

Creating the Future of Weighing



**SIGMA F1 series**

 **SIGMA F1 Frontier**

 **SIGMA F1 Plus**

 **SIGMA F1 Compact**



**Dataweigh™**



# **SIGMA F1 series**

**High Speed & High Accurate Weighing**

**Yamato has been at the leading edge of weighing technology for more than 80 years. ΣF1 series applies groundbreaking and innovative technology in the field of Multihead Weighing**

## Benefits of Frontier



### Environment

Yamato are continually working towards a cleaner, healthier environment.

Reducing packaging waste by use of the BBH system is just one way by which we hope to reduce our impact.



### Productivity

Yamato aims to increase productivity by reducing the number of rejected packs due to seal integrity problems. The use of BBH is unique in assisting the associated packaging machine to achieve optimum performance at high speed.



### Investment

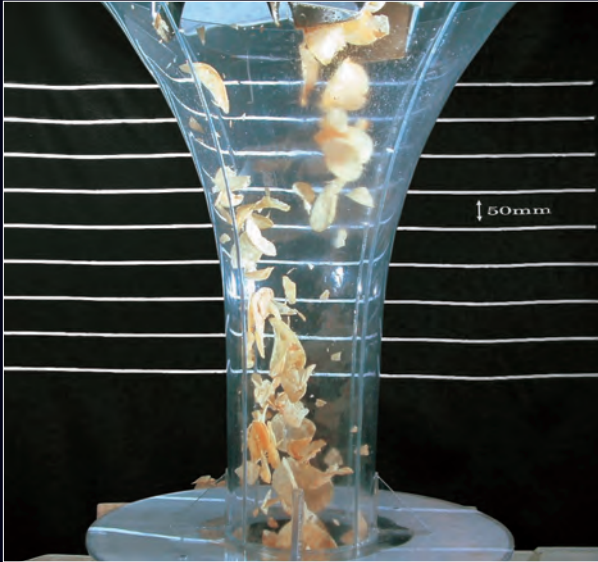
The ability to significantly increase speeds whilst maintaining efficiency and productivity can reduce the number of Multihead Weighers required in a plant.



# SIGMA F1 Frontier

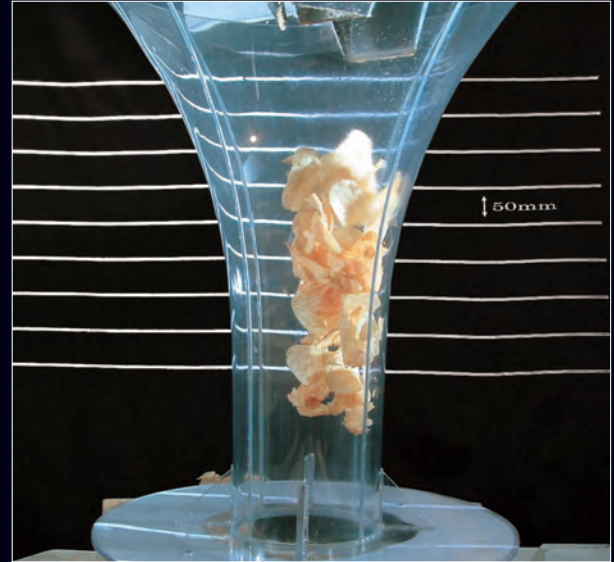
## Maximized Sealing Clearance

ΣF1™ Frontier series enables you to run 60g Potato Chips at 210 wpm with maximized sealing clearances for bagmaking.



### Conventional System

Without the Bottom Based Handling, the discharged product does not have a clear Product Window and the product extension may cause sealing failure.



