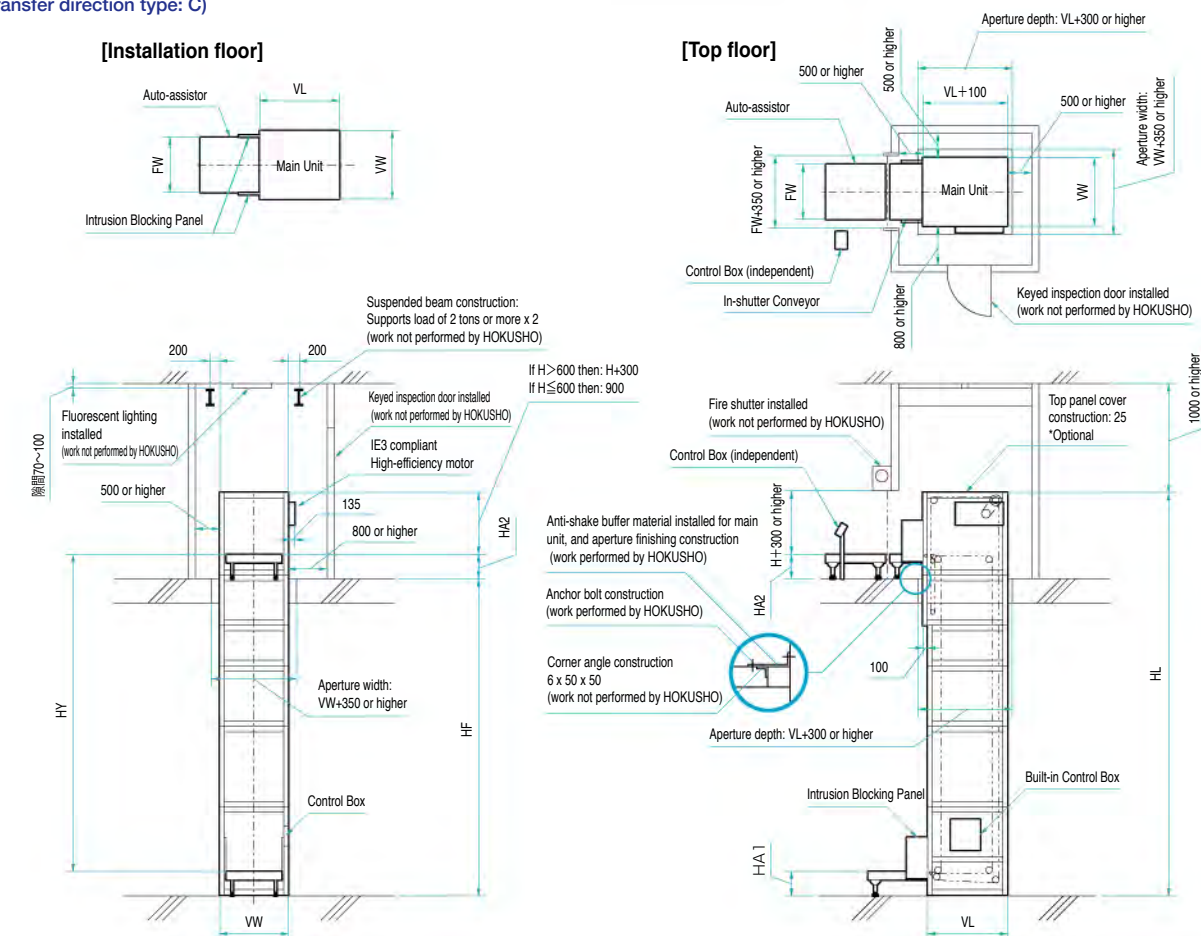
VW : Main unit width dimensions
VL : Main unit depth dimensions
HL : Height
HF : Floor height
HA : Cargo loading height
H : Max. cargo height
HY : Lifting height



■VEF11-C dimensions reference image (mm)

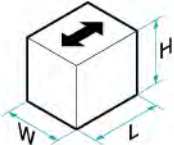
Main unit size ranks: width 08, depth 08 / Installation inside top floor hoistway (fire shaft) / 2F (transfer direction type: C)

VW : Main unit width dimensions
VL : Main unit depth dimensions
HL : Height
HF : Floor height
HA : Cargo loading height
H : Max. cargo height
HY : Lifting height



