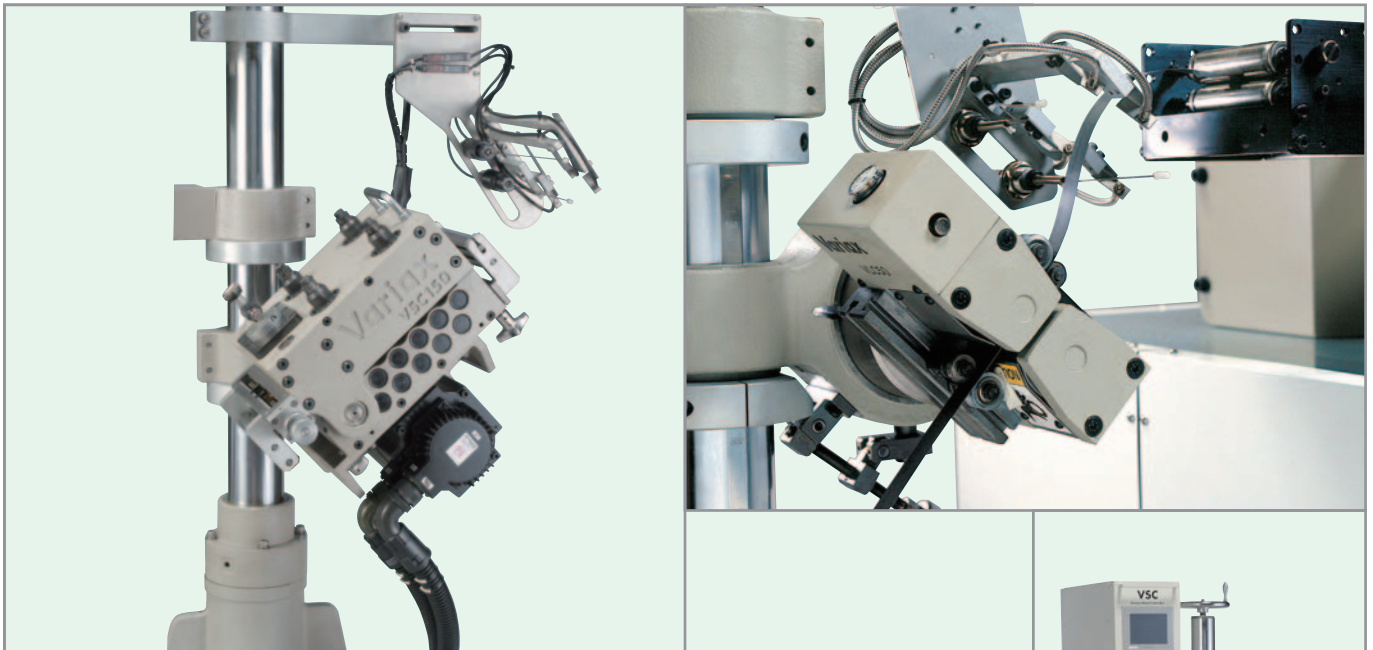
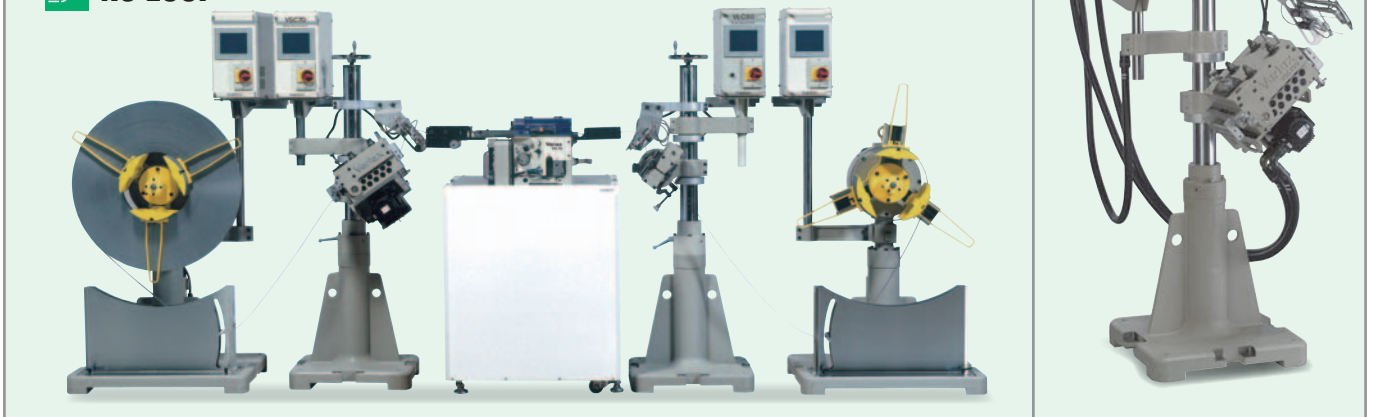


PRECISION ADJUSTABLE FEED

# Variax vsc NC LOOP Series / VLC NC LOOP Series



 NC LOOP

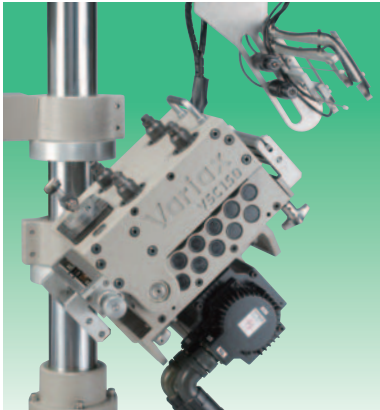


# Producing the ideal material loop.

**Variax**

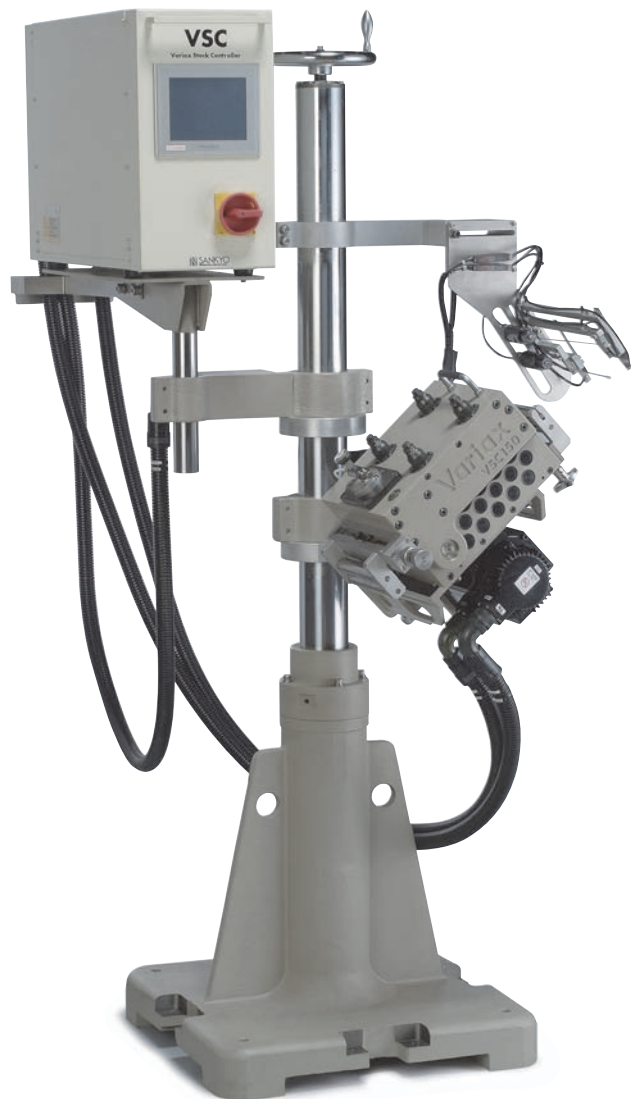
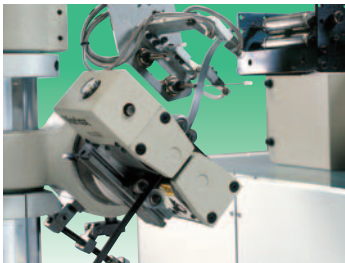
## VSC series

VSC70/150/400



## VLC series

VLC50/150/400



## Features

- Employ the high-resolution high-torque servo motor drive.
- To eliminate the bending of the material near the entrance loop.
- Possible to supply-eject the material at creep speed.
- Feed conditions are set by full-color touch screen.
- Integrating a leveler function that corrects the rolling habits of a material.

Sankyo developed the NC loop controller in order to create the ideal loop shapes required by the feeding device, using servo technology. This VLC sets up optimum feeding by forming ideal loops in the space allowed, taking advantage of the spring characteristics of materials and stabilizing the loop using a sensor and servo control. The VLC has excellent handling characteristics in that it does not scratch, kink or dent material and can improve both quality and productivity.