### Bottom Based Handling (BBH)

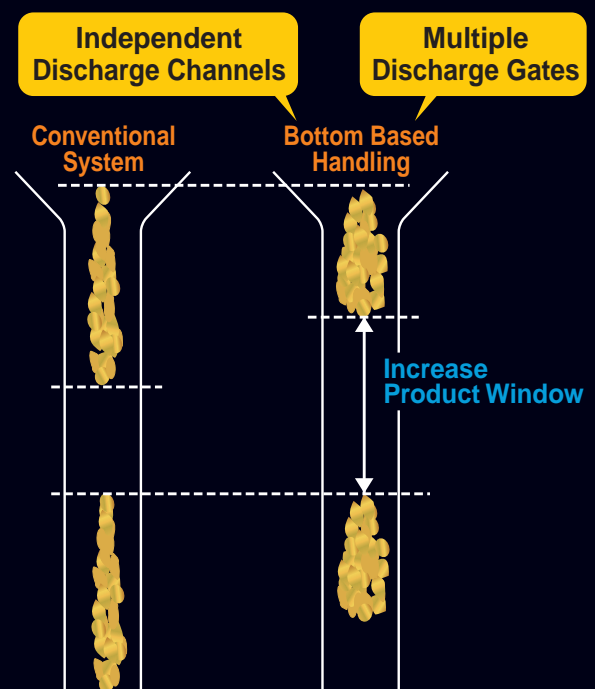
The concept of ΣF1™ Frontier "Bottom Based Handling" produces a clear, distinct discharge of products and therefore minimizes sealing failure.

## How is it possible?

The unique concept of "Bottom Based Handling" produces a clear Product Window by use of:

- **Independent Discharge Channels**
- **Multiple Discharge Gates**

Each channel has a designated gate which settles product prior to discharge.



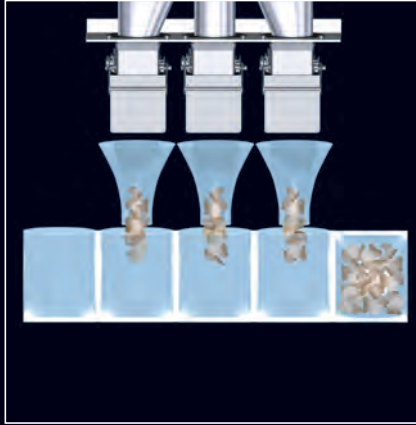
# Providing various types of Discharge Pattern

ΣF1™ Frontier series provides various types of Discharge Pattern.

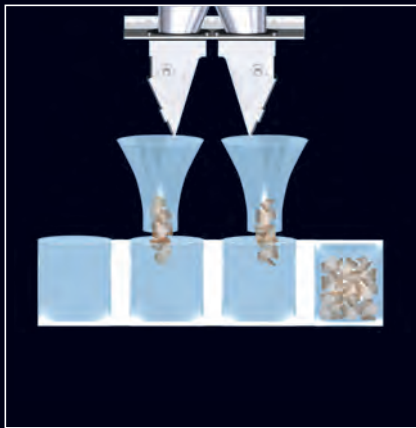
## Single Discharge



## 3-Point Discharge

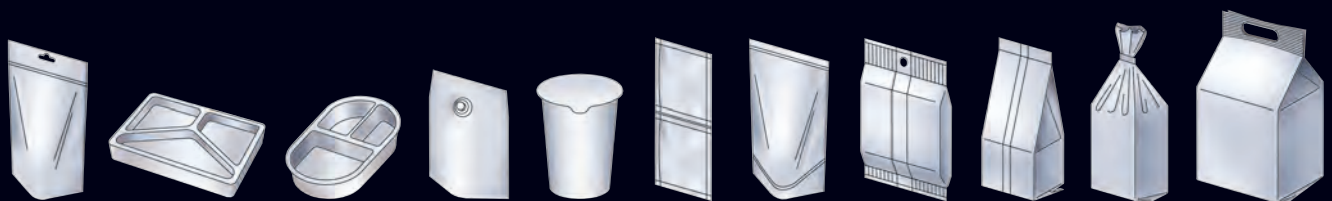


## 2-Point Discharge



# Expanding Packaging Flexibility

ΣF1™ Frontier series provides versatility.