■VEF11-Z / VEF11-C Size table

Main unit size ranks		Main unit dimensions		Max. cargo size			Max. load weight (per loading platform)	
Width (nominal)	Depth (nominal)	Width (mm)	Depth (mm)	Width (mm)	Length (mm)	Height (mm)	Weight (kg)	
		VW	VL	W	L	H	Z type	C type
05	05	1100	1252	500	500	1000	100	80
	06		1405		650		100	80
	07		1481		700		100	80
	08		1634		850		100	80
	09		1709		950		100	80
	10		1785		1000		100	80
	11		1862		1100		100	80
06	05	1200	1252	600	500	1000	100	80
	06		1405		650		100	80
	07		1481		700		100	80
	08		1634		850		100	80
	09		1709		950		100	80
	10		1785		1000		100	80
	11		1862		1100		100	80
07	05	1300	1252	700	500	1000	100	80
	06		1405		650		100	80
	07		1481		700		100	80
	08		1634		850		100	80
	09		1709		950		100	80
	10		1785		1000		100	80
	11		1862		1100		100	80
08	05	1400	1252	800	500	1000	100	80
	06		1405		650		90	80
	07		1481		700		90	80
	08		1634		850		90	80
	09		1709		950		90	80
	10		1785		1000		80	80
	11		1862		1100		80	80
09	05	1500	1252	900	500	1000	100	80
	06		1405		650		90	80
	07		1481		700		90	80
	08		1634		850		90	80
	09		1709		950		90	80
	10		1785		1000		80	80
	11		1862		1100		80	80
10	05	1600	1252	1000	500	1000	70	70
	06		1405		650		60	60
	07		1481		700		60	60
	08		1634		850		60	60
	09		1709		950		60	60
	10		1785		1000		50	50
	11		1862		1100		50	50
11	05	1700	1252	1100	500	1000	70	70
	06		1405		650		60	60
	07		1481		700		60	60
	08		1634		850		60	60
	09		1709		950		60	60
	10		1785		1000		50	50
	11		1862		1100		50	50
12	05	1800	1252	1200	500	1000	70	70
	06		1405		650		60	60
	07		1481		700		60	60
	08		1634		850		60	60
	09		1709		950		60	60
	10		1785		1000		50	50
	11		1862		1100		50	50



Reference chart supplemental points

- Cargo loading height (mm) : $500 \leq HA1 \leq 787$
 $350 \leq HA2$
- ※ A pit is needed if HA1 is lower than 500. (pit installation not performed by HOKUSHO)
- Also, a frame is added if HA1 is made higher than 787. (Option)
- VEF11-Z height (mm) : $HL = HF + HA2 + 450$
- VEF11-C height (mm) : [If $H > 600$] $HL = HF + HA2 + H + 300$
[If $H > 600$] $HL = HF + HA2 + 900$
- ※ If there is a pit, please include pit depth when calculating.
- ※ Max. HL is 20m.
- Minimum cargo length (mm) : 300
- ※ The BDA48 [100P] unit's minimum cargo length is 310mm.
- ※ CDA48/57 [101.6P] unit's minimum cargo length is 320mm.
- ※ Please contact us regarding cargo smaller than 300mm.

- Main unit ancillary work
 - Installation of anti-shake buffer material for main unit
 - Aperture finishing construction
 - Upper intrusion block cladding for the VEF11-Z (optional) /
Top panel cover construction (optional)
 - VEF11-C top panel cover construction (optional)



