

# Clamping Force Control Devices

The most advanced technology in hydraulics, electronics and laser sensors for clamping force control on carton clamps



### Four-Stage Pressure-Relief Valve (manually controlled)

Manually controlled four-stage pressure relief valve. Specially recommended to be used in combination with , carton clamps and sensitive loads. Adjustable pressure settings with the possibility to configure 3 different pressure stages plus the bypass pressure from the truck.



### Four-Stage Pressure-Relief Valve (electrically controlled)

Electrically controlled four-stage pressure relief valve. Easy clamping pressure selection from the lift truck cabin. Specially recommended to be used in combination with carton clamps and sensitive loads. Adjustable pressure settings with the possibility to configure 3 different pressure stages plus the bypass pressure from the truck.



### Pressure-Control Lights

To be used in combination with electrically controlled four-stage pressure relief valve. Lights in the light tower indicate the selected pressure setting.



### Force-Matic V4

The Bolzoni Auramo Force-Matic V4, is an innovative, fully mechanical, automatic pressure control system designed specifically for clamp equipped forklifts. Force-Matic V4 is an effective system designed to prevent over-clamping when handling home appliances but it can also be used with other clamp models.

Force-Matic V4 optimizes clamping factor setting. The valve works as a mechanical calculator which adjusts the clamping pressure according to the load weight.

Force-Matic V4 works with two separate hydraulic circuits:

- Circuit 1 measures hydraulic pressure in the forklift mast cylinder and calculates the load weight;
- Circuit 2 regulates clamping force automatically with input from circuit 1.

These two separate hydraulic circuits provide Force-Matic V4 with a wide opening range: from low initial clamping force up to max required clamping force with high stability.

The two hydraulic circuits are mechanically connected by means of a link, mechanically adjustable to give the optimal clamping force according to the load weight.

Installation and adjustments are quite straightforward requiring only normal tools.

Clamp fitted with Force-Matic V4 assures damage-free handling and operator-friendly use while operating in the same way as any traditional clamp.

Force-Matic V4 can be installed on Bolzoni Auramo clamps – contact Bolzoni Auramo for information.

#### Features:

- Effective pressure control device.
- Load damage prevented by adjusting the clamping pressure according to the load weight.
- Fully mechanical, no electrical connections required.
- Heavy duty aluminum construction.
- Built-around standard hydraulic components
- for easy service.
- Wide adjustability range for use on to most truck-clamp combinations.
- High operating speed.
- Easy installation.
- Low maintenance.

#### Options:

- