

Creating the Future of Weighing



SIGMA F1 series

 **SIGMA F1-Frontier**

 **SIGMA F1-Plus**

 **SIGMA F1-Compact**



Dataweigh®



SIGMA F1 series

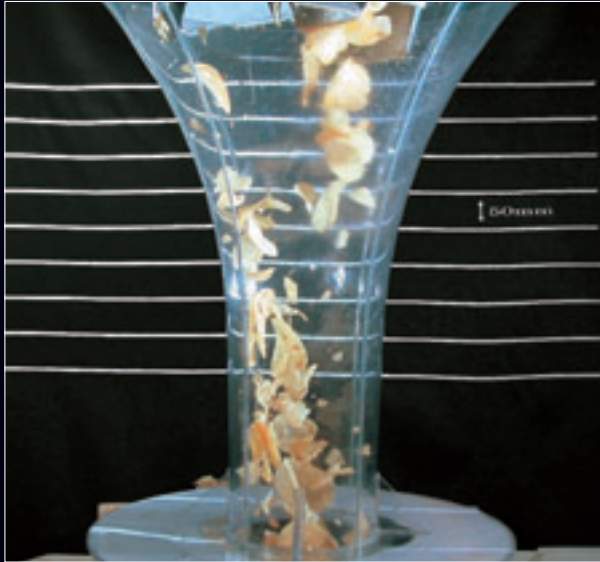
High Speed & High Accurate Weighing

Yamato has been at the leading edge of weighing technology for more than 80 years. Σ F1 series applies groundbreaking and innovative technology in the field of Multihead Weighing

SIGMA F1-Frontier

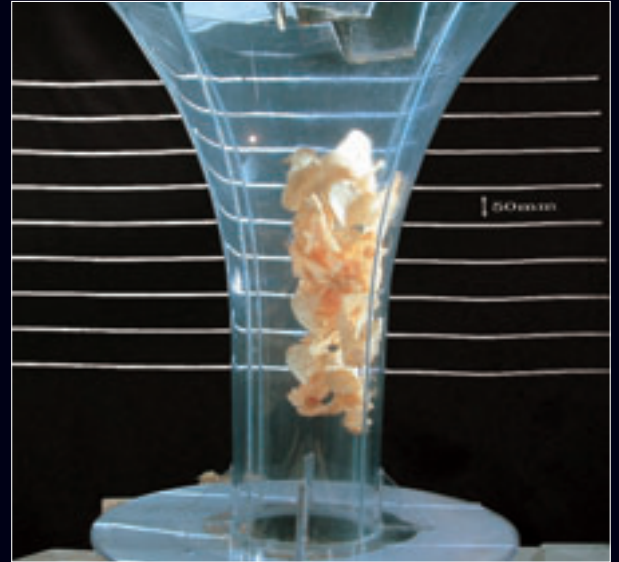
Maximized Sealing Clearance

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 these extensions of products sometimes cause packaging problem.



Bottom Based Handling (BBH)

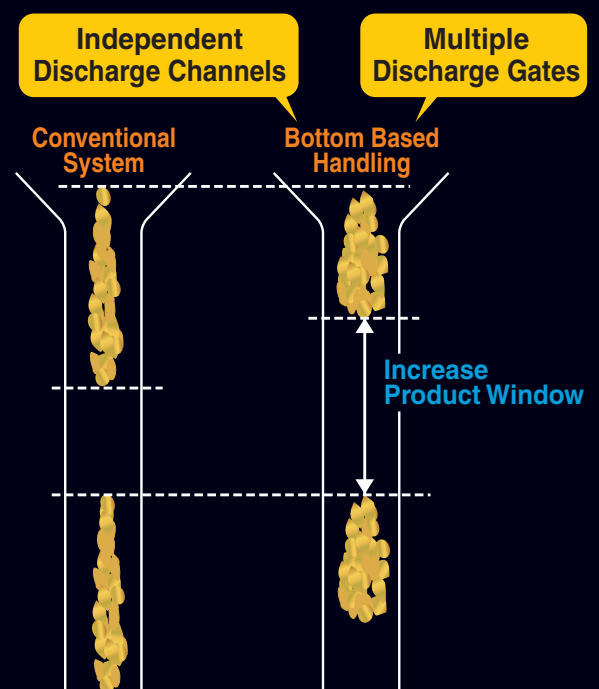
The Bottom Based Handling produces a clear, distinct discharge of products and therefore minimizes sealing failure.