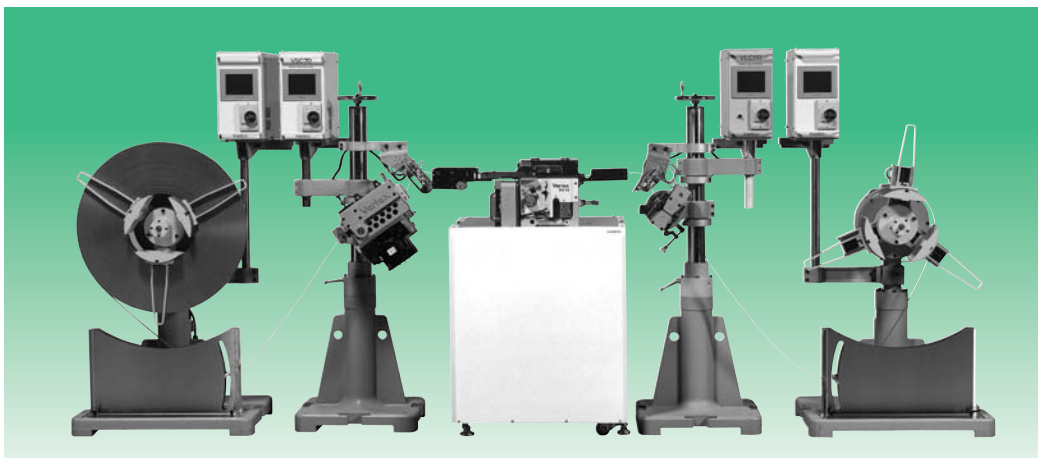
# Outline and Specifications

## Specifications (VSC)

Size	Unit	VSC70	VSC150	VSC400
Feed length	mm	0 to 999	0 to 999	0 to 999
Material thickness	mm	0.2 to 1	0.2 to 1	0.2 to 1
Grip force	N	350 (at 490-kPa air pressure)	700 (at 490-kPa air pressure)	1470 (at 490-kPa air pressure)
Maximum material width	mm	70	150	400
Maximum strokes	min <sup>-1</sup>	3000	3000	3000
Maximum feed rate	m/min	100	100	100
Operating air pressure	kPa	490 to 690	490 to 690	490 to 690
Operating power supply	V	200 VAC three phase, ±10%		
Paint color		5Y7/1	5Y7/1	5Y7/1
Product weight	kg	Approx. 320 (Including stand)	Approx. 330 (Including stand)	Approx. 1000
Product Specification Page		P3	P4	P5

## Specifications (VLC)

Size	Unit	VLC50	VLC150	VLC400
Feed length	mm	0 to 999	0 to 999	0 to 999
Material thickness	mm	0.2 to 1	0.2 to 1	0.2 to 1
Grip force	N	350 (at 490-kPa air pressure)	1500 (at 490-kPa air pressure)	1500 (at 490-kPa air pressure)
Maximum material width	mm	50	150	400
Maximum strokes	min <sup>-1</sup>	3000	3000	3000
Maximum feed rate	m/min	150	100	100
Operating air pressure	kPa	490 to 588	490 to 690	490 to 690
Operating power supply	V	200 to 230 VAC $\pm 10\%$ / $-15\%$ , single phase, 50/60 Hz		
Paint color		5Y7/1	5Y7/1	5Y7/1
Product weight	kg	250	270	330
Product Specification Page		P7	P8	P9



An example of installing the VSC series in front of a feeder and the VLC series at a later stage in the press process

# VSC70/VSC150

## VSC70 overall dimensions

[Unit:mm]

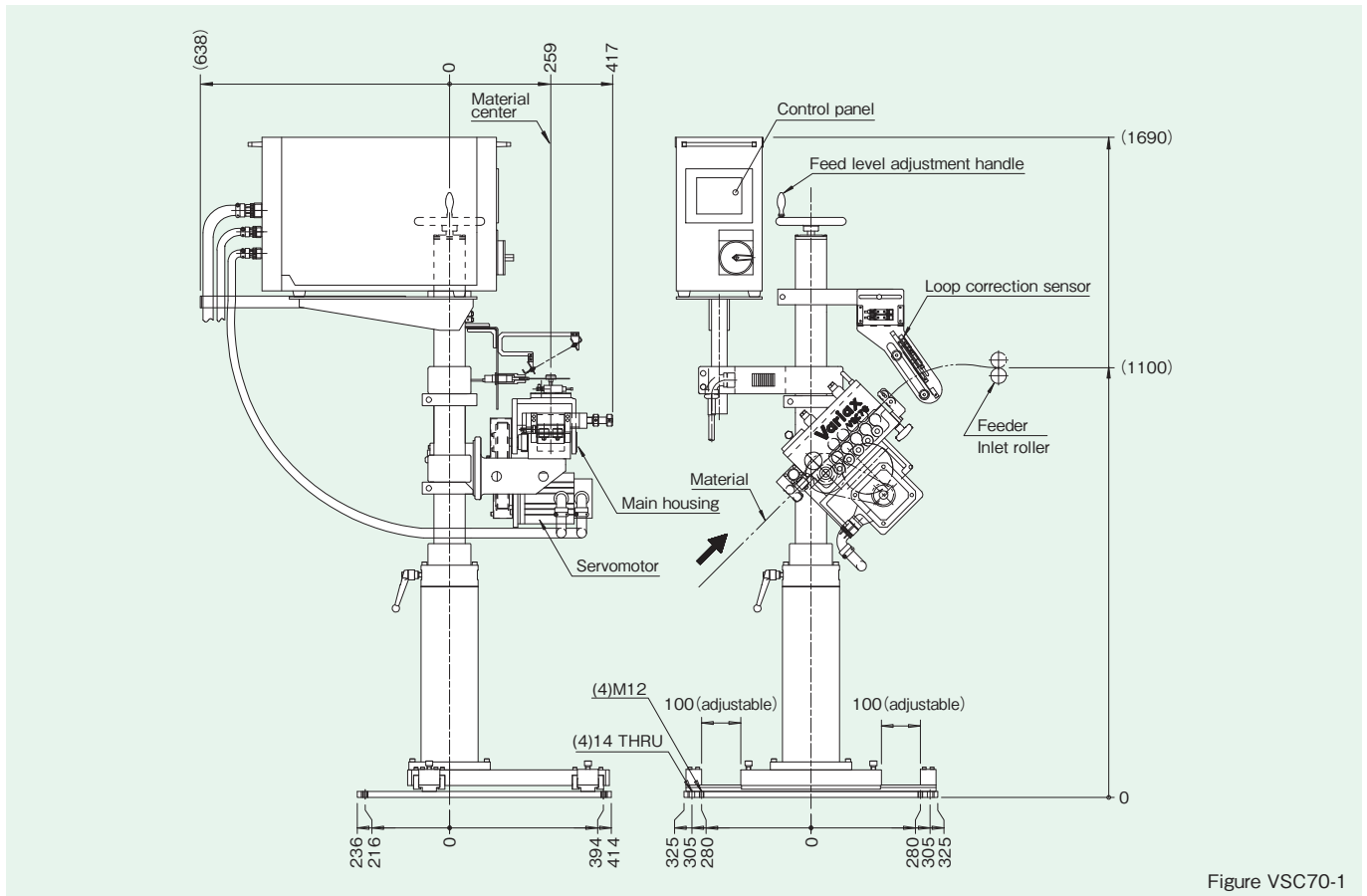


Figure VSC70-1

## VSC70 main housing dimensions

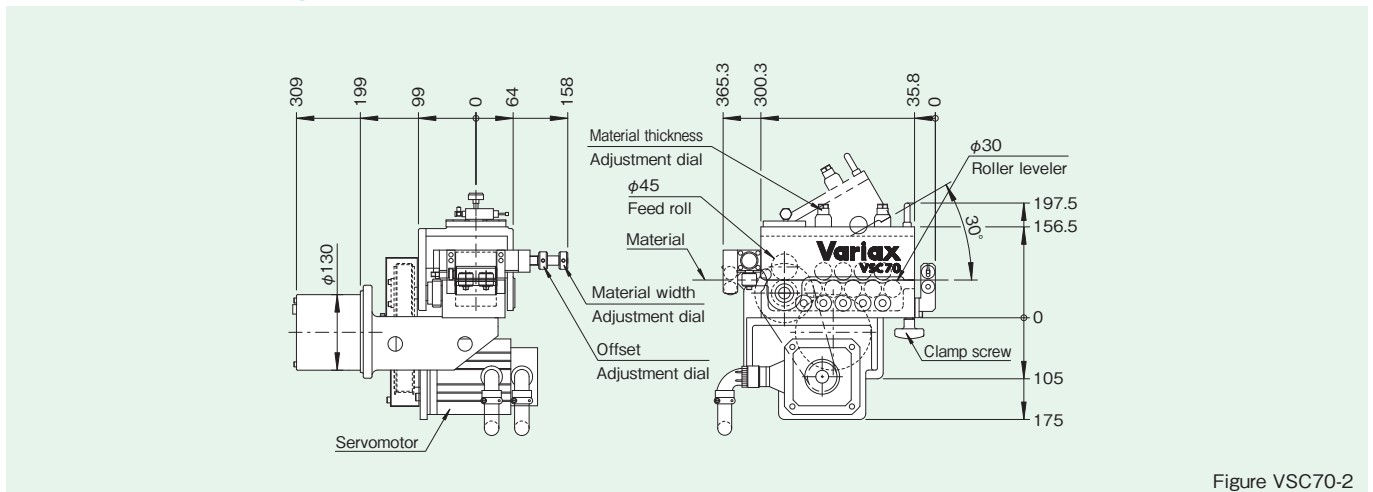


Figure VSC70-2

## Specification table

Characteristic	Data
Feed length	0 to 999 [mm]
Material thickness	0.2 to 1 [mm]
Gripping force	350 (at 490-kPa air pressure) [N]
Maximum material width	70 [mm]
Maximum number of strokes	3000 [min <sup>-1</sup> ]
Maximum feed speed	100 [m/min]

Characteristic	Data
Operating air pressure	490 to 690 [kPa]
Operating power supply	200 VAC three phase [V]
Input power supply capacity	7.5 [kVA]
Product weight	Approx. 320 (Including stand) [kg]

1[N·m] ≒ 0.102[kgf·m]

VSC150 overall dimensions

[Unit:mm]