VEF11-Z

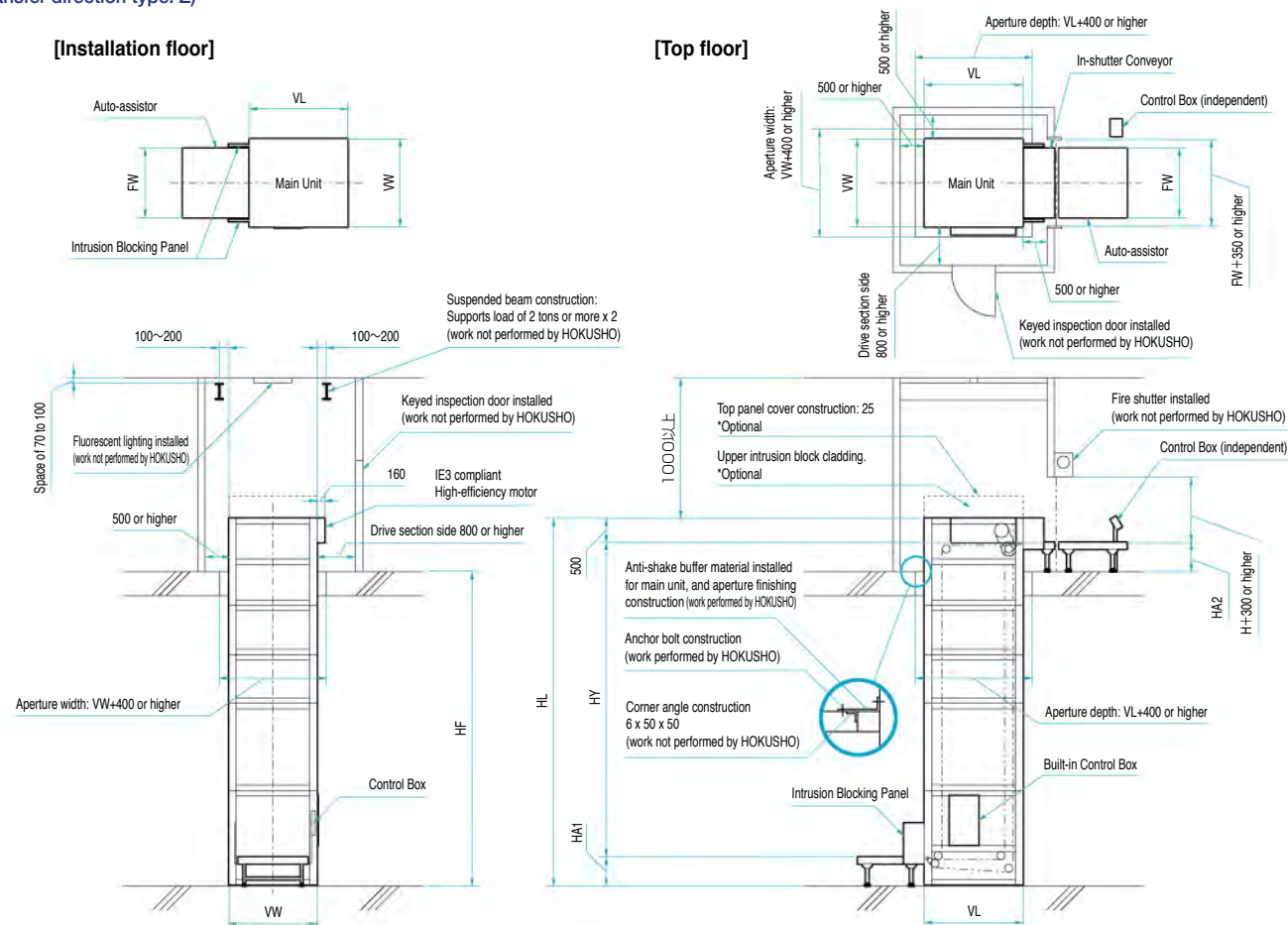
VEF11-C

Work not performed by HOKUSHO

1. Please wire up/connect your primary power source to the HOKUSHO control box.
2. Please install the fire shutter.
3. Please wire up/connect the fire alarm signal line to the HOKUSHO control box.
4. Please install the suspended components.
5. Please install fluorescent lighting (40 watt) inside the hoistway (fire shaft).
6. Please install the keyed inspection door. (Top floor)
7. Please create the necessary wiring holes in the hoistway (fire shaft).
8. Please construct corner angles on floor aperture and pit corners.
9. Please install railings (of pipe, wood, or other material) around floor apertures.
10. Please perform the concrete construction for installation of the main unit and horizontal conveyor.

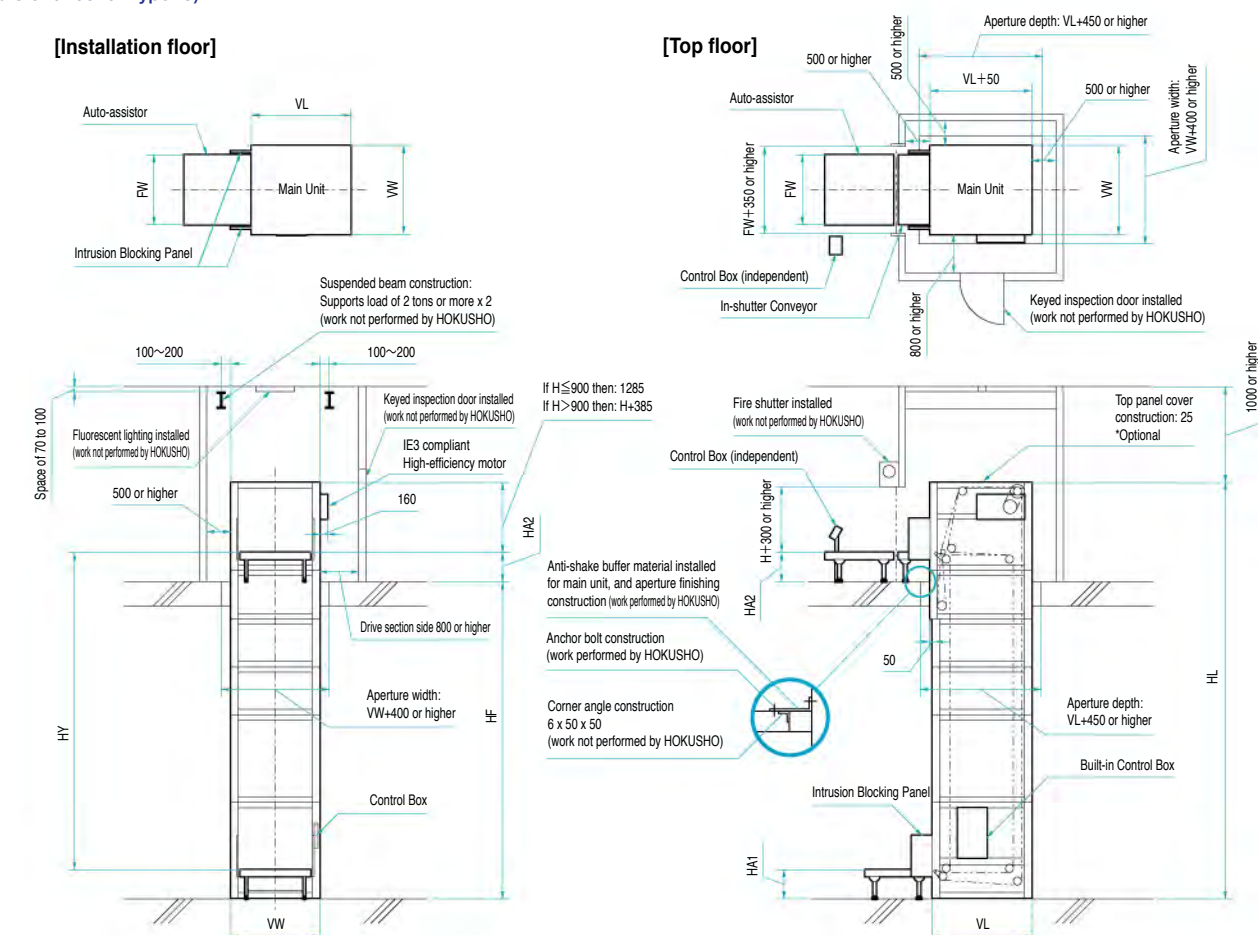
Main unit size ranks: width 11, depth 11 / Installation inside top floor hoistway (fire shaft) / 2F (transfer direction type: Z)