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**

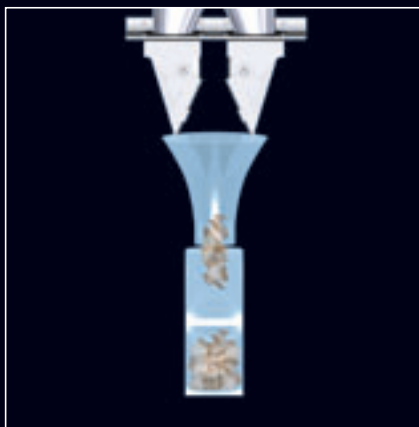
Each channel has a designated gate which settles product prior to discharge.



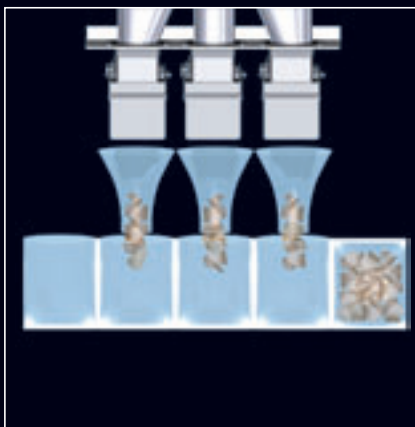
Providing a various types of Discharge Pattern

ΣF1 Frontier series provides you with a various types of Discharge Pattern.

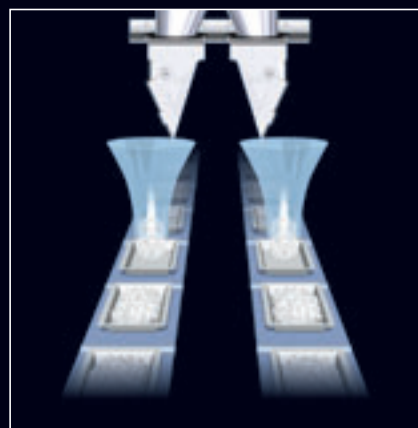
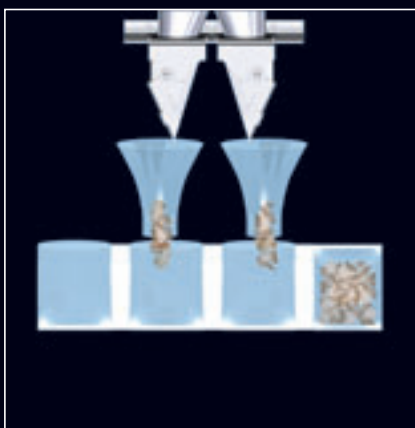
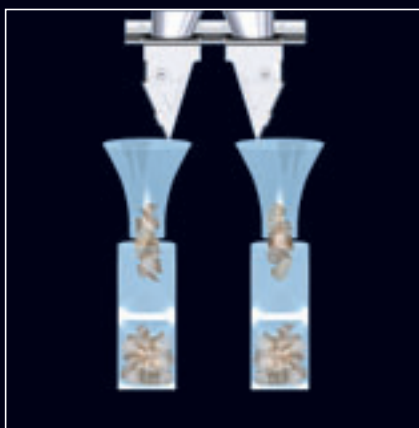
Single Discharge



3-Point Discharge

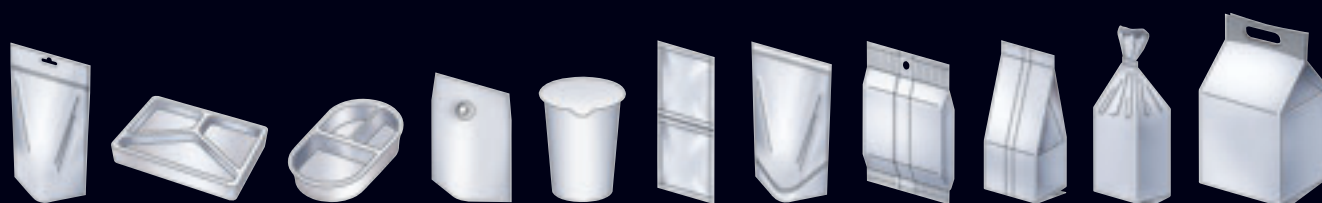


2-Point Discharge



Expanding Packaging Flexibility

ΣF1 Frontier series provides you with a large scale of versatility.



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.

