SIGMA F1 series

SIGMA F1-Frontier
SIGMA F1-Plus
SIGMA F1-Compact
Yamato has been at the leading edge of weighing technology for more than 80 years. \( \Sigma F1 \) 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.
Maximized Sealing Clearance

SIGMA F1-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 SIGMA F1 Frontier "Bottom Based Handling" produces a clear, distinct discharge of products and therefore minimizes sealing failure.

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**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

$\Sigma F1$ Frontier series provides various types of Discharge Pattern.

<table>
<thead>
<tr>
<th>Single Discharge</th>
<th>3-Point Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Single Discharge" /></td>
<td><img src="image2" alt="3-Point Discharge" /></td>
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<table>
<thead>
<tr>
<th>2-Point Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="2-Point Discharge" /></td>
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</tbody>
</table>

Expanding Packaging Flexibility

$\Sigma F1$ 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
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

<table>
<thead>
<tr>
<th>Model Variation</th>
<th>Weigh Heads</th>
<th>Weight (g)</th>
<th>Volume per pack (ml)</th>
<th>Speed (wpm)</th>
<th>Max number of discharge points</th>
<th>Dimensions A(mm)</th>
<th>H(mm)</th>
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<tbody>
<tr>
<td>F314SV</td>
<td>14</td>
<td>500</td>
<td>1,000</td>
<td>160</td>
<td>2</td>
<td>800</td>
<td>1,380</td>
</tr>
<tr>
<td>F318SV</td>
<td>18</td>
<td>500</td>
<td>1,000</td>
<td>240</td>
<td>1</td>
<td>1,100</td>
<td>1,450</td>
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<td>20</td>
<td>500</td>
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<td>240</td>
<td>3</td>
<td>1,100</td>
<td>1,500</td>
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<td>3,000</td>
<td>140</td>
<td>2</td>
<td>1,250</td>
<td>1,740</td>
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<td>3,000</td>
<td>210</td>
<td>1</td>
<td>1,500</td>
<td>1,770</td>
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<tr>
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<td>2,000</td>
<td>6,000</td>
<td>110</td>
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<td>100</td>
<td>2</td>
<td>1,800</td>
<td>2,590</td>
</tr>
</tbody>
</table>

Mechanical Features of Σ F1 - Frontier & Plus

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
H. 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
• 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

<table>
<thead>
<tr>
<th>Model</th>
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<th>Speed (wpm)</th>
<th>Max number of discharge points</th>
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<td>70</td>
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<td>1,000 1,040</td>
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<td>1</td>
<td>1,000 1,140</td>
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<td>2,000</td>
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<td>1,100 1,140</td>
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<td>2,000</td>
<td>140</td>
<td>1</td>
<td>1,500 1,430</td>
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<td>16</td>
<td>1,000</td>
<td>2,000</td>
<td>220</td>
<td>2</td>
<td>1,500 1,490</td>
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<tr>
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<td>20</td>
<td>1,000</td>
<td>2,000</td>
<td>240</td>
<td>4</td>
<td>1,500 1,720</td>
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<td>5,000</td>
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<td>1,250 1,260</td>
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<td>1,800 1,800</td>
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<tr>
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<td>10,000</td>
<td>100</td>
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<td>1,600 1,570</td>
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<td>14</td>
<td>3,000</td>
<td>10,000</td>
<td>140</td>
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<td>2,390 1,800</td>
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<tr>
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<td>10,000</td>
<td>150</td>
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<td>2,200 2,450</td>
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<td>10,000</td>
<td>150</td>
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<td>2,100 1,620</td>
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<tr>
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<td>16,000</td>
<td>80</td>
<td>1</td>
<td>1,800 1,650</td>
</tr>
<tr>
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<td>14</td>
<td>5,000</td>
<td>16,000</td>
<td>140</td>
<td>2</td>
<td>1,800 2,050</td>
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</tbody>
</table>
Compact and Functional Design

Σ

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
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

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<th>Dimensions A(mm)</th>
<th>H(mm)</th>
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</thead>
<tbody>
<tr>
<td>214SD/SW</td>
<td>14</td>
<td>200</td>
<td>500</td>
<td>160</td>
<td>2</td>
<td>800</td>
<td>790</td>
</tr>
<tr>
<td>216SD/SW</td>
<td>16</td>
<td>200</td>
<td>500</td>
<td>180</td>
<td>2</td>
<td>900</td>
<td>840</td>
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<tr>
<td>216MD/MW</td>
<td>16</td>
<td>200</td>
<td>500</td>
<td>240</td>
<td>2</td>
<td>900</td>
<td>940</td>
</tr>
<tr>
<td>220SD/SW</td>
<td>20</td>
<td>200</td>
<td>500</td>
<td>240</td>
<td>2</td>
<td>1,100</td>
<td>920</td>
</tr>
<tr>
<td>224MD/MW</td>
<td>24</td>
<td>200</td>
<td>500</td>
<td>300</td>
<td>4</td>
<td>1,250</td>
<td>1,400</td>
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<tr>
<td>314SD/SW</td>
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<td>1,000</td>
<td>160</td>
<td>2</td>
<td>800</td>
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<td>1,000</td>
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<td>2</td>
<td>900</td>
<td>840</td>
</tr>
<tr>
<td>316MD/MW</td>
<td>16</td>
<td>500</td>
<td>1,000</td>
<td>240</td>
<td>2</td>
<td>900</td>
<td>940</td>
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<tr>
<td>320SD/SW</td>
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<td>500</td>
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<td>240</td>
<td>2</td>
<td>1,100</td>
<td>920</td>
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<tr>
<td>324MD/MW</td>
<td>24</td>
<td>500</td>
<td>1,000</td>
<td>300</td>
<td>4</td>
<td>1,250</td>
<td>1,400</td>
</tr>
</tbody>
</table>

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

Precision mixing up to 8 products with typical mixing patterns

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

Mixing operation is also available with ΣF1-Plus.
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

Self-diagnosis

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

### 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.
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.
1985: Produced Japan’s first electronic crane scale.
1986: First Dataweigh ADW-110 developed.
1988: Developed the Datacell and its load cell were approved by P.T.B. in F.R. Germany.
RA series launched.
1990: Established Shanghai Yamato Scale Co., Ltd. in China.
1992: Established Yamato Scale Corporation in U.S.A.
SIGMA series with Super Command Console released.
1994: Established Yamato Scale Dataweigh(UK) Ltd. in U.K.
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.
2005: SIGMA F1 released.
2006: SIGMA F1 series released.
Established Yamato Scale Russia.
2008: Established Yamato Scale India.
2010: Established Yamato Scale Benelux.

[Worldwide Sales & Service Network]

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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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E-mail: info@yamatoscale.be

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