**Groundbreaking Technology**



# **SIGMA F1 Frontier**

**A Technological Revolution in the Concept of Multihead Weighing**



**ADW-F518SV**  
60g of potato chips at 210wpm



**ADW-F514SV**  
60g of potato chips at 140wpm

■ **Functions**



Touch Screen



Network



Self-diagnosis



Waterproof



Feed back control



Counting



Data Acquisition



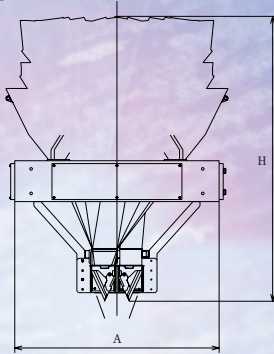
Multi-point Discharge

## Mechanical Features of Σ F1™ Frontier & Plus



### OUTSIDE DIMENSIONS

SINGLE



### Model Variation

	Model	Weigh Heads	Weight (g)	Volume per pack (ml)	Speed (wpm)	Max. number of discharge points	Dimensions	
							A(mm)	H(mm)
Σ F1™ Frontier	F314SV	14	500	1,000	160	2	800	1,380
	F318SV	18	500	1,000	240	1	1,100	1,450
	F320SV	20	500	1,000	240	3	1,100	1,500
	F514SV	14	1,000	3,000	140	2	1,250	1,740
	F518SV	18	1,000	3,000	210	1	1,500	1,770
	F614SV	14	2,000	6,000	110	2	1,400	2,060
	F618SV	18	2,000	6,000	165	1	1,600	2,000
	F714SV	14	3,000	10,000	100	2	1,800	2,590

### Simplicity of Design

■ Improved combination accuracy and speed with the minimum number of buckets

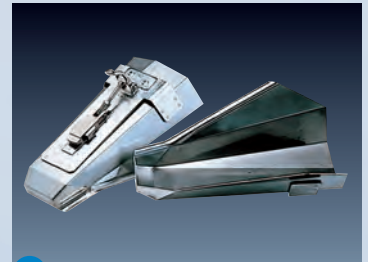
### Extra edge "Simultaneous Combination"

■ Improved combination accuracy by simultaneous combination.

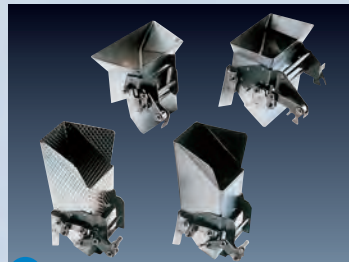
■ Enable to various packaging style by Multiple Simultaneous Discharge system which produces a clear Product Window



**A** Easy removable and attachable Buckets



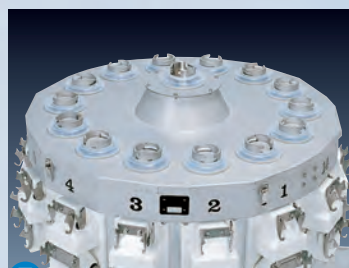
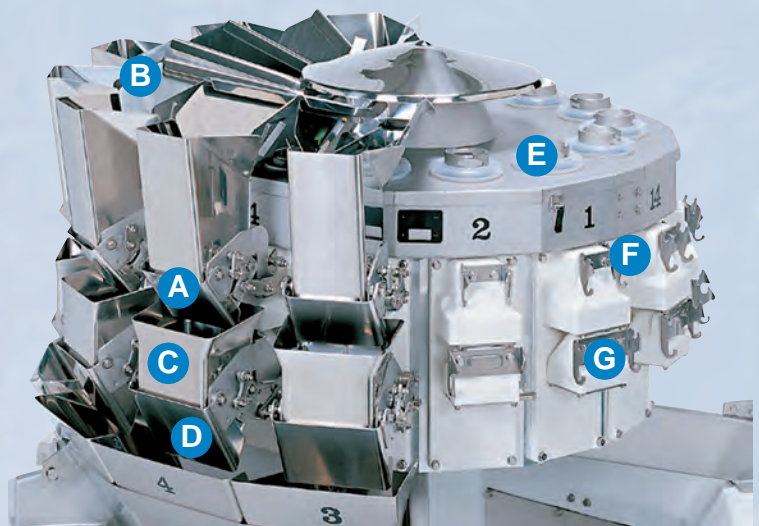
**B** Easy removable and attachable Linear feeder pans