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

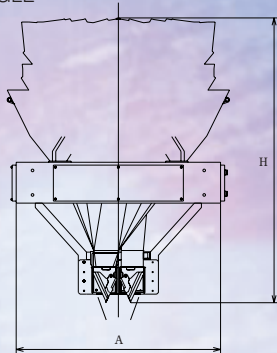
Functions

- Touch Screen
- Network
- Self-diagnosis
- Waterproof
- Feed back control
- Counting
- Data Acquisition
- Internet Connection
- Multi-point Discharge



■ **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	1,470
	F514SV	14	1,000	3,000	140	2	1,250	1,660
	F518SV	18	1,000	3,000	210	1	1,500	1,750
	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	2,510

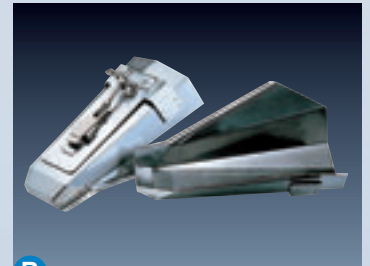
Simplicity of Design and Structure offers:

- Improved combination accuracy and speed with the minimum number of buckets
- Simultaneous combination capability offers cost effective application interface

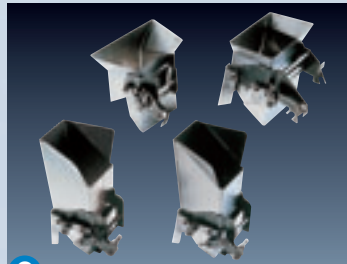
Mechanical Features of Σ F1 - Frontier & Plus



