

# VERTICAL FORM FILL SEAL MACHINES



## Vertical Form, Fill Seal Machines:

With over 30 years experience, Audion manufactures a complete line of reliable, flexible, low maintenance, user-friendly machines. The Audion AVM range of fully automatic machines is one of the most extensive in the industry.

The AVM is a vertical form, fill and seal machine, which automatically forms a bag from a flat roll of film, allow it to be filled with free flowing product, and then seal and separate the finished package. Using the appropriate dosing system, these bags can automatically be filled with free flowing solid, powder or liquid products.

Audion can supply the integrated system, including the dosing equipment, packaging machine and necessary feeding systems. In addition to the standard range Audion has a special engineering department where machines are developed and built to customer specifications.

### AVM 200 IC

The AVM 200 IC is the most compact Audion vertical form, fill and seal machine. This bagger is ideal for the packaging of parts and other small items in bags; reducing material costs and increasing production speed.

#### Optional Feeding System (Optimizer)

This system will improve production output and is ideal when bagging parts as a kit. The feeding system of the AVM 200 IC consists of a sorting table on which the product can be placed, a conveyor belt with dividers, and a product counter with photo eye. The operator manually fills the conveyor sections. The conveyor automatically dispenses the product into the AVM 200 IC. When the set number of filled sections is counted, the machine automatically seals the bag.

#### Optional intermittent discharge conveyor (ATBI)

This intermittent discharge conveyor can also be used as a support for bagging heavy products.



AVM 200 IC



AVM 200IC + optimizer + ATBI

## AVM 190 HS

The AVM 190 HS can be used to pack many different products, such as granules, powders, liquids, and solids. The low height of the machine (less than 1200 mm) means that product feeding can be done manually or by means of a fully automatic dosing system, which Audion can supply.

The complete AVM 190 HS range is designed to be integrated with a multi head/multilane scale, as well as auger, pump or volumetric filler.

The AVM 190 HS is available in the following versions:

- **AVM 190 HS:** High speed for laminates and PP
- **AVM 190 HSI:** High speed Impulse for PE film

The AVM 190 HS is a High Speed version, able to achieve a production speed of 100+ bags/min. The AVM 190 HS has 12 mm wide horizontal heat seal bars, pneumatically-adjustable film transport belts, and a touch screen operator interface.

The AVM 190 HSI is specially designed for applications where polyethylene (PE) material is used. The AVM 190 HSI is equipped with special impulse horizontal seal bars to ensure perfect sealing of polyethylene (PE) bag material. The AVM 190 HSI also features the ability to set the cool down temperature, giving the seal the necessary strength to



AVM 190HS

hold the weight of product in the bag. The AVM 190 HSI gives a fast, high integrity seal even with thick materials.

## AVM 320 I & AVM 350 H

The AVM 320 I and the AVM 350 H are designed to make bags with a width of up to 320 or 350 mm and a volume of up to 10 liters. This robust fully automatic vertical form, fill and seal machine is available in a heat seal version for PP and laminates (AVM 350H) and an impulse seal version for PE materials (AVM 320I).

For the potato industry as well as for other delicate products such as oranges, Audion has developed the AVM 60° inclined machine. The product is dropped in the bag through a filling chute which is placed at an angle of 60°, minimizing product damage. In addition, this machine is able to work with mesh material (such as CLAF® fabric).



AVM 320 I



## AVM 550 Impulse Servo

The AVM 550 impulse SERVO is Audion's largest fully automatic vertical form, fill and seal machine. The AVM 550 I Servo can make bags with a width of up to 550 mm and volume of 40 liters.

Film loading on the AVM 550 SERVO is quick and easy, using the specially designed reel holder. Once the film is placed on the reel holder, the end can be taped or sealed to the last piece of the previous roll for a rapid film changeover.