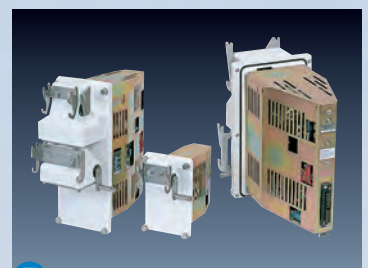
**C** Buckets variation



**D** Sealed bearings



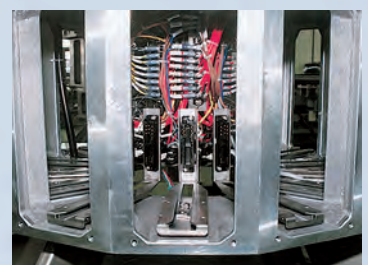
**E** Top of center column



**F** Actuator units



**G** Mounting of actuator units

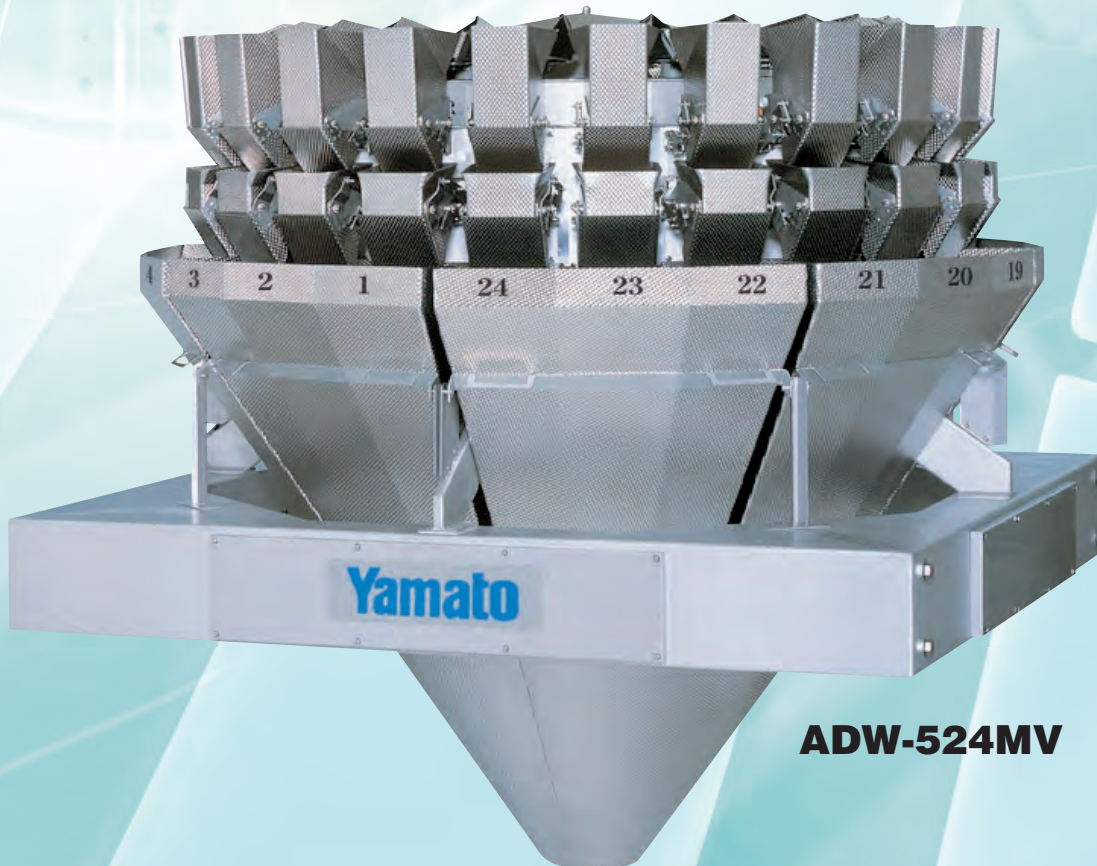


Interior of center column

**Continuous Evolution**



# **SIGMA F1 Plus**



**ADW-524MV**

■ **Functions**



Touch Screen



Network



Self-diagnosis



Waterproof



Stagger Dump



Feed back control



Counting



Mixing



Data Acquisition



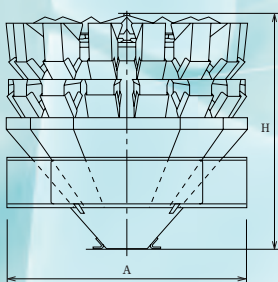
Multi-point Discharge



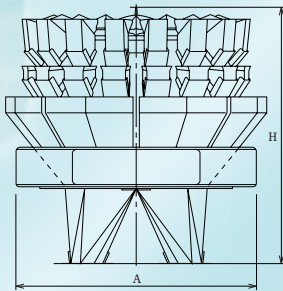


## OUTSIDE DIMENSIONS

SINGLE



TWIN



## Model Variation

Model	Weigh Heads	Weight (g)	Volume per pack (ml)	Speed (wpm)	Max. number of discharge points	Dimensions	
						A(mm)	H(mm)
410SV	10	1,000	2,000	70	1	1,000	1,040
410MV	10	1,000	2,000	160	1	1,000	1,140
414SV	14	1,000	2,000	140	1	1,100	1,140
416SV	16	1,000	2,000	140	1	1,500	1,430
416MV	16	1,000	2,000	220	2	1,500	1,490
420MV	20	1,000	2,000	240	4	1,500	1,720
424MV	24	1,000	2,000	300	4	1,800	1,560
508MV	8	2,000	5,000	120	1	1,250	1,340