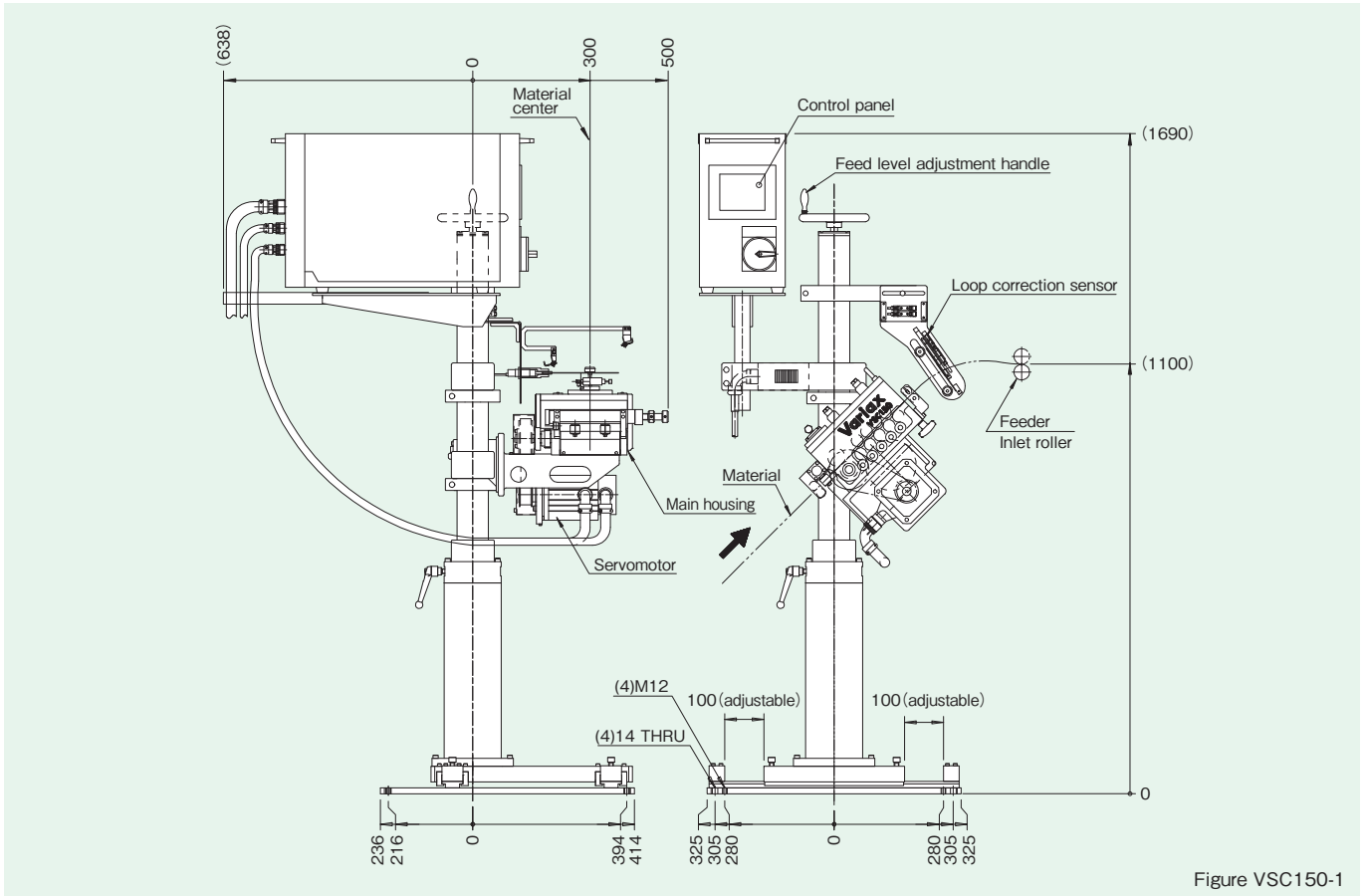


Figure VSC150-1

VSC150 main housing dimensions

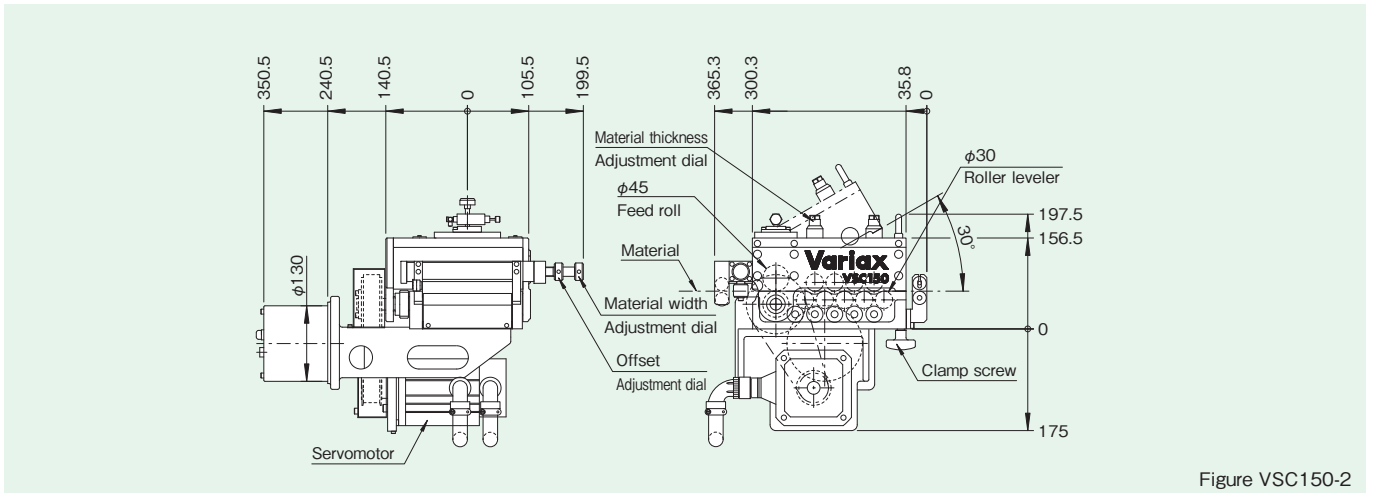


Figure VSC150-2

Specification table

Characteristic	Data
Feed length	0 to 999 [mm]
Material thickness	0.2 to 1 [mm]
Gripping force	700 (at 490-kPa air pressure) [N]
Maximum material width	150 [mm]
Maximum number of strokes	3000 [min <sup>-1</sup> ]
Maximum feed speed	100 [m/min]

Characteristic	Data
Operating air pressure	490 to 690 [kPa]
Operating power supply	200 VAC three phase [V]
Input power supply capacity	7.5 [kVA]
Product weight	Approx. 330 (Including stand) [kg]

1[N·m] ≐ 0.102[kgf·m]

# VSC400

## VSC400 overall dimensions

[Unit:mm]