### Features AVM Range

- User friendly programming by touch screen
- PLC controlled operation and sealing
- Easy exchange of form shoulder
- Self diagnostic information system
- 50 program memory storage
- Batch counter
- Pneumatically adjustable film transport belts (Not for AVM 200 IC)
- Inverter controlled film transport motor
- Inverter controlled motor for unwinding film roll (Only AVM320/350)
- Automatic jaw release if product is trapped between the seal jaws
- Bi-active horizontal seal bars
- Print registered film capability
- End of film detector
- Overlap and fin seal
- CE compliant

### Options:

- Stainless steel - Specially designed for the harsh environment of the food industry, the machine can also be delivered with a stainless steel wash down construction and IP 65 classification.
- Servo on the horizontal seal bars. The accurate control of the servo motor increases the production speed, without compromising seal performance. The result is a very fast and smooth running AVM machine. Using servo driven horizontal seal bars, this machine achieves a high production speed

without compromising seal integrity. When small bags are required, the opening of the servo driven horizontal seal bars can easily be reduced by mean of the touch screen.

- Servo on the transport belts for fast speed film transport, film transport fully adjustable for fragile film material and accurate bag length
- Discharge conveyor to bring the product out of the machine up to a workable height
- Encoder wheel when using non printed film in combination with a printer
- Double stroke in order to increase the bag length
- Chain bags
- Catch plates to prevent the product from damaging
- Air press device in order to get the air out of the bags
- Perforation unit to let air out the bags
- Gas flush for modified atmosphere packaging (MAP)
- Dust collector to improve seal quality by dusty products
- Automatic web tracking control
- Bar coding, printing and labelling systems fully integrated
- Static eliminator
- Support table for packaging bags over 1,5Kg



AVM 550  
including belt doser

### Package styles

- Pillow bag
- Block bottom bag
- Gusset bag
- Chain bags
- Tear notch
- Quatro bag

### Seal options

- Twin seal - for liquid products
- Gas tight seals
- Hole punch - round, Euro hole, carrying handle

Technical specifications	AVM 200IC	AVM 190 HS	AVM 190 HSI	AVM 320I	AVM 350 H	AVM 550 I SERVO
Bag width (min-max)	50-200 mm	50-190 mm	50-190 mm	50-320mm	50-350 mm	150-550 mm
Bag length (min-max)	50-200 mm	50-300 mm	50-300 mm	50-450 mm	50-450 mm	150-600 mm
Volume (max)	1200 cm <sup>3</sup>	2000 cm <sup>3</sup>	2000 cm <sup>3</sup>	10000 cm <sup>3</sup>	10000 cm <sup>3</sup>	50000 cm <sup>3</sup>
Max. weight per bag**	1500 g	1500 g	1500 g	1500 g	1500 g	On request
Film thickness PP (min-max)		25 – 80 µm			25 – 80 µm	
Film thickness PE (min-max)	40 – 200 µm		40 - 200 µm	40 – 200 µm		40 – 200 µm
Film thickness laminates		On request	On request	On request	On request	On request
Max. capacity with PE*	40 bags/min		40 bags/min	40 bags/min		40 bags/min
Max. capacity PP*		80 bags/min			60 bags/min	
Inner diameter film	75 mm	75 mm	75 mm	75 mm	75 mm	
Max. diameter film roll	400 mm	400 mm	400 mm	400 mm	400 mm	400 mm
Air pressure	7 bar	7 bar	7 bar	7 bar	7 bar	7 bar
Air consumption	200-400 l/min	200-400 l/min	300-600 l/min	300-600 l/min	200-500 l/min	100-300 l
Machine dimensions (LxWxH)	1200 x 700 x 960 mm	1545 x 910 x 1175 mm	1545 x 910 x 1175 mm	2025 x 1320 x 1845 mm	2025 x 1320 x 1845 mm	2327 x 1728 x 2502 mm
Machine weight	150 kg	230 kg	230 kg	450 kg	450 kg	700 kg
Voltage	230 V/1ph - 50-60 hz	230 V/1ph-50/60hz	230 V/1ph-50/60 hz	230/400V-3ph-50/60 hz	230/400V-3ph-50/60 hz	230/400V-3ph-50/60 hz
Power	1.4 kW	1.4 kW	1.6 kW	2.5 kW	2 kW	4 kW