510SV	10	2,000	5,000	65	1	1,250	1,260
514SV	14	2,000	5,000	130	1	1,250	1,290
516MV	16	2,000	5,000	200	2	1,500	1,760
520SV	20	2,000	5,000	190	2	1,800	1,800
520MV	20	2,000	5,000	220	2	1,800	1,770
524MV	24	2,000	5,000	300	4	2,000	1,990
710SV	10	3,000	10,000	50	1	1,600	1,520
714SV	14	3,000	10,000	100	1	1,600	1,570
714MV	14	3,000	10,000	140	2	2,390	1,800
716MV	16	3,000	10,000	150	2	2,200	2,450
720SV	20	3,000	10,000	150	2	2,100	1,620
814SV	14	5,000	16,000	80	1	1,800	1,650
814MV	14	5,000	16,000	140	2	1,800	2,050

SEF<sup>TM</sup> Plus

- New more powerful CPU offers 10% higher operational speed and higher accuracy
- Full stainless steel construction.
- IP 65 Compliant
- Backward Compatible

### Hygiene

- Full stainless steel construction
- Unique Push - Pull Drive system
- Spring-free buckets
- Large radius corner bucket design
- Fully interchangeable buckets
- Easy removable and attachable Linear feeder pans

### Durability

- Robust bucket and linkage design

### Maximum Up-time

- Modular Plug in Actuator
- Buckets and actuators fully interchangeable
- Easy removable and attachable Linear feeder pans