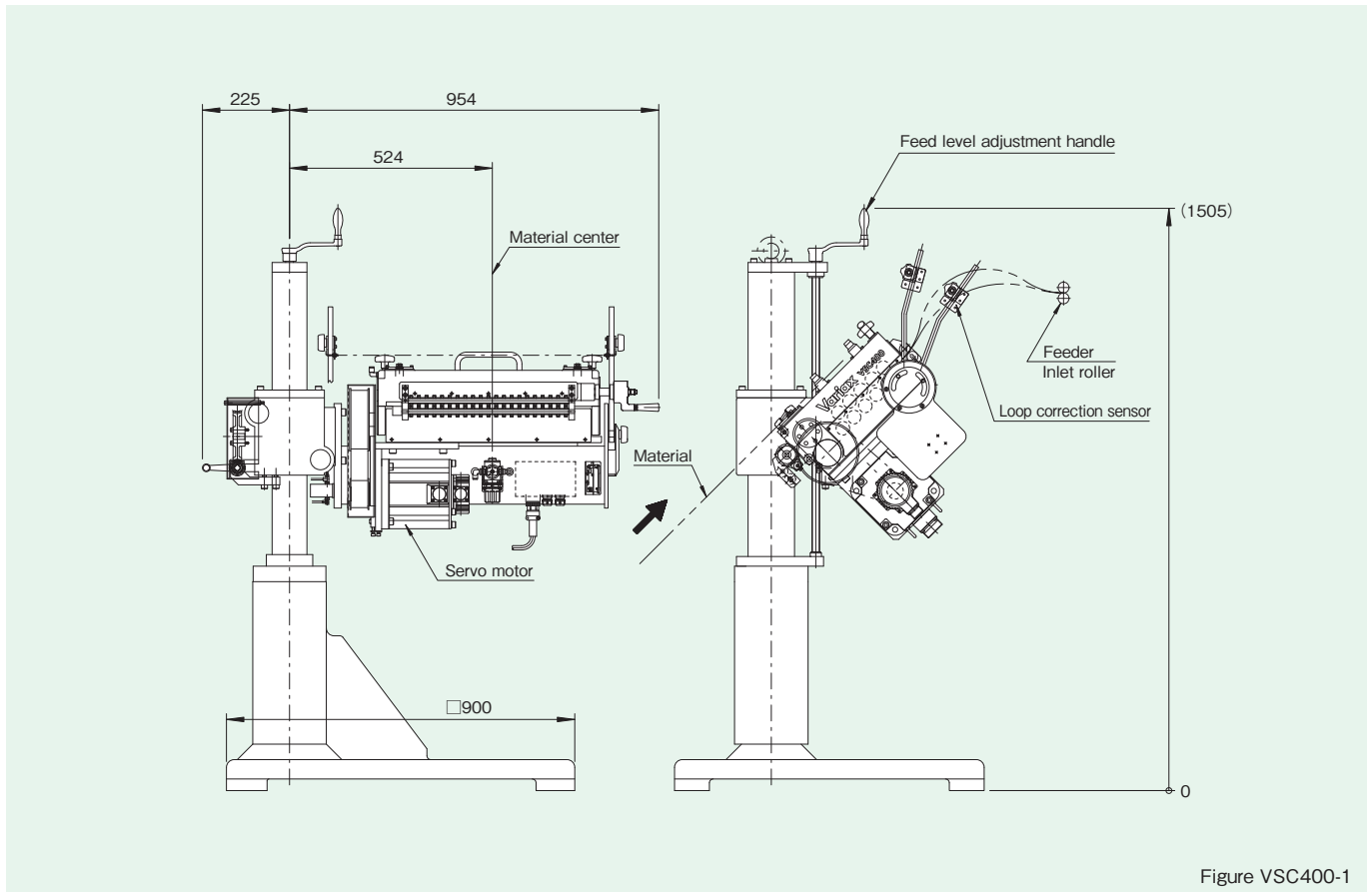


Figure VSC400-1

## VSC400 main housing dimensions

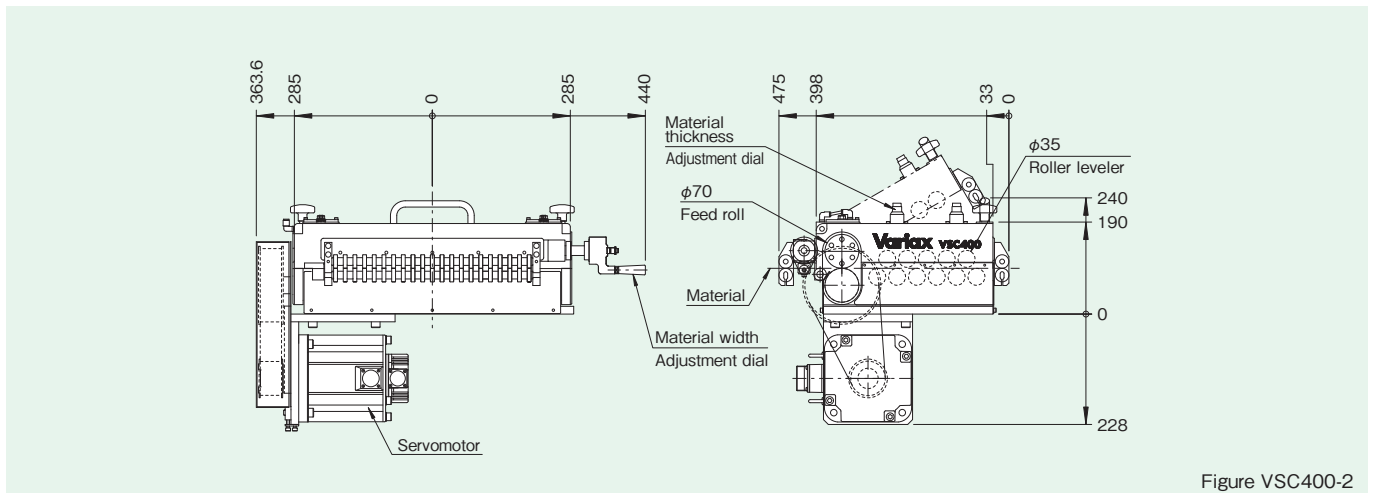


Figure VSC400-2

## Specification table

Characteristic	Data
Feed length	0 to 999 [mm]
Material thickness	0.2 to 1 [mm]
Gripping force	1470 (at 0.5-MPa supply air pressure) [N]
Maximum material width	400 [mm]
Maximum number of strokes	3000 [min <sup>-1</sup> ]
Maximum feed speed	100 [m/min]

Characteristic	Data
Operating air pressure	490 to 690 [kPa]
Operating power supply	200 VAC three phase [V]
Input power supply capacity	7.5 [kVA]
Product weight	1000 [kg]
	1[N·m] ≅ 0.102[kgf·m]

### Control panel dimensional drawings

[Unit:mm]

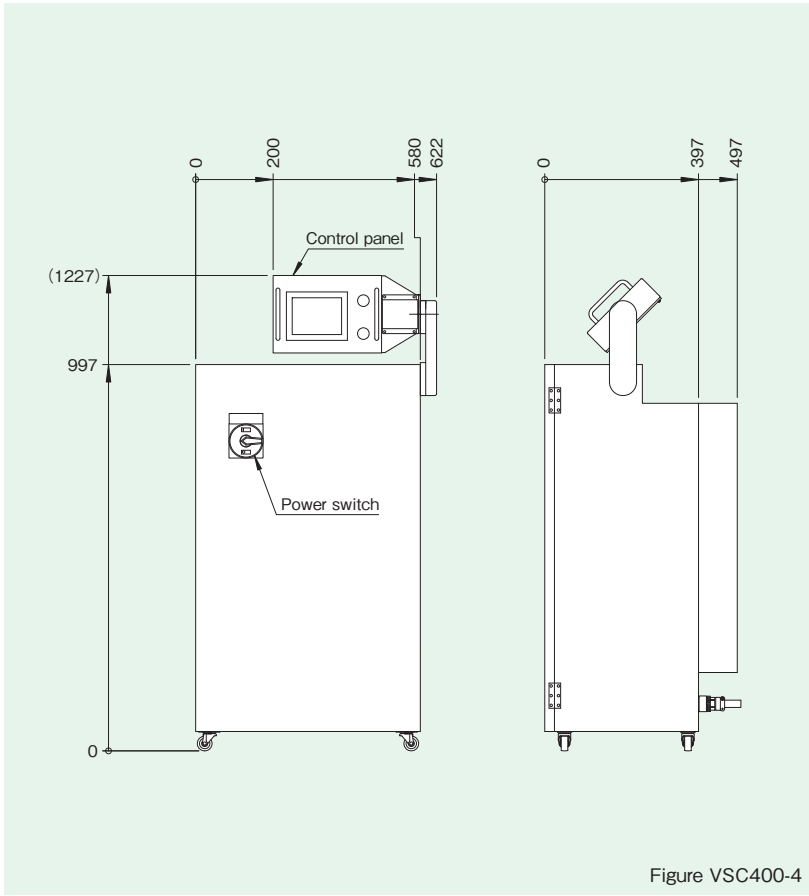


Figure VSC400-4





VLC150 overall dimensions

[Unit:mm]