Options						
Pneumatically adjustable film						
transport belts	-	●	●	●	●	●
Gas flush for modified atmosphere						
packaging (MAP)	○	○	○	○	○	○
Dust collector	○	○	○	○	○	○
Product catching plates	○	○	○	○	○	○
Air press device	○	○	○	○	○	○
Support table for packaging bags						
over 1,5Kg	-	○	○	○	○	●
Perforation system	○	○	○	○	○	○
Bar coding, printing and labeling	○	○	○	○	○	○
Encoder wheel on film transport	○	○	○	○	○	○
Stainless steel wash down construction						
(IP 65)	-	○	○	○	○	○
Servo driven horizontal seal bars	-	○	○	○	○	●
Servo driven film transport	-	○	○	○	○	●
Inverter controlled roller system for quick and easy change of film reels						
	-	-	-	○	○	●
Inverter controlled motor for film roll unwinding						
	-	○	○	●	●	○
Automatic web tracking	-	○	○	○	○	○
60 degrees inclined machine	-	-	-	○	○	-
Discharge conveyer	○	○	○	○	○	○
Optimizer table + conveyer	○	-	-	-	-	-
Multiple vertical stroke	○	○	○	○	○	○
<b>Packaging styles</b>						
Pillow bag	●	●	●	●	●	●
Block bottom bag	-	○	○	○	○	○
Gusseted bag	-	○	○	○	○	○
Chain bags	○	○	○	○	○	○
Tear notch	○	○	○	○	○	○
Quatro bag	-	-	-	○	○	-
<b>Seal Options</b>						
Hole punch - round, euro, carrying	○	○	○	○	○	○
Twin seal - for liquid products	-	○	-	-	○	-
Gas tight seal	-	○	-	-	○	-

● = Standard      ○ = Option      - = not available

\* Capacity is dependent on packaging material, product, environment, etc.

\*\* Weight without support table



## Dosing systems

Besides the advanced packaging machines, Audion manufactures and supplies a wide range of automatic dosing equipment suitable for all types of products. For every product, Audion has the solution to meet the customer's demand. When high speed and accuracy are required, we have multihead digital combination scales. For liquids we have pumps, for powders an auger, and for extremely free flowing products we can supply a volumetric cup dosing system. Audion also manufactures the complementary equipment to transport the product to and from the packaging machine. All these systems have their own product range and there is sure to be a solution that will suit your needs.

### Linear scale

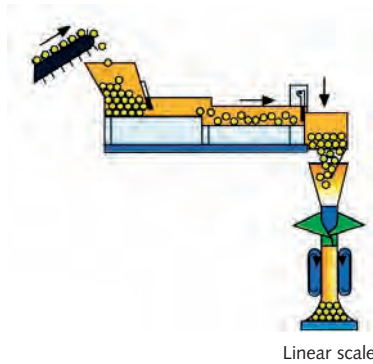
The Audion linear scale consists of a weigh bucket with two feeding lanes (fine and coarse). The product is transported from a storage hopper to the weigh buckets by vibration. When the set weight is almost reached the coarse lane will close and the final weight will be made by the fine lane. The scale is controlled by a PLC with menu operated software. The scale is very flexible and can be used for all types of free flowing products, including rice, coffee, candy, potato chips, pet food, and fertilizer.