### Advanced Design Features

- Adjustable open/close door profiles
- Linear feeder control
- Central load cell for ancillary feed system
- Compliant with IP65 standard

### Tool Free Strip Down

- Quick release Linear feeder pans
- Latch on top cone
- Lift off buckets and chutes

### Options

- Diverter unit

**Compact and Functional Design**



# **SIGMA F1 Compact**



**ADW-314SW**

■ **Functions**



Touch Screen



Network



Self-diagnosis



Waterproof (Option)



Stagger Dump



Feed back control



Counting



Mixing



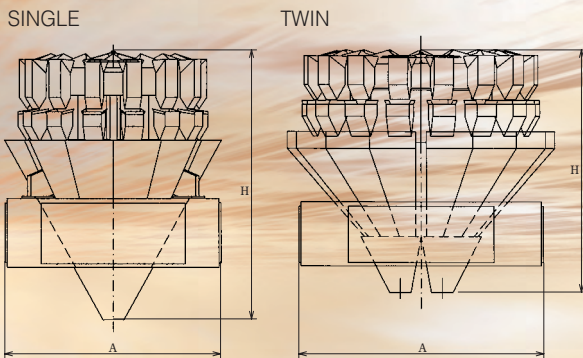
Data Acquisition



Multi-point Discharge



**OUTSIDE DIMENSIONS**



**High Accuracy, Small Target Weighing**

■ The Compact design offers the optimum in weighing accuracy on small target weights. Compliant with industry standards.

**Space Efficient**

■ The small footprint and reduced height of the weigher allows simple integration into the existing packaging and processing lines.

**Fragile Product Handling**

■ The Compact design offers the benefit of reduced drop heights and chute lengths so minimizing product fall distance.

**Model Variation**

	Model	Weigh Heads	Weight (g)	Volume per pack (ml)	Speed (wpm)	Max. number of discharge points	Dimensions	
							A(mm)	H(mm)
ΣF1™ Compact*	214SD/SW	14	200	500	160	2	800	790
	216SD/SW	16	200	500	180	2	900	840
	216MD/MW	16	200	500	240	2	900	940
	220SD/SW	20	200	500	240	2	1,100	920
	224MD/MW	24	200	500	300	4	1,250	1,400
	314SD/SW	14	500	1,000	160	2	800	790
	316SD/SW	16	500	1,000	180	2	900	840
	316MD/MW	16	500	1,000	240	2	900	940
	320SD/SW	20	500	1,000	240	2	1,100	920
	324MD/MW	24	500	1,000	300	4	1,250	1,400

\*: Options: Center Column in Aluminum and Common Bed in painted mild steel (only SD and MD type)

**Precision mixing up to 8 products with typical mixing patterns**

Head	Speed (p/m)	Mix Application	Type of Bagmaker	Plan view of Mix	Packaging Style
16 heads Memory	70(Mix)	6 Mix	Single		
	70×2=140	4 Mix×2	Twin		
24 heads Memory	70×2=140	6 Mix×2	Twin		
	40(Mix)	~8 Mix	Single		
	100(Mix)	3 Mix	Single		
	70(Mix)	4 Mix	Single		

Mixing operation is also available with ΣF1™ Plus.

# RCU-810-A | AICC-SE

Advanced Interactive Command Console

New powerful CPU has made it possible to assist line operators with all operational functions.



10.4 inch Color Touch Screen

Comply with HACCP

17 Languages

300 programs

Built-in Printer

Multi Dump

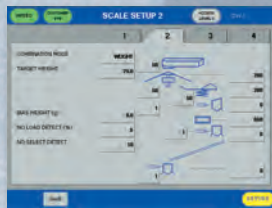
Access port for Ethernet

Access port for CF card

- Auto Programming tool
- Programmable operational parameters
- Individual, Step Radial control (both amplitude and time)
- Auto inhibit and Auto tare
- Production diagnostics (histogram Production parameters, Scale operation parameters)