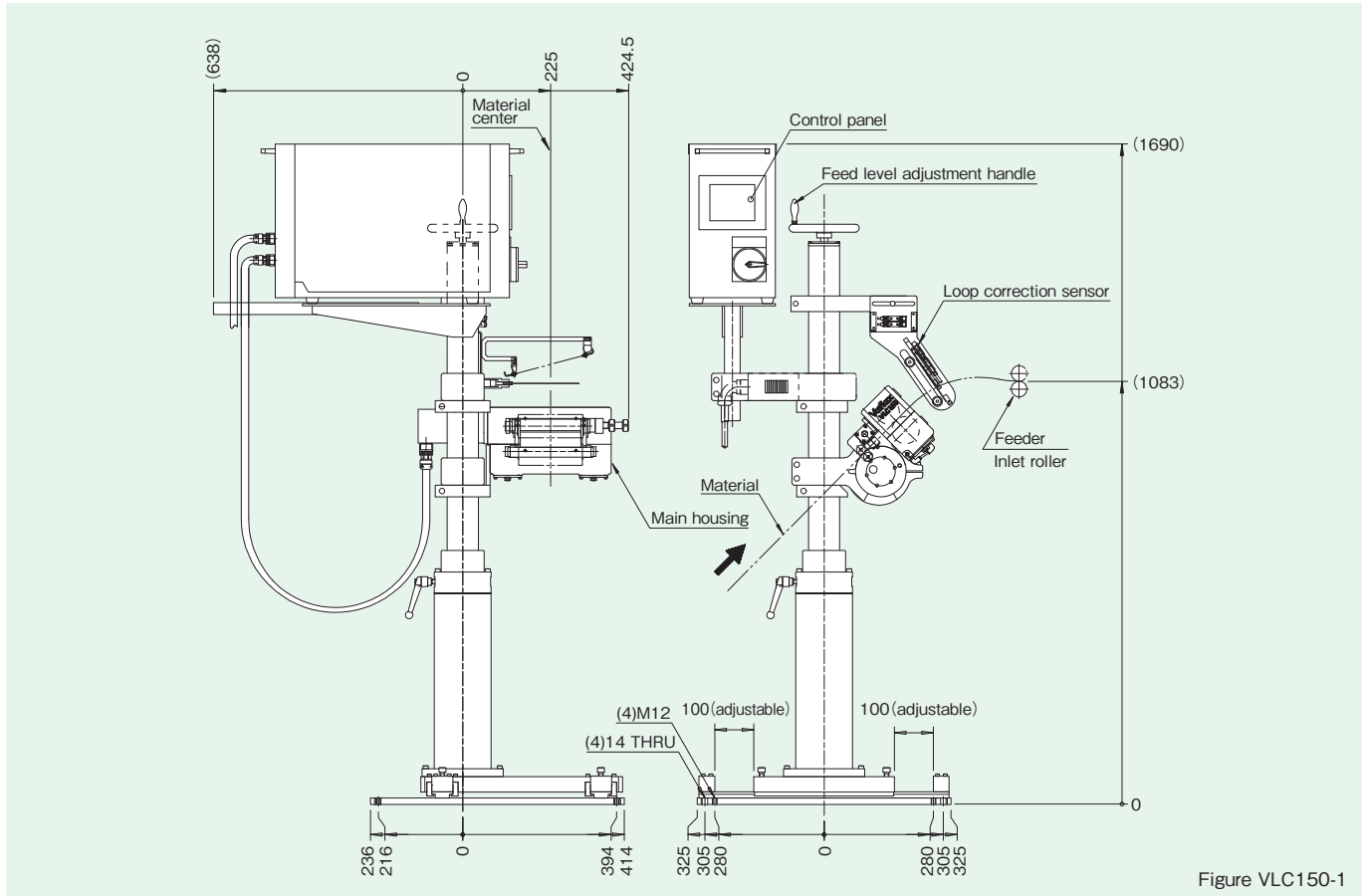


Figure VLC150-1

VLC150 main housing dimensions

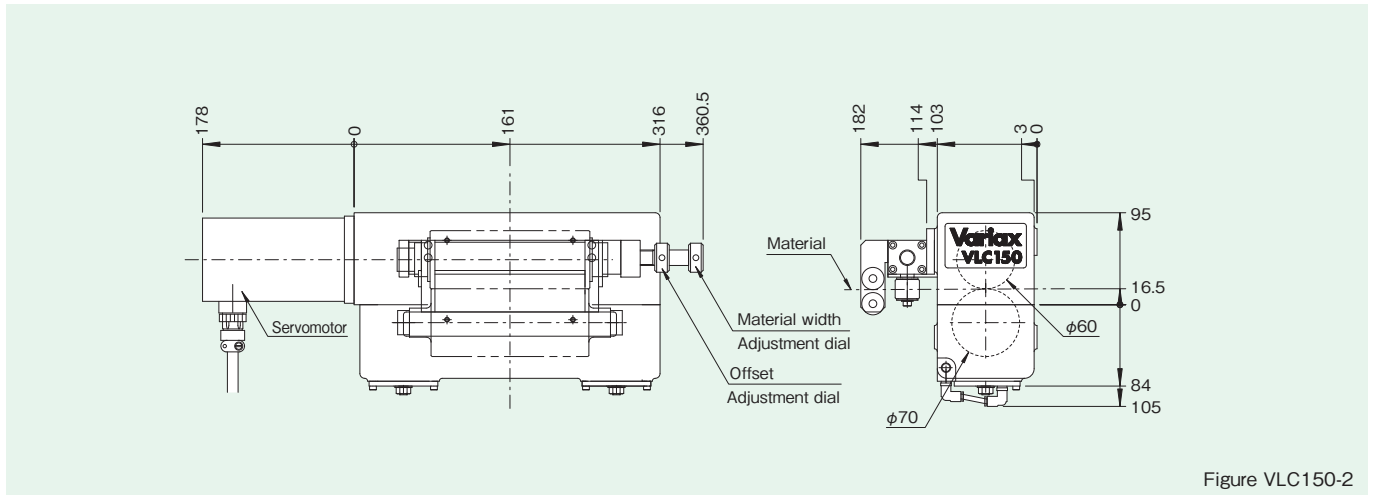


Figure VLC150-2

Specification table

Characteristic	Data
Feed length	0 to 999 [mm]
Material thickness	0.2 to 1 [mm]
Gripping force	1500 (at 490-kPa air pressure) [N]
Maximum material width	150 [mm]
Maximum number of strokes	3000 [min <sup>-1</sup> ]
Maximum feed speed	100 [m/min]

Characteristic	Data
Operating air pressure	490 to 690 [kPa]
Operating power supply	200 to 230 VAC, single phase [V]
Input power supply capacity	3.2 [kVA]
Product weight	270 [kg]

1[N·m] ≅ 0.102[kgf·m]

# VLC400

## VLC400 overall dimensions

[Unit:mm]

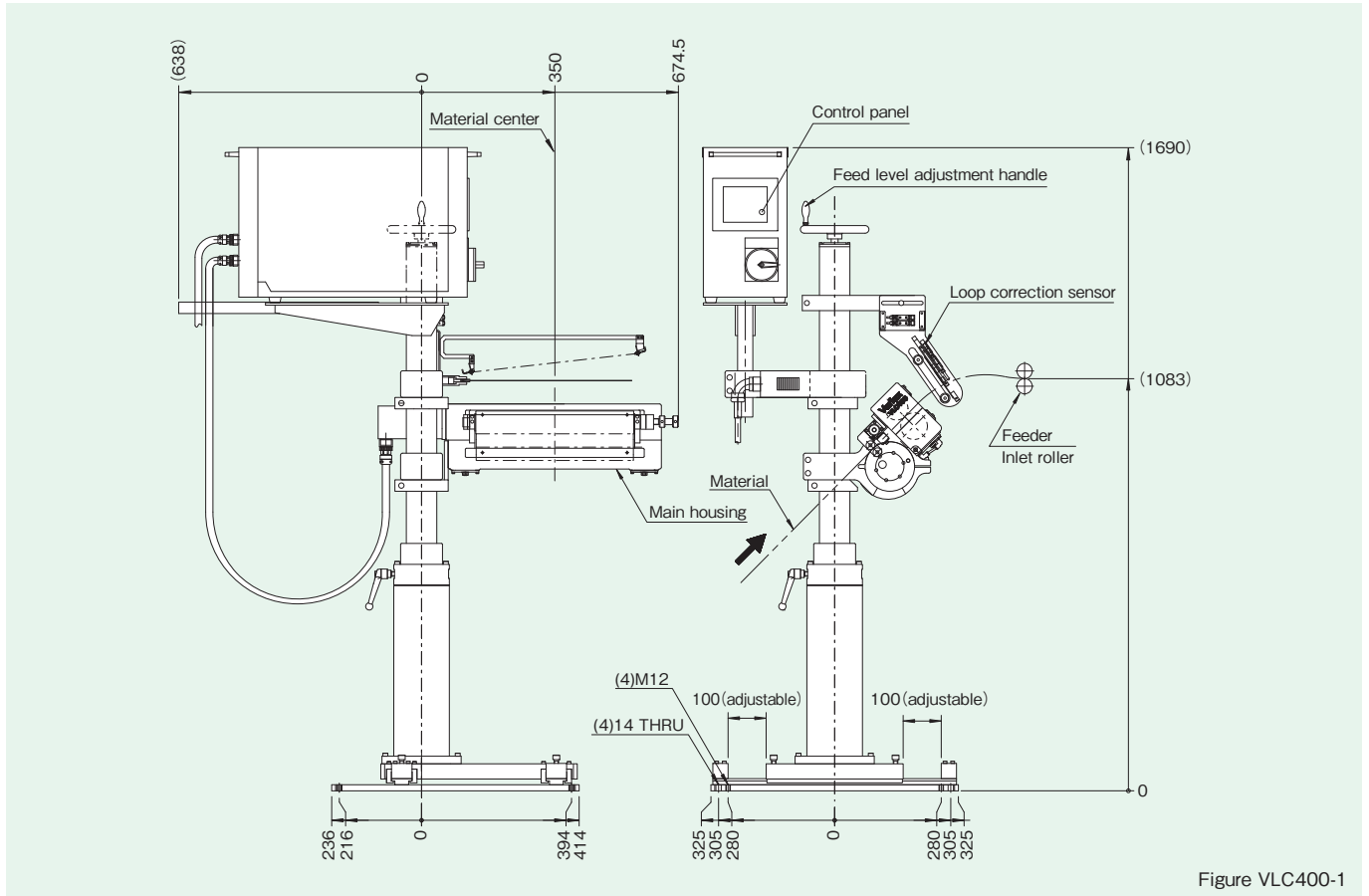


Figure VLC400-1

## VLC400 main housing dimensions

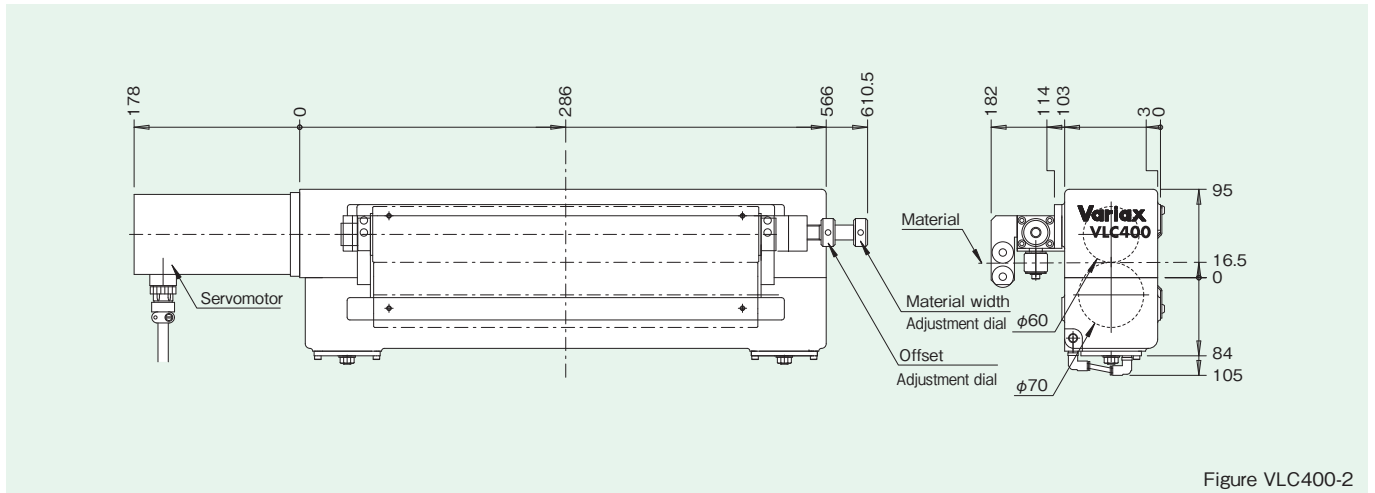


Figure VLC400-2

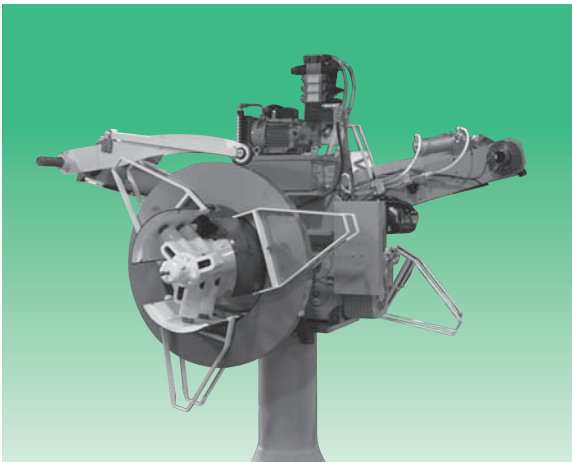
## Specification table

Characteristic	Data
Feed length	0 to 999 [mm]
Material thickness	0.2 to 1 [mm]
Gripping force	1500 (at 490-kPa air pressure) [N]
Maximum material width	400 [mm]
Maximum number of strokes	3000 [min <sup>-1</sup> ]
Maximum feed speed	100 [m/min]