#### Features of the twin scale:

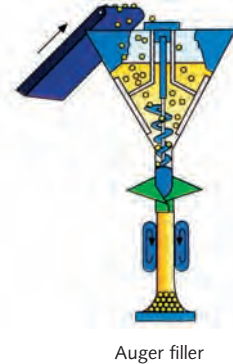
- PLC controlled operation
- User-friendly handheld controller
- 10 program memory
- Weighing range of 50-5000 gram
- Microprocessor optimized vibration speed
- Two feeding lanes per weigh bucket (coarse and fine)

### Auger filler

The Audion auger filler is a servo driven dosing system for powders. The machine features stainless steel construction, is easy to clean, and is suitable for the pharmaceutical and food industry. In the storage hopper an independently driven stirrer continuously mixes the product for high accuracy. The required volume is



Linear scale



Auger filler



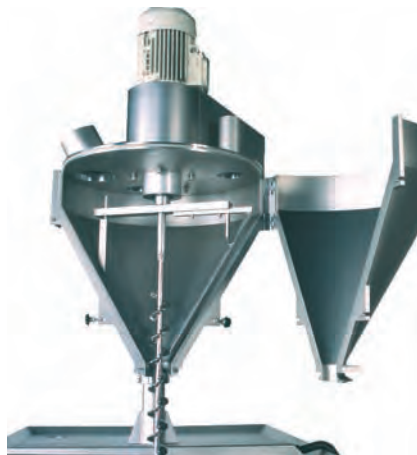
Volumetric cup doser



Multi head

electronically adjustable by setting the rotations of the auger. An optional level controller in the hopper can be connected to a feeding system for automatic product refilling.

The Audion volumetric doser is available in a 1, 2 or 6 cup version. The 1 cup version is pneumatically operated and the 2 and 6 cup versions are driven by an inverter controlled motor, resulting in higher production speed and product volume.



Auger filler



Volumetric cup doser

### Volumetric doser

The Audion volumetric doser can be used for free flowing products that need to be packed in a set volume. The volumetric doser comes with a storage hopper and a set of telescopic cups. The system can be equipped with optional discharge valves. These valves are needed to dosage fine products like sand, sugar or salt.

#### Features

- Telescopic cups with an adjustment range of 1:2
- Cup size can be changed without tools
- Multi dump for greater product volume versatility
- Product contact parts made of stainless steel and/or food approved materials

### Multi head Weigher

The Audion multi head combination scale enables cost effective performance in packaging free flowing products. This scale is characterized by its high production speed, accuracy, easy operation, and simple maintenance.

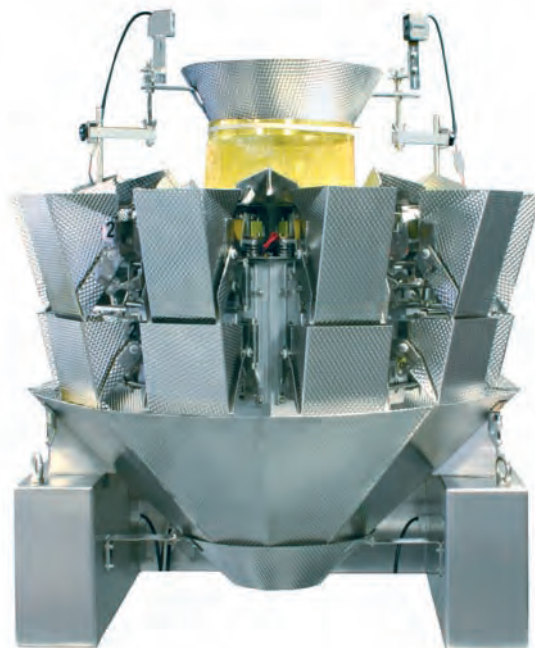
The compact stainless steel body size not only enhances its installation capabilities but also helps to reduce costs for peripheral equipment such as support stands and product feeders. A user-friendly handheld touch screen provides simple operation with integrated functions.