VW : Main unit width dimensions HL : Height HA : Cargo loading height
VL : Main unit depth dimensions HF : Floor height H : Max. cargo height
HY : Lifting height

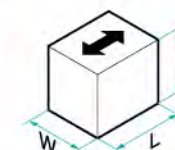


Main unit size ranks: width 11, depth 11 / Installation inside top floor hoistway (fire shaft) / 2F (transfer direction type: C)

VW : Main unit width dimensions HL : Height HA : Cargo loading height
VL : Main unit depth dimensions HF : Floor height H : Max. cargo height
HY : Lifting height



Main unit size ranks		Main unit dimensions		Max. cargo size				Max. load weight (per loading platform)
Width (nominal)	Depth (nominal)	Width (mm)	Depth (mm)	Width (mm)	Length (mm)		Height (mm)	Weight (kg)
		VW	VL	W	L		H	
08	08	1517	1725	820	Z type	C type	1050	200
	09		800		750			
	10		900		850			
	11		1000		950			
	12		1100		1050			
	13		1200		1150			
	14		1300		1250			
	15		1400		1350			
09	08	1617	1725	920	800	750	1050	200
	09		900		850			
	10		1000		950			
	11		1100		1050			
	12		1200		1150			
	13		1300		1250			
	14		1400		1350			
	15		1500		1450			
10	08	1717	1725	1020	800	750	1050	200
	09		900		850			
	10		1000		950			
	11		1100		1050			
	12		1200		1150			
	13		1300		1250			
	14		1400		1350			
	15		1500		1450			
11	08	1817	1725	1120	800	750	1050	200
	09		900		850			
	10		1000		950			
	11		1100		1050			
	12		1200		1150			
	13		1300		1250			
	14		1400		1350			
	15		1500		1450			
12	08	1917	1725	1220	800	750	1050	200
	09		900		850			
	10		1000		950			
	11		1100		1050			
	12		1200		1150			
	13		1300		1250			
	14		1400		1350			
	15		1500		1450			
13	08	2017	1725	1320	800	750	1050	200
	09		900		850			
	10		1000		950			
	11		1100		1050			
	12		1200		1150			
	13		1300		1250			
	14		1400		1350			
	15		1500		1450			
14	08	2117	1725	1420	800	750	1050	200
	09		900		850	200		
	10		1000		950	190		
	11		1100		1050	190		
	12		1200		1150	180		
	13		1300		1250	180		
	14		1400		1350	170		
	15		1500		1450	170		
15	08	2217	1725	1520	800	750	1050	200
	09		900		850	200		
	10		1000		950	190		
	11		1100		1050	190		
	12		1200		1150	180		
	13		1300		1250	180		
	14		1400		1350	170		
	15		1500		1450	170		



- Cargo loading height (mm) : $600 \leq HA1 \leq 887$
 $350 \leq HA2$
- ※ A pit is needed if HA1 is made lower than 600. (Pit installation not performed by HOKUSHO)
- ※ A frame is added if HA1 is made higher than 887. (Option)
- VEP11-Z height (mm) : $HL = HF + HA2 + 500$
VEP11-C height (mm) : [If $H \leq 900$] $HL = HF + HA2 + 1285$
[If $H > 900$] $HL = HF + HA2 + H + 385$
- ※ If there is a pit, please include pit depth when calculating.
- ※ Max. HL is 25m.
- Min. cargo length (mm) :
Z type = 375
C type = 550 ※ Please contact us regarding cargo smaller than 550mm.

- Main unit ancillary work
 - ☐ Installation of anti-shake buffer material for main unit
 - ☐ Aperture finishing construction
 - ☐ Upper intrusion block cladding for the VEP11-Z (optional) /
Top panel cover construction (optional)
 - ☐ VEP11-C top panel cover construction (optional)



VEP11-Z

VEP11-C

1. Please wire up/connect your primary power source to the HOKUSHO control box.
2. Please install the fire shutter.
3. Please wire up/connect the fire alarm signal line to the HOKUSHO control box.
4. Please install the suspended components.
5. Please install fluorescent lighting (40 watt) inside the hoistway (fire shaft).
6. Please install the keyed inspection door. (Top floor)
7. Please create the necessary wiring holes in the hoistway (fire shaft).
8. Please construct corner angles on floor aperture and pit corners.
9. Please install railings (of pipe, wood, or other material) around floor apertures.
10. Please perform the concrete construction for installation of the main unit and horizontal conveyor.

Main unit size ranks: width 04, depth 04 / 2F (transfer direction type: Z) /
Control box built into main unit / with 1 auto-assistor per station

