



**KAV systems**  
*Technology & Development LTD.*

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Multigrader

## The Multipurpose Weight Grader



One of the most frequent problems in the food industry is over or underweight products that are often required to be sized. The classified packaging process is another problem that is common in production of many food products.

In both cases the losses for the producer may be significant - either in overweight (Give-Away), rejected packs or lost customer confidence due to underweight. The overweight often found in fixed weight packages containing meat, fish or poultry is a certain way to a reduced profit - and often significantly higher than expected.

### From Grading to Multi Product Batching

The **KAV** Grader carries out virtually any grading and batching job - even several jobs simultaneously - handling fish, poultry, meat, fruits & vegetables or other food products - be it fresh, glazed, frozen, breaded, marinated etc.

The batching possibilities of packing products either to fixed target weight or to fixed target count are endless.

Even Multi Product Batching of a user defined mix of different products to fixed weights - with accuracies previously unobtainable - is now possible with the **KAV** Grader.

### Increased Throughput with Short Pay Back Time

Manual packing is time-consuming, expensive and a sure recipe for overweight. The **KAV** Grader can automate almost any packing operation and will increase the throughput of up to 200 products per minute at each cups lane, dependent on the product characteristics.

It is therefore no coincidence that the payback period for a **KAV** Grader usually is very short.

### The Most Innovative Machine

The **KAV** Grader is capable of operating different batching jobs as well as a number of sizings, grading and minimum batching jobs simultaneously.

Additionally it is possible to prioritize each job ensuring that the majority of products are used for the most important jobs, obtaining a premium price without limiting the capacity of the machine.

### The Yield Optimizer

For any food processor it is vital to secure the optimum yield of raw material. Consequently accurate sizing/grading by weight is necessary to deliver similar sized products to cutting or filleting machinery, or raw material into product stocks.

After sizing/grading products can easily be chosen to provide the optimum yield for any user defined task or requirement. Increasingly, secondary processors want the raw material sized/graded in specific sizes, enabling the supplier to charge a higher price.

The **KAV** Grader is the cost-effective solution to achieve an accurate and fast sizing/grading of raw material.

## Accurate Grading Means Optimum Profit



For any given product we are able to calculate how much a **KAV** Grader can reduce the give-away in your production and how much more efficiently your products can be utilized. On the basis of this calculation and the savings in labor you can determine the economic impact and pay-back period specifically for your company when investing in a **KAV** Grader.

### Handles Almost Any Product

There is a range of **KAV** Weight Graders available offering different handling cups enabling virtually any product to be sized, e.g. fillets or whole fish, portions of or whole birds, ham, shellfish, whole salmon, turkey etc. Based on our in-

depth experience of weighing technology, software and reliable weighing machine design, the **KAV** Grader is created as a very cost-effective answer to many simple sizing and grading applications.

### Excellent Features

The **Kav** Grader is available with the following features:

- high speed performance (up to 200 items per minute per lane)
- gentle handling of the products
- auto-check procedure for better accuracy and hygiene
- Wide range of products weight (20 -10,000 gr.)
- high accuracy 2.5 g division (higher option of 0.5 g available)
- change of job during production
- easy and efficient cleaning
- prioritizing of jobs
- automatic Service Information System
- print -out possibilities
- endless preset weighing programs
- communication with auxiliary equipment

### User Friendly Operation

Operating and adjusting the **KAV** Grader is very easy. Selecting and activating programs may be done via the PC connection by finger touch.

For instance, in a fish grading process where there may be a need for different programs for various fish species, changing from one program to another is done by the flick of a switch.

All programs in the **KAV** Grader can be changed or adjusted on-line, making it possible to isolate a channel or change the weighing ranges during operation.

### A Tough Precise Machine

The weighing machine contains a high precision load cell, hermetically sealed (optional) and extremely well protected against water, dust and grime. The use of high precision load cells and the unique weigh unit design, cater for the problems related to high speed dynamic weighing, providing unrivalled accuracy featuring 2.5 g division (option of 0.5 g available)

### Advanced Software Option

When sizing raw material for feeding, filleting or deboning machines, the implementation of the computerized operating system and software will ensure a constant uniform flow of products to the processing machines and thereby achieve optimum yield from the raw material, ensuring accurate weighing even under the most wet and tough conditions.