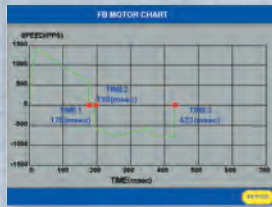
## COLOR Touch Screen

- The large (10.4 inch) color touch screen offers a clear graphic display
- Quick screen to screen response



Production diagnostics (histogram, production parameters, scale operation parameters)

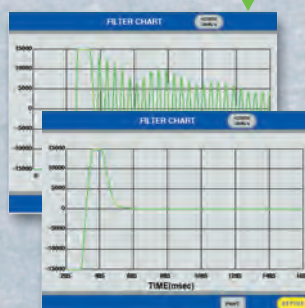
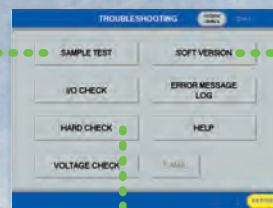
Multilingual (17 languages), 300 programs



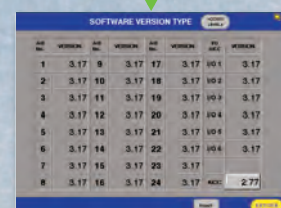
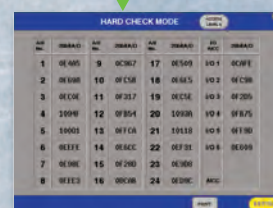
Mixing

## Self-diagnosis

- Self check to RAM/ROM, communications, monitoring of voltage to actuator units, zero point and load cell
- Event logs



Digital filtering of the load cell signal



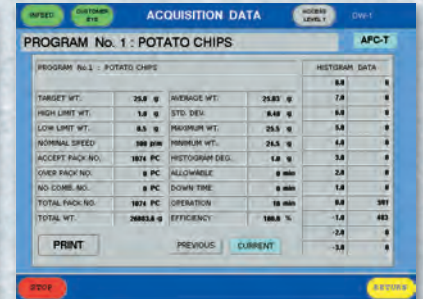
# Additional and ancillary Features

RCU-810-A has various range of availabilities with several kinds of additional options.

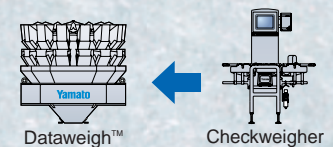
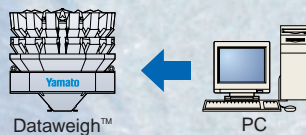
- Barcode Reader
- RS-232C
- Counting Software
- Web Camera
- Remote control by PC (LAN)
- Priority head
- Feed back Control CW-DW
- Data Acquisition Software
- Mixing Software
- Multi-Point Discharge