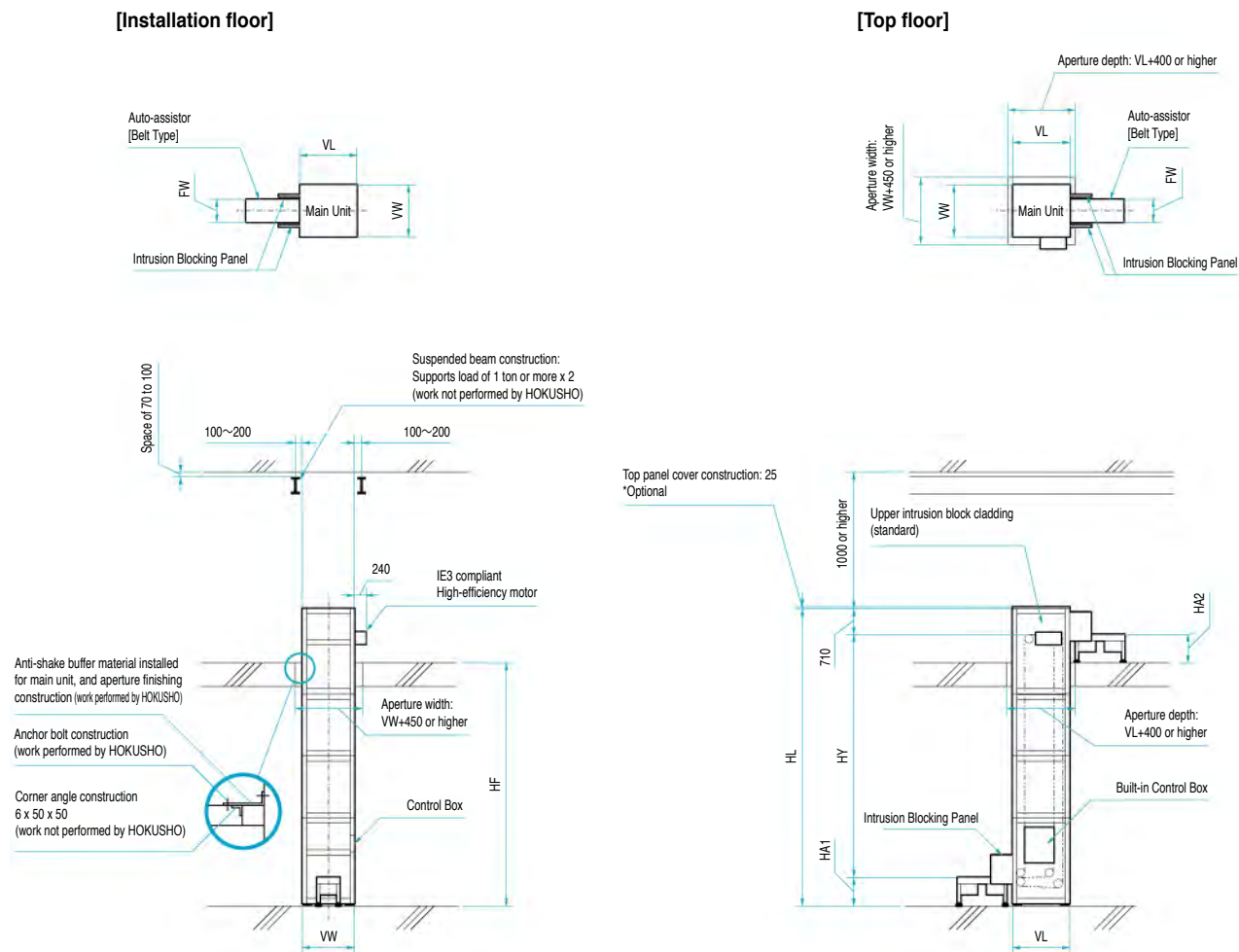
VW : Main unit width dimensions HL : Height HA : Cargo loading height
VL : Main unit depth dimensions HF : Floor height H : Max. cargo height
HY : Lifting height

*The main unit exterior cladding is not shown in the structural chart.

The Belt Ventilator mechanism consists of four endless resin belts with multiple loading platforms. Since these sequentially raise (/lower) cargo, the system continuously transfers cargo while always keeping it level.

- In combination with the belt type auto-assistor, this allows for 100% oilless operation. (Standard specifications)

VBS14-Z (Belt Hoist Type)



Main unit size ranks		Main unit dimensions		Max. cargo size			Max. load weight (per loading platform)
Width (nominal)	Depth (nominal)	Width (mm)	Depth (mm)	Width (mm)	Length (mm)	Height (mm)	Weight (kg)
		VW	VL	W	L	H	
03	04	970	1220*	300	400	500	20
	05		1320*		500		
	06		1420*		600		
	07		1520*		700		
04	04	1070	1220*	400	400	500	20
	05		1320*		500		
	06		1420*		600		
	07		1520*		700		
05	04	1170	1220*	500	400	500	20
	05		1320*		500		
	06		1420*		600		
	07		1520*		700		