The unique and well protected weigh unit effectively protects the tough, yet very sensitive load cell against both static and dynamic overload.



### **Reliable, Tough and Waterproof**

The entire range of machines is designed for the wet and harsh environment often found in the food industry. The machines are manufactured from stainless steel (AISI 304) or other non-corrosive, non chipping materials throughout.

The heart of the weighing machines is the hermetically sealed load cell and the high protected opening solenoids that are installed to stand humid conditions.

### **High Speed Performance**

The unique mechanical design of the weighing units, the use of high precision engineered components and dedicated computer techniques allow for high speed weighing (up to 200

weightings per minute per lane) without affecting the accuracy.

### **Machines for Most Food Products**

The driven cups integrated into the machine, are available with different size to fit wide range of products size and are able to gentle handling of most fresh, frozen, breaded or marinated products.

Unlike other weighing systems the product is not harshly deflected and hit by any aggressive mechanical device but is gently being dropped by inclination of the carrying cup.

### **Large Throughput**

The various options of singulating infeed device that are supplied for any given product, ensures high throughput and proper operation of the machine.

The singulating device is driven by the main drive of the grader to ensure proper infeed of the product into the weighing cups.

This specially designed infeed system ensures for wide range of products to be fed at a proper frequency and avoids failure and thus increasing the actual capacity of the machine.

Unlike other weighing machines, no return process for mechanical deflector device is required for take out of graded product into the chute. This method has reduced significantly the reject time for better total throughput of the machine.



### **Gentle Handling of the Products**

When designing automatic machines for the food industry, gentle handling of products is a key issue. In addition to having carefully designed bins and chutes, the cups weighing machines that is mostly used for gentle fruits and vegetables sorting, incorporate the intelligent sensor/computer routine which measures the actual weight of each product and enables the most gentle movement of the product throughout the weighing and drop of the product into chute.

No deflecting device that might damage the product is involved in streaming out of product.

### **Space saving Design**

The cup graders are available with a multilane options and thus enable almost any required sorting capacity (up to 200 pcs/min per lane) reducing the length of the machine thus reducing space requirements.

The **KAV** Grader with its compact design, probably provides the most versatile grading and batching machine available providing unrivalled accuracy featuring 0.5 g division (option of 0.2 g available).

### **Sanitation and Accuracy**

The weighing accuracy of the **KAV** Grader has been improved considerably owing to the unique auto cups check feature, that allows for checking the accumulation of dirt and residues which often occurs in conveying of food products which are notoriously difficult to handle on conveyors - such as diced meat, chicken liver and kidney, mussels, shrimps, vegetables etc.

### **Automated singulating infeed (Optional)**

**KAV**-Systems offers several automatic infeed systems designed to increase the in feed speed and to maintain a correct spacing of the products or product items - whilst at the same time reducing or eliminating the need for operators.

Due to wide range of sized products, the design of automated singulating infeed is customized and offered for any specific product as additional option.

### **The High Speed Way to Boost Your Profit**

The **KAV** Grader has highly intelligent and dynamic software based on High Speed Computer Weighing Technology able to create fixed weight packs to accuracies not seen before - irrespective of item weight distribution.

Simultaneously the packing operation is automated, reducing labor costs.

### **Solutions Instead of Machines**

When investing in the **KAV** Grader you will not only benefit from buying probably the best grading machine available anywhere, but also from automating the processing line.

Designing the optimum solution for each customer - based on a thorough analysis of product flow and needs - the **KAV** Grader is configured from a very wide range of customized cost-effective standard modules and - often - ancillary equipment to enhance the infeed and packing operation.

### **Taylor Made Machine**



Due to the versatile structure of the machine, special design for any given application is being performed by the Kav-Systems engineers.

To facilitate the best suitability of the machine to any requested application, Kav-Systems offer 28 years of experience in design and establishment of food processing installations world-wide.

Our customer gains well proven know-how and experience in the production process, that enable best integration of the Multipurpose **KAV** Grader into any existing and/or brand new application.

For further details please contact

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