A Removable Buckets



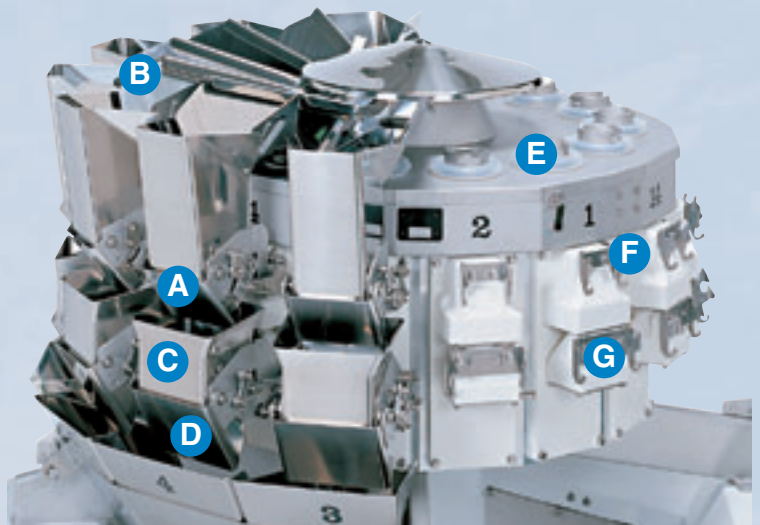
B Interchangeable linear feeder pans



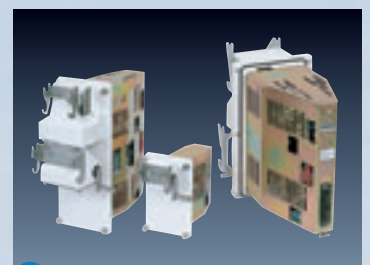
C Buckets variation



D Sealed bearings



E Top of center column



F Actuator units



G Mounting of actuator units

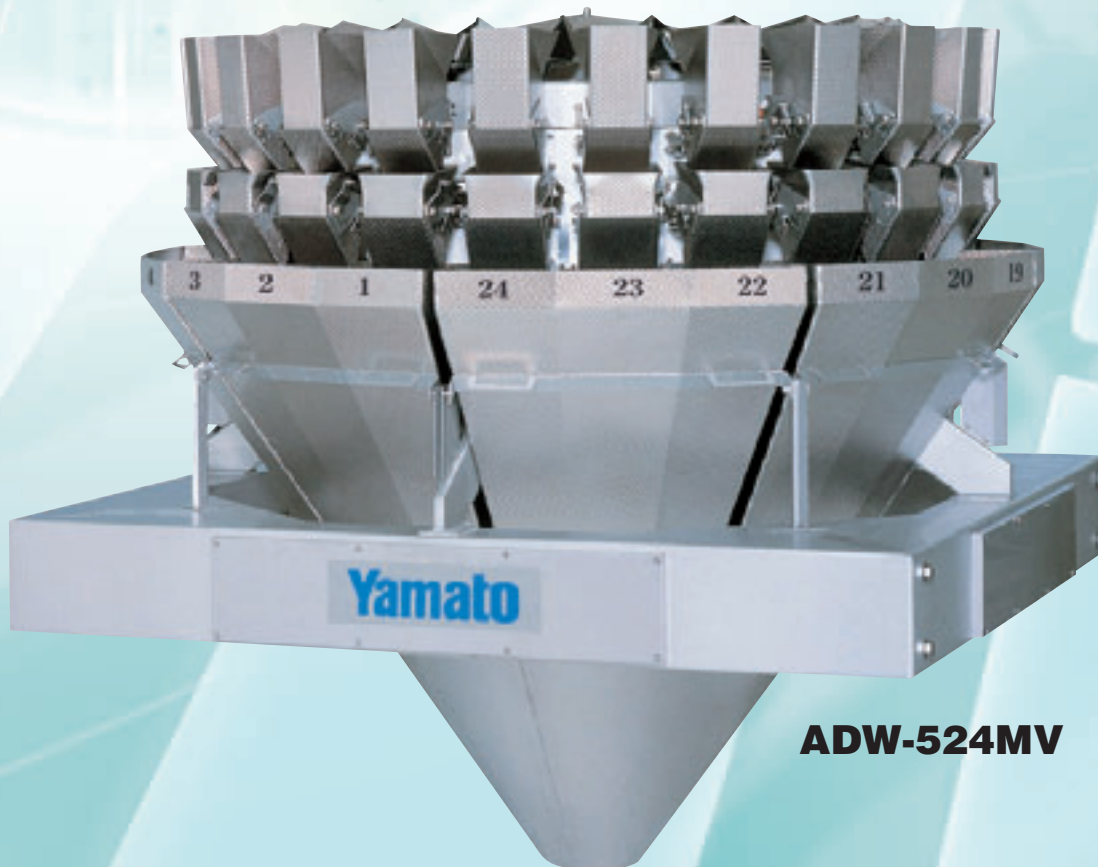


Interior of actuator units

Continuous Evolution



SIGMA F1-Plus



ADW-524MV

■ Functions



Touch Screen



Network



Self-diagnosis



Waterproof



Stagger Dump



Feed back control



Counting



Mixing



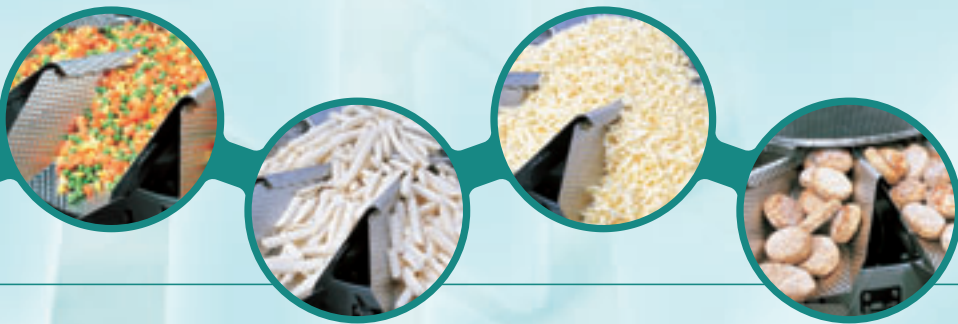
Data Acquisition



Internet Connection

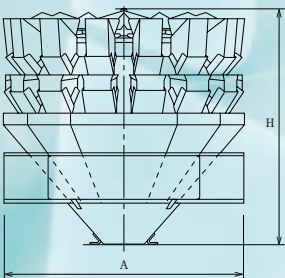


Multi-point Discharge

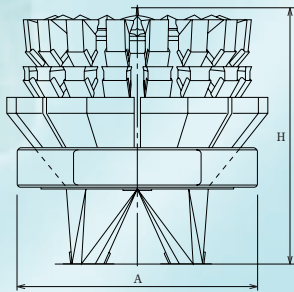


OUTSIDE DIMENSIONS

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
724MV	24	3,000	10,000	220	2	2,850	2,750
814SV	14	5,000	16,000	80	1	1,800	1,650
814MV	14	5,000	16,000	140	2	1,800	2,050

Σ F1-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 and Linear feeder pans