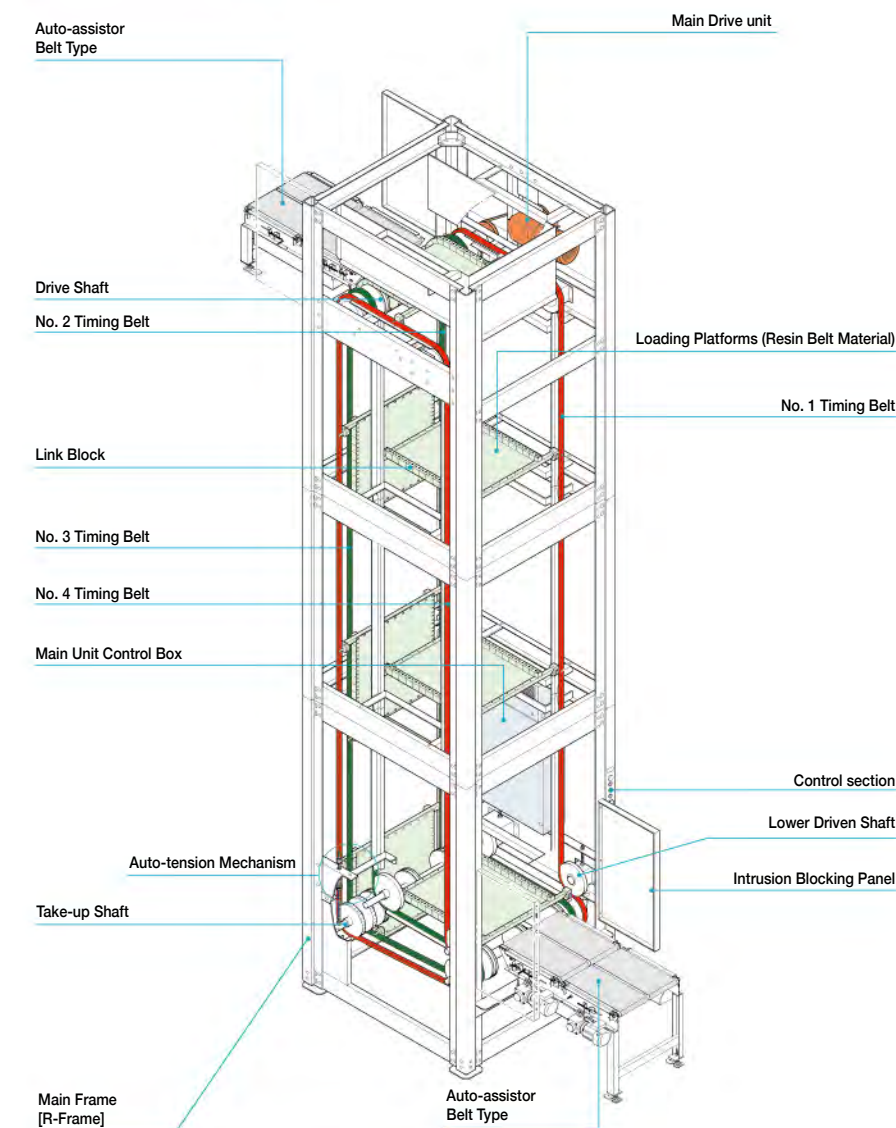
*In principle the formula [length of cargo L \geq height of cargo H] is applied.
 *The depth dimension at the top of the main unit can be reduced by 100 mm. (Optional)
 Please contact us for more details.

- Cargo loading height (mm): $600 \leq HA1 \leq 700$
500 \leq HA2
- ※A pit is needed if HA1 is made lower than 600. (Pit installation not performed by HOKUSHO)
- ※A frame is added if HA1 is made higher than 700. (Option)
- VBS14-Z height (mm): $HL = HF + HA2 + 710$
- ※If there is a pit, please include pit depth when calculating.
- ※Max. HL is 5m.
- Min. cargo length (mm): 230

- Main unit ancillary work
 - ☐ Installation of anti-shake buffer material for main unit
 - ☐ Aperture finishing construction
 - ☐ Upper intrusion block cladding (standard) / Top panel cover construction (optional)

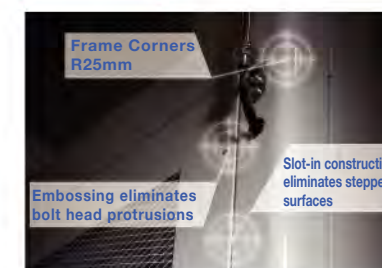
**Work not performed
by HOKUSHO**

1. Please wire up/connect your primary power source to the HOKUSHO control box.
2. Please install the suspended components.
3. Please construct corner angles on floor aperture and pit corners.
- 4 Please install railings (of pipe, wood, or other material) around floor apertures.
5. Please perform the concrete construction for installation of the main unit and horizontal conveyor.



Made from high-quality urethane, offering superior oil and ozone resistance.

*The drive section cover is a special order (custom).



Thanks to its flat surface construction, the "R Frame" limits the potential risk of contact and snagging between machines, resulting in a visually appealing and uncluttered external appearance.

*The tunnel cover (transparent type) is a special order (custom).

Automatic Loading/Unloading Conveyors: Indispensable for Safe Work with Vertical Transfer Machines

〈Case Item Transferrin〉 Automatic Loading/Unloading Conveyor

Auto-assistor Roller Type BDA48 (Ribbed Belt Drive) CDA48/57 (Chain Drive)

The auto-assistor is a conveyor that is indispensable to a fully automated transfer system. Installed on each floor station of a vertical transfer system, it links up with the Vertilator's loading platforms, enabling smooth in-and-out transfer of cargo. In addition, linking it to a variety of horizontal conveyors allows you to construct a range of three-dimensional automated transfer lines.

Features

A wealth of optional extras and variable control

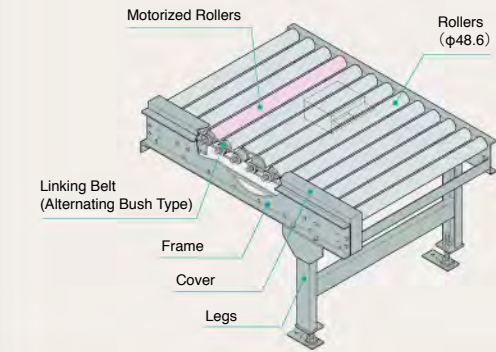
Select from three types (roller, chain, or belt) depending on the shape of the base of the cargo. In addition, we can provide conveyors and many optional extras to meet a variety of needs.