Characteristic	Data
Operating air pressure	490 to 690 [kPa]
Operating power supply	200 to 230 VAC, single phase [V]
Input power supply capacity	3.2 [kVA]
Product weight	330 [kg]

1[N·m] ≅ 0.102[kgf·m]

## Uncoiler (VUC series)



### Supplies material at high speed, excellent tracking ability and stability

An unwinder with excellent high speed and tracking that we developed to provide a stable material supply to our original loop controller. Suitable for speeding up a feed line.

A servo motor is connected to the rotating part. It unwinds the coil material to supply it in real time, according to the press rotation speed.

In addition, there is a swing arm that contacts the outer circumference of the coil material. It automatically measures the radius of coil material. Therefore, you can control the feeding according to the remaining amount of material, resulting in outstandingly stable operation.

Table 10-1

Characteristic	Units	Data
Material width	mm	40 to 250
Material thickness	mm	0.1 to 1.0
Coil inner/Outer dia	mm	$\phi 508 \times \phi 1350$
Coil mass	kg	1500 (One side)
Line speed	m/min	100
Drum opening/closing range	mm	$\phi 470$ to $\phi 520$
Drum open/close method		Hydraulic electric type
Drum turning method		Manual type
Drum driving motor		3kW servomotor ( $\times 2$ )
Power-supply voltage		200 VAC three phase
Product weight	kg	1450

## System configuration example

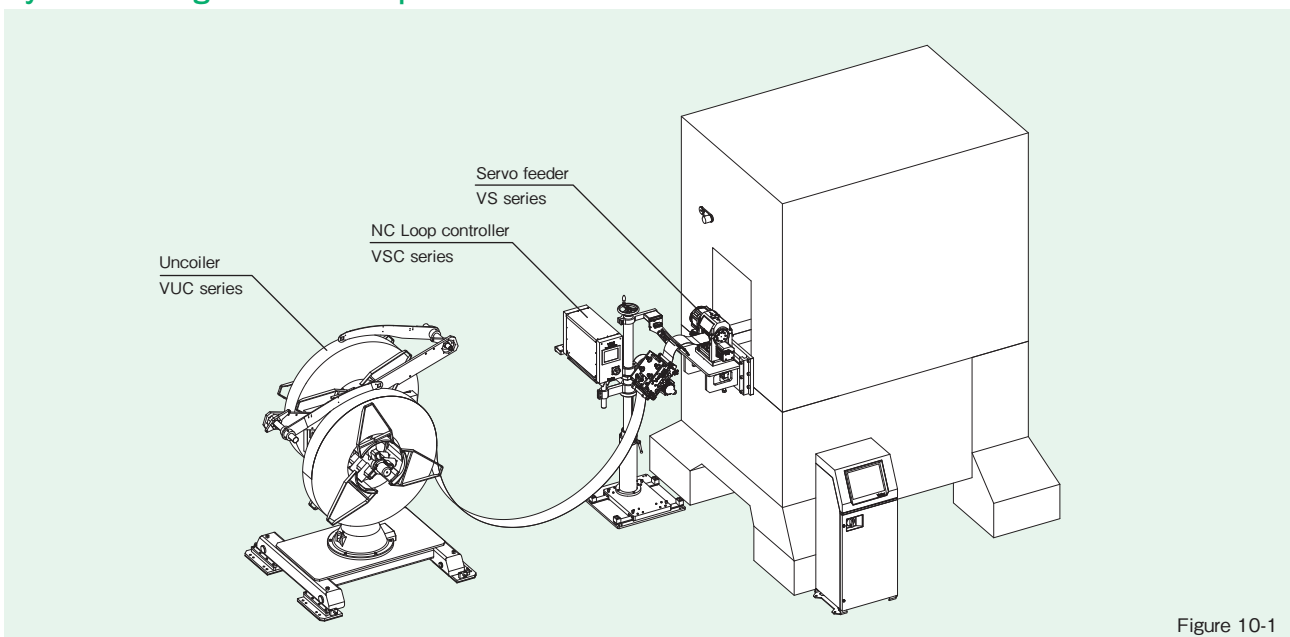


Figure 10-1

# Technical data

## Loop controller adjustment mechanism

Variax VLC series and VSC series loop controllers have a mechanism for adjusting the roll height, roll tilt, sensor position and distance to the feeder.

The purpose of these adjustment mechanisms is to optimize the shape of the material feed loop being sent to the feeder according to various conditions such as the size of the material to be used, the type of material, specifications such as the feed length and rotation speed, and the layout of the press line.

The feeder is capable of high-speed operation by automatically adjusting settings for the feed length, material thickness, gripping force, material width, and the feed line height.

As the feeder speed increases and the types of products produced increase, it becomes necessary to make the shape of the loop of material supplied to the feeder match the current conditions.

If this loop shape is inappropriate, the material may bend during high speed operation and may not make usable products. Also, the material may flutter and increase the load on the feeder, resulting in misfeeding.

By using Variax's loop controller, these automatic adjustments create the optimum material loop shape, fully exploit the original capabilities of the feeder, and enable high-speed press production operation.

### ●Advantages of adjusting the roll height and angle of both rolls.

The material loop R can be changed by changing the material thickness setting, the material and feed length settings, and the feed line height can be changed easily.

### ●Advantages of sensor position adjustment

The sensor monitors the shape of the loop, and if the loop R becomes too small, it speeds up the material feed rate to the loop, increasing the loop R to maintain the optimum loop shape.

If loop R gets too large, the opposite happens.

If the loop shape cannot be maintained due to a problem, the system is protected by an emergency stop of the press because the loop controller is interlocked with the press.

It can be set at the appropriate position for each condition, such as the size of loop R, the material feed angle, feed length, etc.