Durability

- Robust bucket and linkage design

Maximum Up-time

- Modular Plug in Actuator
- Buckets, pans and actuators fully interchangeable

Advanced Design Features

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



Internet Connection



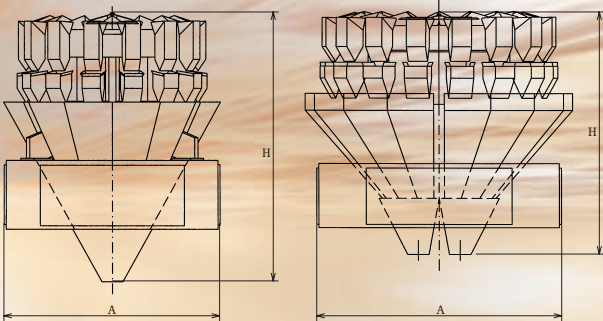
Multi-point Discharge



OUTSIDE DIMENSIONS

SINGLE

TWIN



High Accuracy, Small Target Weighing

The Compact design offers the optimum in weighing accuracy on small target weights. Compliant with all 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)
Σ F1-Compact ^{ΣF1}	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

※ 1: Options: Center Column in Aluminum and Common Bed in painted mild steel

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)	~8 Mix	Single		
	70×2=140	4 Mix×2	Twin		
24 heads Memory	70(Mix)	~12 Mix	Single		
	70×2=140	6 Mix×2	Twin		
	40(Mix)	~8 Mix	Single		
	100(Mix)	3 Mix	Single		
	70(Mix)	4 Mix	Single		

New mixing patterns to be released 2007

Mixing operation is also available with ΣF1-Plus.

Advanced, Interactive COLOR Touch Screen.

Web Camera

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



AICC-SE Advanced Interactive Command Console RCU810-A

- New powerful CPU has made it possible to assist line operators with all operational functions.
- Access port for Key board, Ethernet, CompactFlash™ to memorize Production parameters and Scale operation parameters.
- Web Camera (option)
- Built-in Printer
- Bar Code Reader (option)
- Display of temperature data to comply with HACCP requirements



COLOR Touch Screen

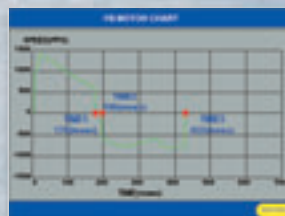
- The large (10.4") color touch screen offers a clear graphic display
- Color choice enhanced setup procedures minimizes potential errors
- Clear display in the most adverse light conditions
- Quick screen to screen response



Multilingual (17 languages), 300 programs sorted by number or name auto programming tool

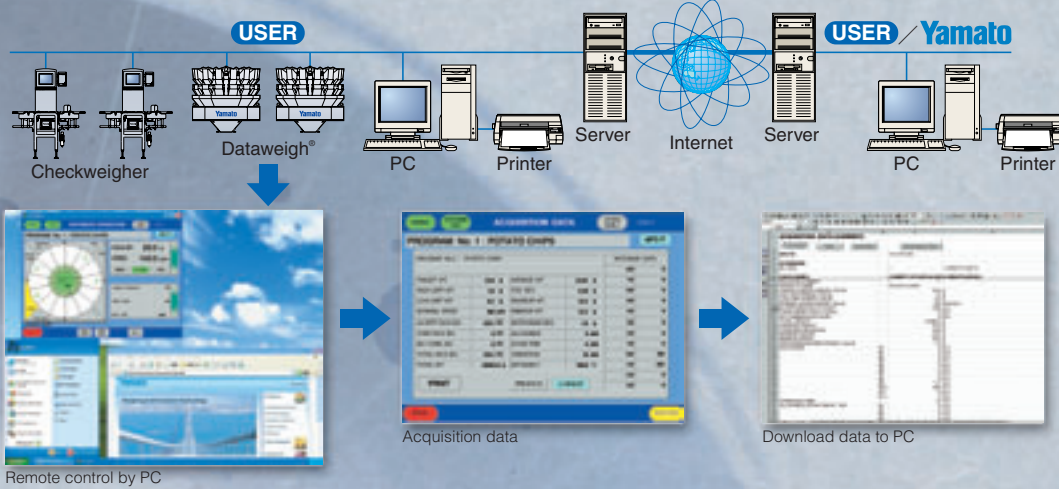


Production diagnostics (histogram, production parameters, scale operation parameters)