Eco-Friendly Design for Greater Economy

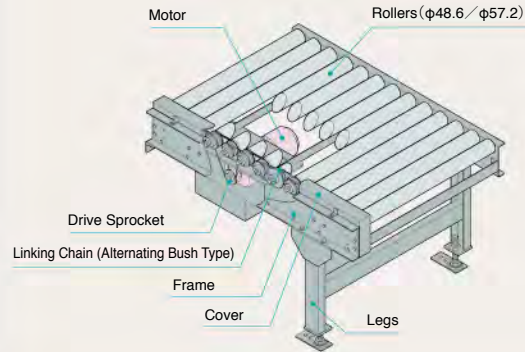
The auto-assistor is extremely economical, with minimal running costs thanks to cargo-carrying conveyors activating sequentially, as well as energy-saving control that stops conveyors immediately after cargo has passed through (sequential start/stop control).



■BDA48 Structural Chart



■CDA48 / 57 Structural Chart



■BDA48 Main Data

■Installation location: Indoors *Ambient temperature should be between 0 and 40°C. Please consult us before installing in a location facing outdoors. ●An in-shaft conveyor will be necessary if installed within a fire shaft.	
■Cargo item size (mm) / P: Roller pitch	
Max. W 1200 × L 1100	
Min. W 200 × L 235(75P) 310(100P)	
※Guideline transferable cargo weight: <30kg	
■Cargo loading height HA(mm) / 200 ≤ HA ≤ 2000	
■Transfer speed (m/min.) / 15 20 25 30 36	
■Roller specifications (mm) / φ48.6×t1.6	
■Roller pitch (mm) / 75P 100P	
■Frame (mm) / □130×30×t3.2	
■Motor / motorized rollers	
■Linking belt / Ribbed belt	
※Since this is ribbed belt-driven, there is no need to oil the mechanism. It also boasts excellent low-noise performance.	

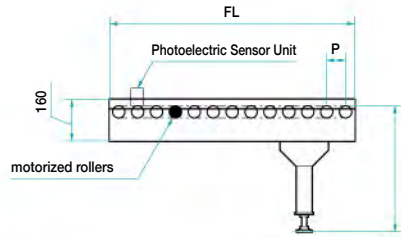
■CDA48 / 57 Main Data

■Installation location: Indoors *Ambient temperature should be between 0 and 40°C. Please consult us before installing in a location facing outdoors. ●An in-shaft conveyor will be necessary if installed within a fire shaft.	
■Cargo item size (mm) / P: Roller pitch	
CDA48 : Max. W 1200 × L 1100	
Min. W 200 × L 240(76.2P) 320(101.6P)	
※Guideline transferable cargo weight: <60kg	
CDA57 : Max. W 1700 × L 1500	
Min. W 200 × L 320(101.6P)	
※Guideline transferable cargo weight: <200kg	
■Cargo loading height HA (mm) / 300 ≤ HA ≤ 2000	
When the smallest conveyance thing publication height is less than 300 mm, please inquire.	
■Transfer speed (m/min.) / CDA48 : 15 20 25 30 36 CDA57 : 13 15 18 20 25 30	
■Roller specifications (mm) / CDA48 : φ48.6×t1.6 CDA57 : φ57.2×t2.3	
■Roller pitch (mm) / CDA48 : 76.2P • 101.6P CDA57 : 101.6P	
■Frame (mm) / □130×30×t3.2	
■Motor / geared motor (with brake)	
Motor capacity (kW) : 0.1 0.2 0.4	
■Linking chain / #40 (roller chain)	

Auto-assistor

●When installed in the hoistway (fire shaft), in addition to the auto-assistor (automatic loading/unloading conveyor), an in-shutter conveyor is also installed.
Please contact us for details.

■BDA48 dimensions reference image (mm)



FW : Auto-assistor machine width
FL : Auto-assistor machine length
HA : Cargo loading height
P : Roller pitch

Roller Type Auto-assistor type display

BD A 48-05 06- C075

[Basic Code] BD CD		[Nominal width] 48:48.6 57:57.2 (mm)	[Nominal length] 05:75 06:76.2 100:100 101:101.6 (mm)	[Roller pitch] 075:75 076:76.2 100:100 101:101.6 (mm)
[Auto-assistor]		H: General motor C: Motorized rollers		

■BDA48 Size table

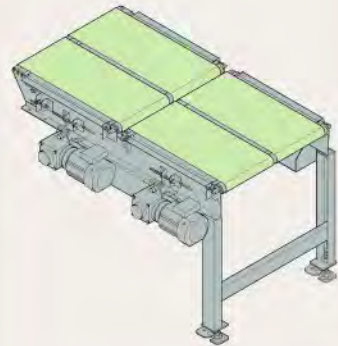
Size ranks	BDA48	Max. cargo size
Width (nominal)	Machine width (mm)	width (mm)
	FW	W
04	532	300
05	632	400
06	732	500
07	832	600
08	932	700
09	1032	800
10	1132	900
11	1232	1000
12	1332	1100
13	1432	1200