## System configuration diagram

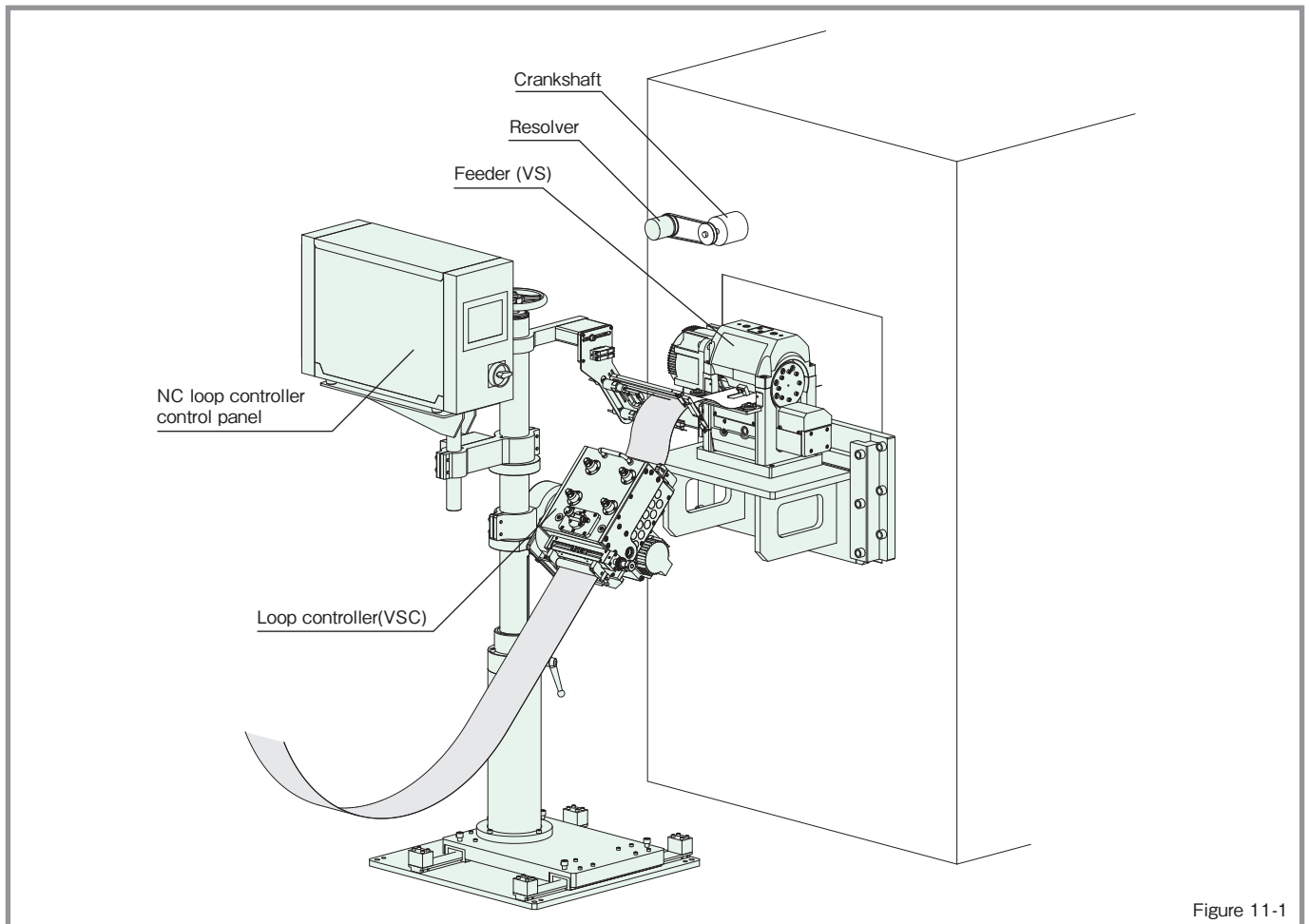


Figure 11-1

# Resolver

## Recommended mounting drawings

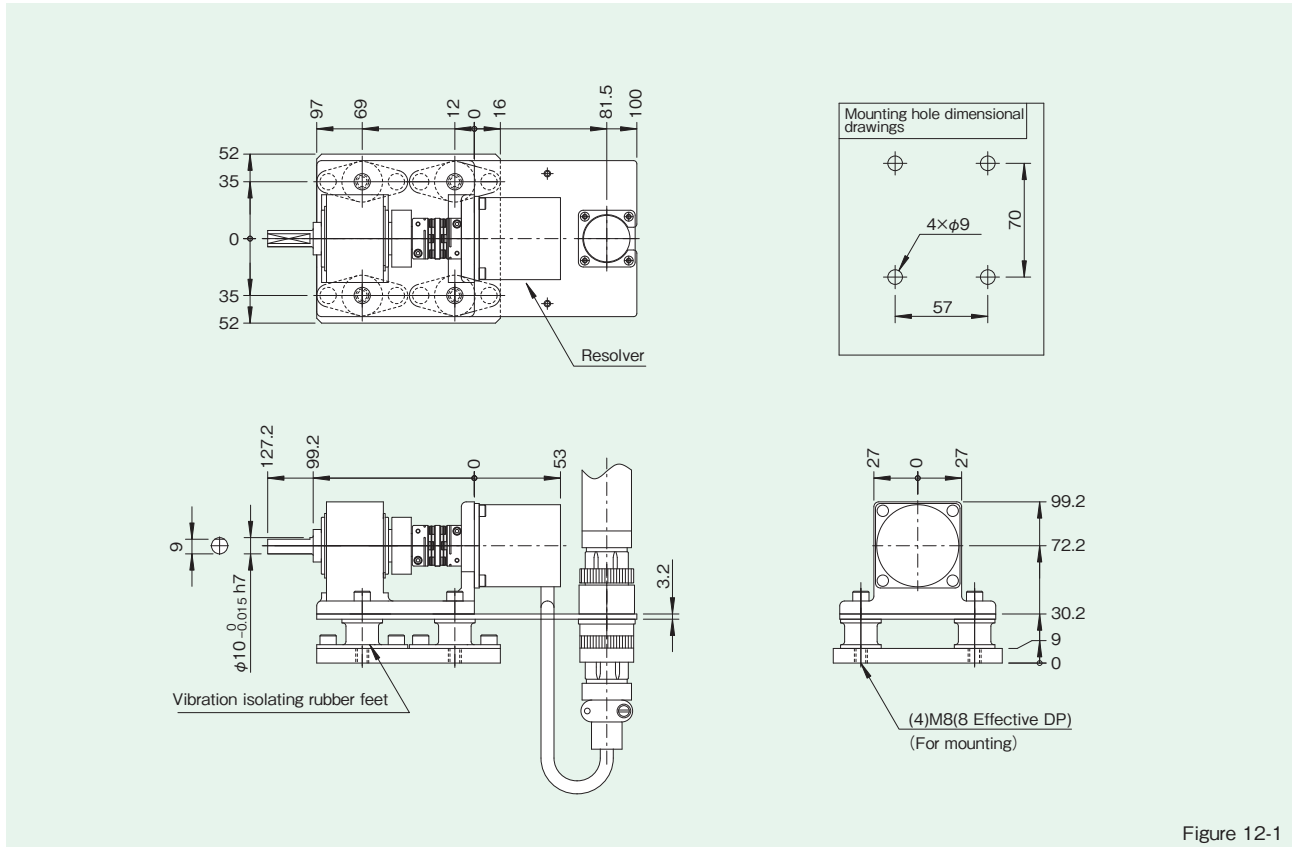


Figure 12-1

## Single unit dimension drawings

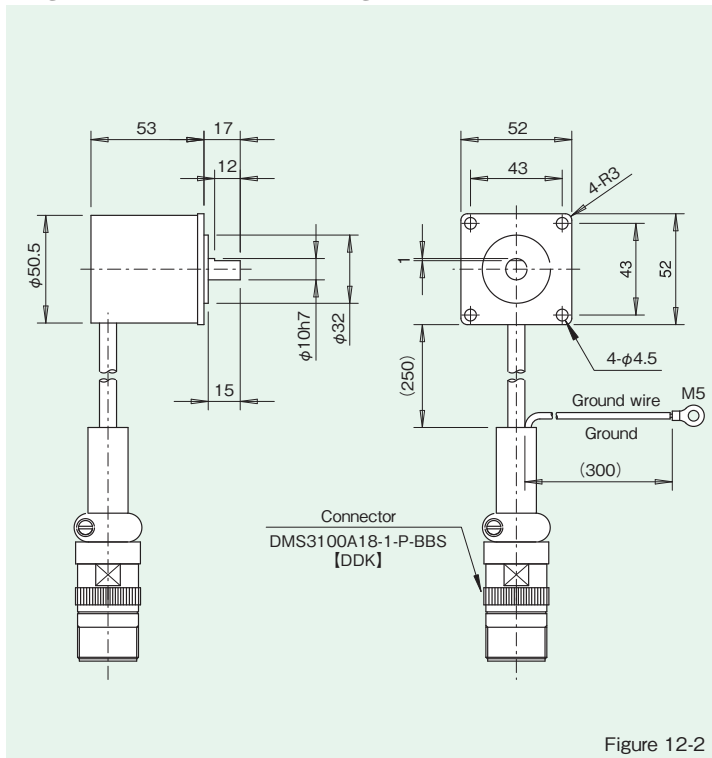


Figure 12-2

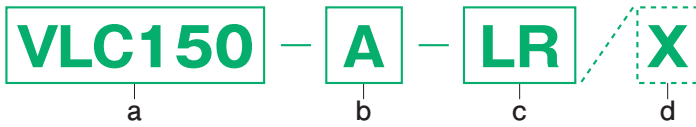
## Specifications

Table 12-1

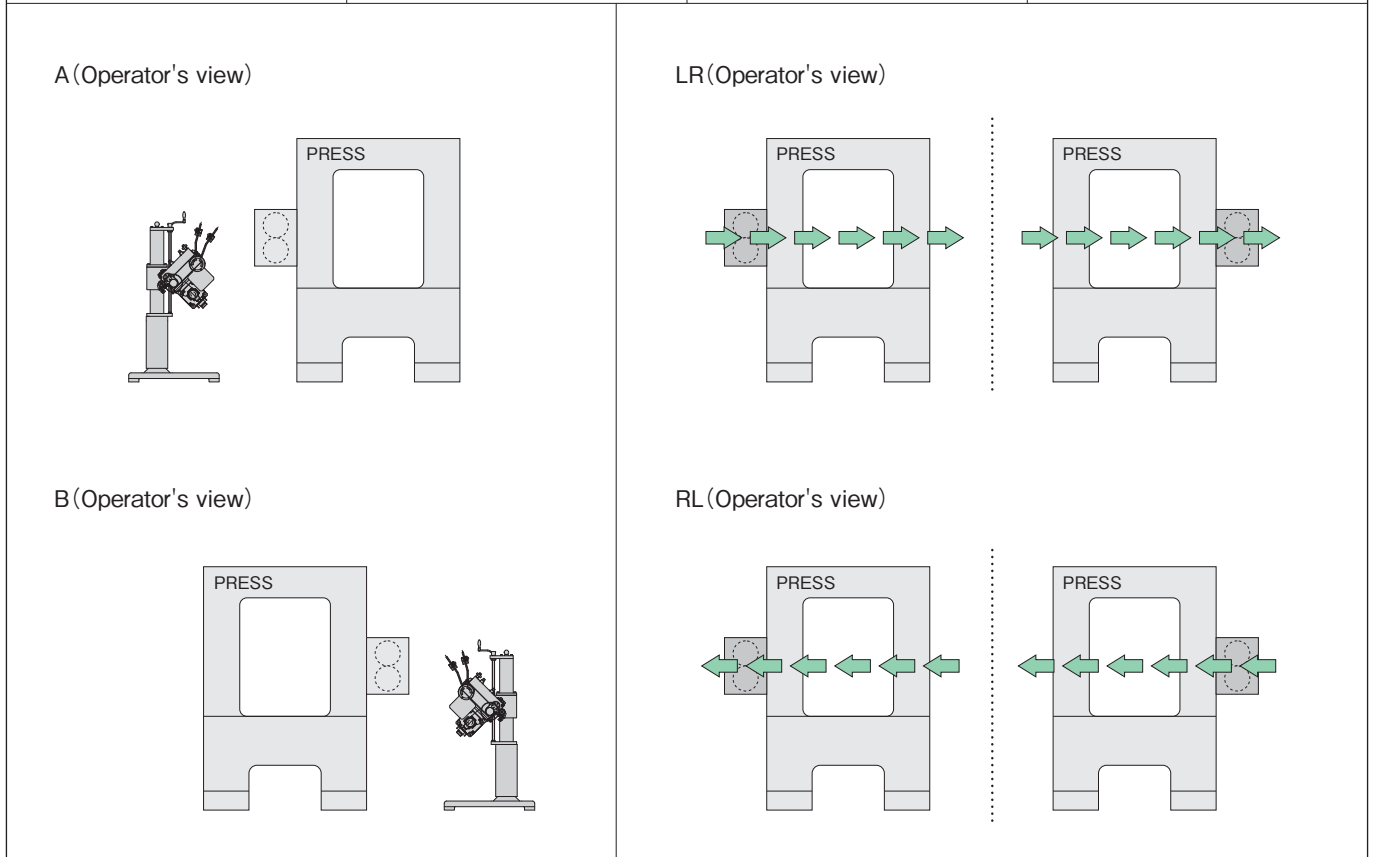
Characteristic	Units	Data
Maximum rotation speed	min <sup>-1</sup>	3000
Operating temperature range	°C	-30 to 100
Protective configuration		IP52
Rotor inertia moment	kg·m <sup>2</sup>	3×10 <sup>-6</sup>
Mass	kg	0.36(resolver only)