Mixing, Counting, Priority head, Stagger dump, Multi-discharge function

Remote Control and Maintenance through Network



Network Capabilities (Option)

- Remote control by PC through LAN
- Multiple unit control from a single AICC-SE
- Update software through network after installation
- Print through LAN
- Data acquisition
- Software for accumulation of data acquisition (COM, OPC interface)
- Feed back control between Checkweigher and Σ F1

Internet (Option)

- Comprehensive trouble shooting pages through Internet
- Send an E-mail with attachment of current program and system setting
- Receive an E-mail from Yamato including program setting and system definition
- Trouble shooting and FAQs are available at AICC-SE support corner of Yamato web page
- On-line version up of software

Remote control by PC

Acquisition data

Download data to PC



Advanced Software Operations

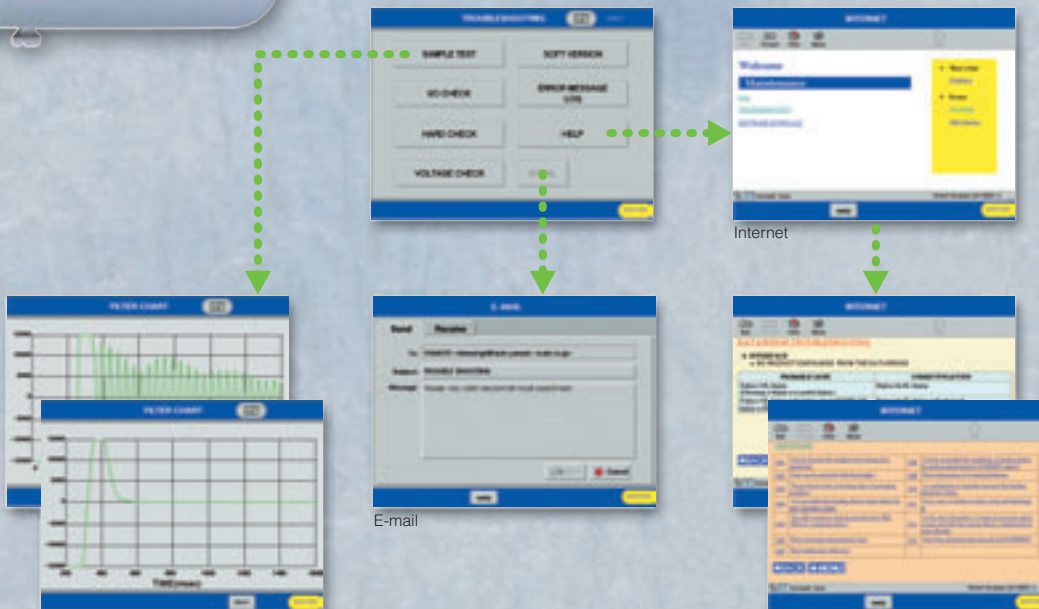
- Multilingual (17 languages)
- 300 programs sorted by number, name or optional barcode
- Auto Programming tool
- Fully programmable operational parameters
- Individual, Step Radial control (both amplitude and time)
- Auto inhibit and Auto tare
- Production diagnostics (histogram Production parameters, Scale operation parameters)

Additional and ancillary features

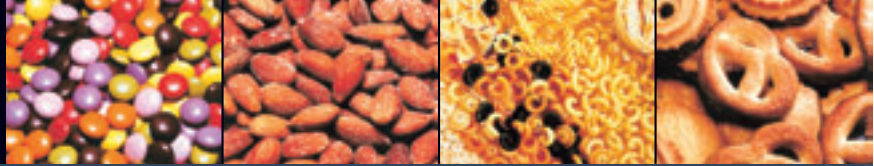
- Mixing (option)
- Counting (option)
- Priority head
- Stagger dump
- Multi-discharge

Self-diagnosis

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



Digital filtering of the load cell signal



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.
- 1992: Established Beijing Shouchang Yamato Electric Scale Co., Ltd. in China.
- 1993: Established Yamato Corporation in U.S.A.
SIGMA series with Super Command Console released.
- 1994: Established Yamato Scale Dataweigh[UK]Ltd. in UK.
- 1996: **Alpha 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.
SIGMA Plus released.
- 2002: **SIGMA Compact released.**
Alpha Plus released.
- 2003: **AICC-SE released.**
- 2005: **SIGMA F1 released.**
- 2006: **SIGMA F1 series released.**
Established Yamato Scale Russia.

[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 one or more 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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