※Minimum Cargo item size (mm) /
75P : W200×L235 100P : W200×L310

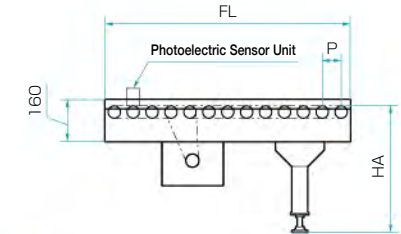
Size ranks	BDA48 P : 75	BDA48 P : 100	Max. cargo size
Length (nominal)	Machine length (mm)	Machine length (mm)	Length (mm)
	FL	FL	L
05	672	672	400
055	747	—	450
06	822	772	500
07	897	872	600
075	972	—	650
08	1047	972	700
09	1122	1072	800
10	1197	1172	900
11	1272	1272	1000
12	1347	—	1050
13	1422	1372	1100

●Auto-assistor Belt Type (BCA) for Belt Vertilator

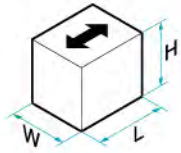
■BCA Structural Chart



■CDA48 / 57 dimensions reference image (mm)



FW : Auto-assistor machine width
FL : Auto-assistor machine length
HA : Cargo loading height
P : Roller pitch



■CDA48 / 57 Size table

Size ranks	CDA48	CDA57	Max. cargo size
Width (nominal)	Machine width (mm)	Machine width (mm)	width (mm)
	FW	FW	W
04	532	—	300
05	632	—	400
06	732	732	500
07	832	—	600
08	932	932	700
09	1032	—	800
10	1132	1132	900
11	1232	—	1000
12	1332	—	1100
13	1432	1432	1200
15	—	1632	1400
18	—	1932	1700

※Minimum Cargo item size (mm) / 76.2P : W200×L240 101.6P : W200×L320

Size ranks	CDA48 P : 76.2	CDA48 P : 101.6	CDA57 P : 101.6	Max. cargo size
Length (nominal)	Machine length (mm)	Machine length (mm)	Machine length (mm)	Length (mm)
	FL	FL	FL	L
05	686	690	—	400
055	762	—	—	450
06	838	791	791	500
07	914	893	—	600
08	991	994	994	700
085	1067	—	—	750
09	1143	1096	—	800
10	1219	1198	1198	900
11	1295	1299	—	1000
13	1372	1401	1401	1100
14	1448	1502	—	1200
15	—	—	1604	1300
17	—	—	1807	1500

APPLICATION

※ Previous models as well as various optional extras and special specifications are included in the items listed here.



Food product production plant [Bag Object] /Belt Ventilator



Health care product production plant [Specialized Box]



Fashion accessory factory [Carton Case]



APPLICATION

※ Previous models as well as various optional extras and special specifications are included in the items listed here.



Resin container factory [Carton Case]



Health product distribution center [Plastic Container]

APPLICATION

※ Previous models as well as various optional extras and special specifications are included in the items listed here.



Room temperature convenience store center [Plastic Container]



Beverages product production plant [Carton Case]



Leisure park [Rubber Dinghy]



Home appliance production plant [Carton Case] * Aluminum Cladding (Custom)



Electric/electronic components factory [Carton Case]



Foodstuffs/beverages distribution center [Carton Case]



APPLICATION

※Previous models as well as various optional extras and special specifications are included in the items listed here.



Recycle Center [Plastic Container]



Frozen food production plant [Specialized Plastic Case] *Stainless Steel (Custom)



Meters and gauges production plant [Mid-Process Products]



Consultations and inquiries FAX paper

Company name		Name	
Address		Email address	
State/ province/ prefecture		Department	Position
City/ ward/ county		Planned installation location	
Telephone () - (Extension)		State/ province/ prefecture	
		City/ ward/ county	
*Town/village name is not required.			

※The information you have provided will be used for meetings with you and sending various reference materials.

Vertilator <small>Light Duty</small>		VES11 / VEF11	
Vertilator <small>Medium-Duty</small>		VEP11	
Belt Vertilator <small>Light Duty</small>		VBS14	
1. Cargo shape	Carton Case Plastic Container Bag Object		
※Please also include the shape of the cargo and provide details.			
2. Cargo size/weight	W × L × H Weight Max. <input type="text"/> mm <input type="text"/> mm <input type="text"/> mm <input type="text"/> kg W × L × H Weight Min. <input type="text"/> mm <input type="text"/> mm <input type="text"/> mm <input type="text"/> kg		
3. Max. transfer performance	Per hour <input type="text"/> Units		
4. Operation time	Per day <input type="text"/> Hours		
5. Transfer direction format	Z type: Front-to-rear facing C type: Front-to-front facing		
6. Usage format	Transfer up and down Up only Down only		
7. Height to upper level	From floor surface of installation level to floor surface of top floor <input type="text"/> mm From floor surface of top floor to ceiling surface <input type="text"/> mm		
8. Cargo loading height	From floor surface of installation level to auto-assistor surface <input type="text"/> mm From floor surface of top floor to auto-assistor surface <input type="text"/> mm		
9. Power supply	Three-phase AC200V/60Hz Three-phase AC200V/50Hz Other		
10. Cladding type	Sheet steel/Expanded sheet/Resin (transparent window with sheet steel frame specifications)		
11. Paintwork color (standard)	Ivory Light gray ※Powder coating (full gloss) finish. ※Lead-free paint is used. *Specifying the color requires a special order (custom).		
12. Installation location	Indoors (outdoors) ※Please inform us if you have any requirements concerning fire compartments etc. ※Please inform us regarding the environment in which you will install the equipment if it will be used with chemicals, in low-temperature warehouses, or handle dangerous items etc. ※Outdoor installation will be treated as a custom order. Please contact us for details.		
13. Other	Please contact us for any other specifications.		