# Model code

Feed model code

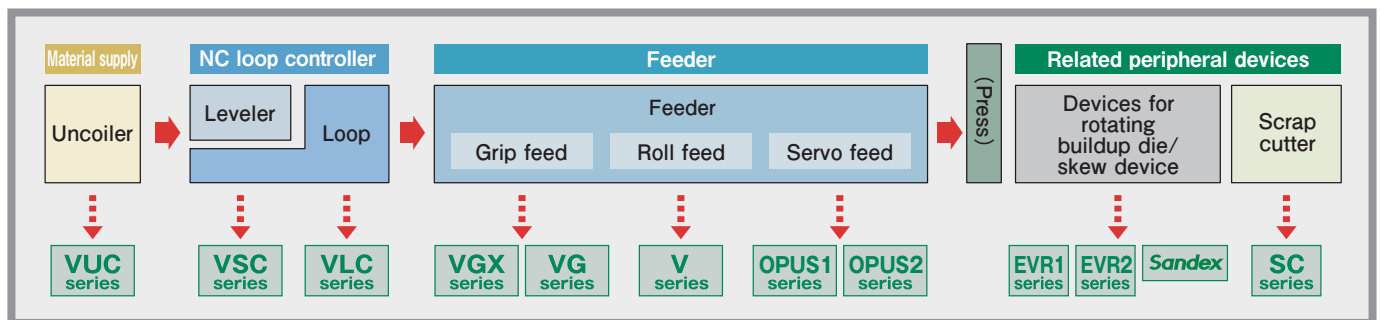
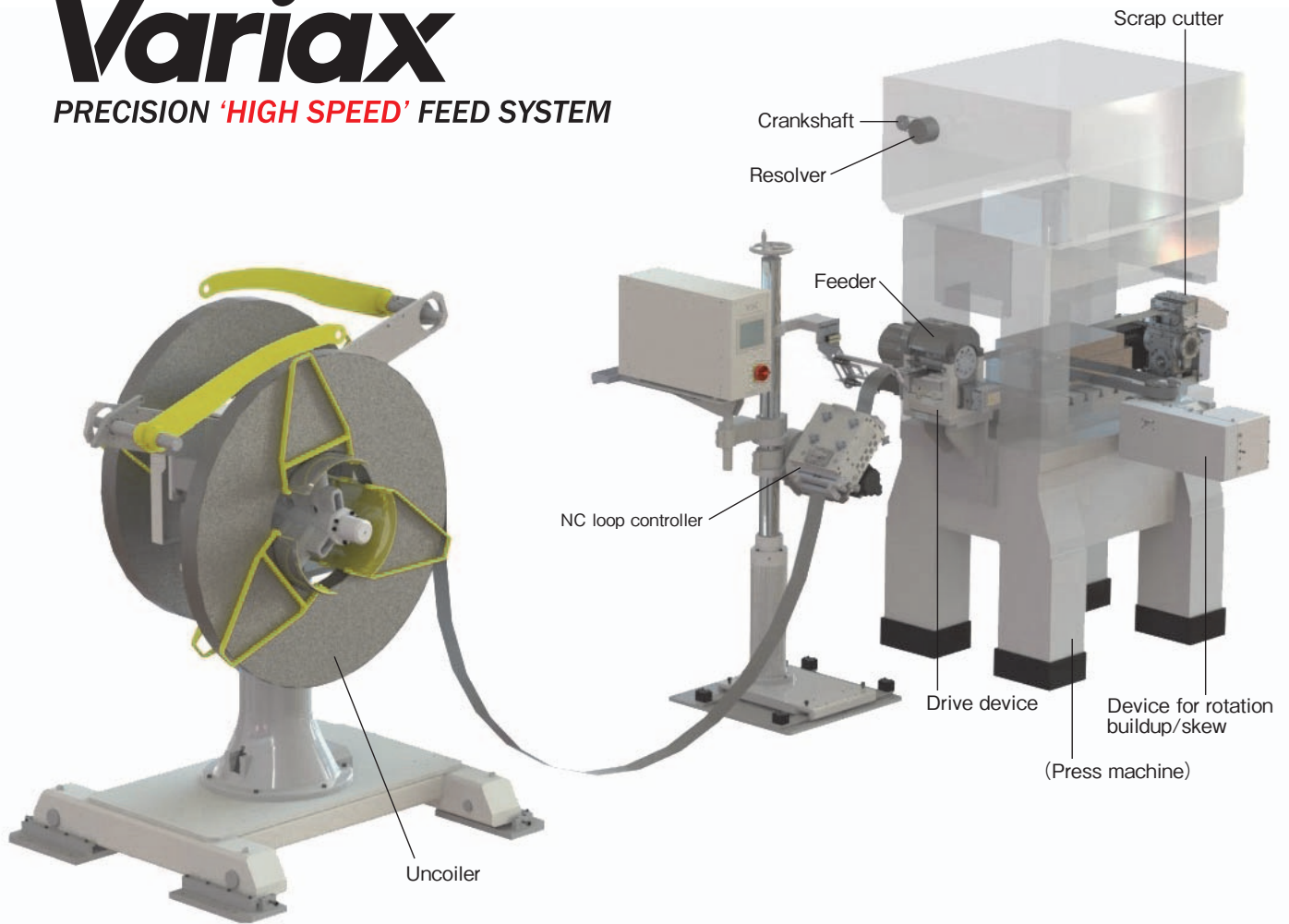


a Series and size	b Mounting position	c Feed direction	d Custom order
Example <b>VLC150</b> Maximum material width: 150mm	Example <b>A</b> On the left when viewed from the operator side	Example <b>LR</b> Feed is from left to right when viewed from the operator side	Example <b>X</b> Custom order
The maximum material width is as follows.  <b>VLC70</b> 50mm <b>VLC150</b> 150mm <b>VLC400</b> 400mm  <b>VSC50</b> 50mm <b>VSC150</b> 150mm <b>VSC400</b> 400mm	The mounting direction can be <b>A</b> : left side, or <b>B</b> : right side.	The feed direction can be specified: <b>LR</b> , feed from left to right, or <b>RL</b> , from right to left.	Check the Custom order box below only if there are special specifications  <input type="checkbox"/> Standard (Blank)  <input checked="" type="checkbox"/> Custom order



# Variax

PRECISION 'HIGH SPEED' FEED SYSTEM



### VGX series

A cam type gripper feeder that makes work easy and reduces setup time by enhancing various adjustment functions.



### VG series

A cam type gripper feeder that achieves high productivity with a variation that can handle any type of operation and a feed mechanism that does not mar materials.



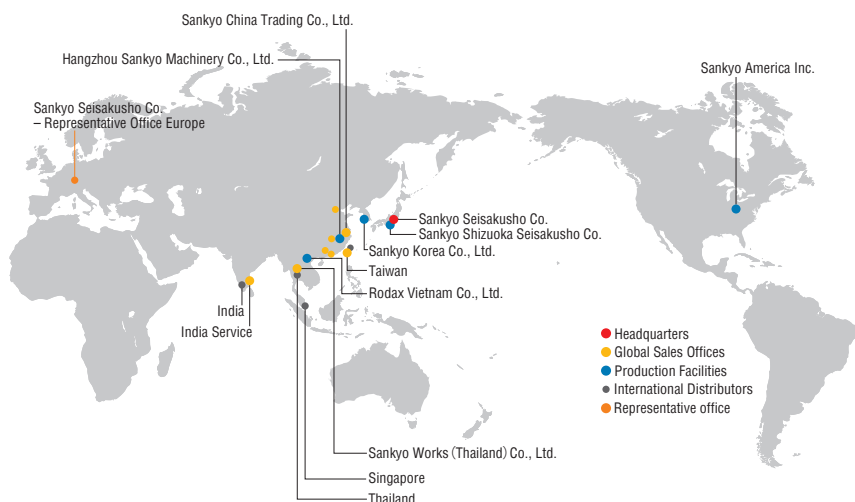
### V series

A proven cam type roller feeder that has been used for many years at many press work sites, enables faster and more accurate material feeding.



### OPUS1 series

High-performance servo feeder for upper and lower roll drive with IoT compatibility.



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