#### Features

- 10/14 weigh buckets – for choosing the optimal weight combination
- High accuracy load cell for weight calculation
- Stepper motor for smooth operation.
- Automatic opening/closing weigh bucket speed adjustment – minimizes product damage
- Stainless steel and anodized aluminum frame
- Stainless steel product contact points
- 50 program product memory

#### Options

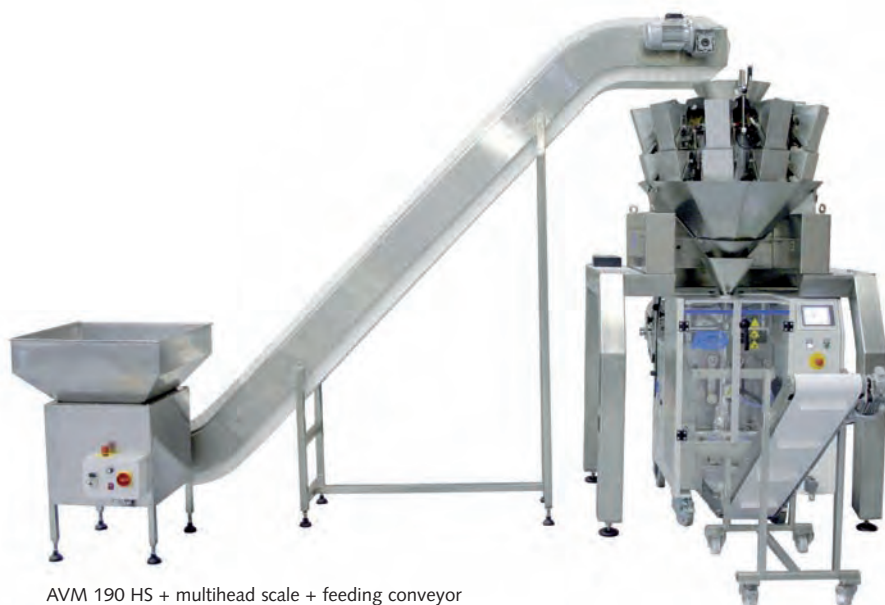
- Buckets with dimple plates – for sticky products
- Load cell under center cone for controlling the feeding system



Multihead scale

Technical specifications	AMHW B10	AMHW B14
Weigh buckets	10	14
Capacity*	Up to 70 dumps/min	Up to 130 dumps/min
Average deviation*	0,3 – 1,5 g	0,3 – 1,5 g
Max weight	6500 g	6500 g
Max. volume	1300 ml	1300 ml
Weight (min-max)	10-1000 g	10-1200 g
Max. product length	80 mm	80 mm
Machine dimensions (lxwxh)	1136x950x1050 mm	1236x1020x1300 mm
Machine weight	310 kg	420 kg
Voltage	230 V-1 ph – 50/60 Hz	230 v -1 ph – 50/60 Hz
Power	1,2 KW	1,5KW

\*Depending on product, product feeding, environment conditions, etc.



AVM 190 HS + multihead scale + feeding conveyor



**Belt doser**

The Audion belt doser is primarily used for potting soil or similar products. Product is delivered to the belt from a storage hopper. Product height is controlled by an adjustable valve. Keeping the belt timing constant assures feeding accuracy. This system is very flexible and is normally used for applications that require large volume.

**Liquid dosing pump**

Audion has a full range of stainless steel pumps for dispensing liquids. These pumps are used to fill the AVM with a set quantity of liquid. The pumps can be set to dispense product automatically or semi-automatically, if desired. Depending on the liquid and dispensing requirements, Audion can supply a suitable pump.

**Counting systems**

When the number of products is more important than the total weight Audion can supply counting machines. These can be a simple vibratory bowl feeder or a high capacity multi-lane linear counter. The type of counting unit depends on the required capacity, type of product, and number of products per dump. Audion has counting systems for the food industry as well as industrial applications.



AVM 190 HS multihead scale and feeding conveyor



AVM 350 H 60° inclined



AVM 320 I + Volumetric doser + discharge conveyor