Remote control by PC

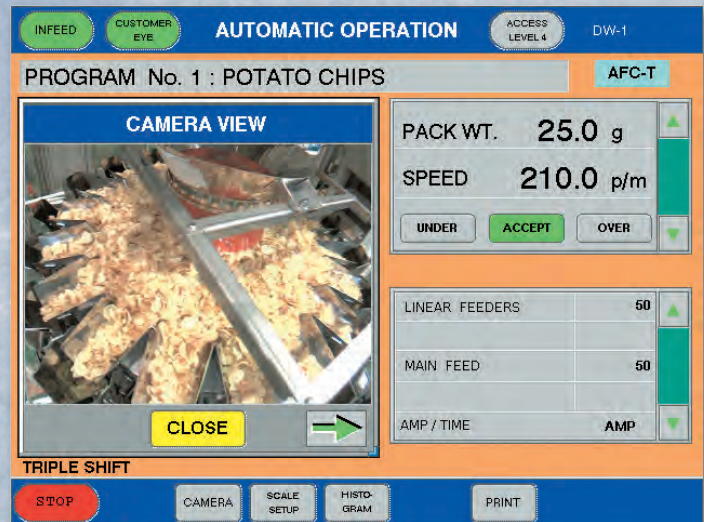


Acquisition data



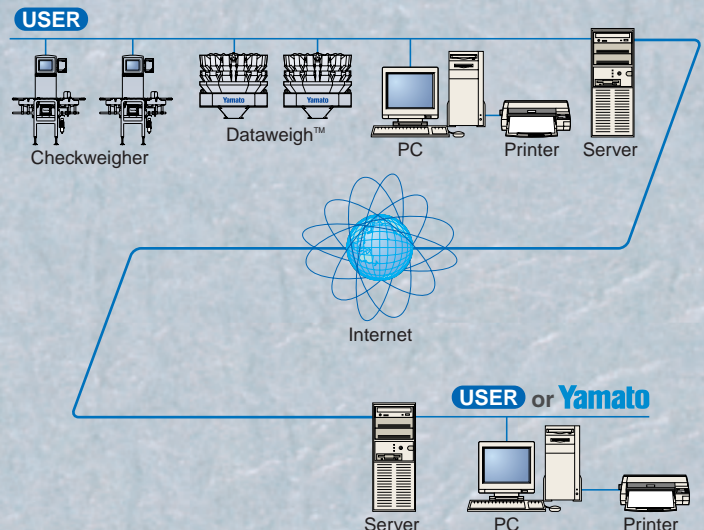
## Web Camera

- Web camera for real-time monitoring of product conditions on the Top Cone and Linear Feeder Pans
- Built in Web camera to monitor product or bag samples, simplifies set up and reduce possible operator errors during set up.



## Remote Control and Maintenance through Network

- Comprehensive trouble shooting pages through Internet
- Trouble shooting and FAQs are available at AICC-SE support corner of Yamato web page





## Corporate Milestone & History of Dataweigh™

- 1922: Weighing Machinery Division of Kawanishi Kikai K.K. founded.
- 1945: Weighing Machinery Division of Kawanishi Kikai K.K. reorganized as Yamato Scale Co., Ltd.
- 1953: Produced the first domestically-made strain gauge load cells.  
Produced Japan's first electronic crane scale.
- 1979: **First Dataweigh ADW-110 developed.**
- 1980: Developed the Datacell and its load cell were approved by P.T.B. in F.R. Germany.  
**ADW-110, ADW-120, MDW-210, SDW-220 released.**
- 1981: **Apply Double shift.**  
**Apply Memory buckets patents.**
- 1985: Established Kumyong Yamato Scale Co., Ltd. in Seoul Korea.
- 1986: Established Yamato Scale GmbH in Germany.  
**RA series launched.**
- 1988: **RB series and Command Console launched.**
- 1990: Established Shanghai Yamato Scale Co., Ltd. in China.
- 1993: Established Yamato Corporation in U.S.A.  
**Σ series with Super Command Console released.**
- 1994: Established Yamato Scale Dataweigh[UK]Ltd. in UK.
- 1996: **α ADW-510A launched.**  
**Apply Digital Filter patent.**
- 1998: Established Yamato Corporation Dataweigh Division in U.S.A.
- 1999: **Advanced Interactive Command Console (AICC) released.**
- 2000: Established Yamato Scale France.  
**Σ Plus released.**
- 2002: **Σ Compact released.**  
**α Plus released.**
- 2003: **AICC-SE released.**
- 2005: **Σ F1™ released.**
- 2006: **Σ F1™ series released.**  
Established Yamato Scale Russia.
- 2008: Established Yamato Scale India.
- 2010: Established Yamato Scale Benelux.

### [Worldwide Sales & Service Network]



Speed, weight and volume listed in the model variation are standard.  
Other ranges are also available when required, please contact Yamato.  
Max. and Min. Weight may vary according to local regulations.  
This machine is covered by a number of patents worldwide.  
All illustrations and specifications are subject to change without notice and any drawing dimensions are not to scale and are approximate.

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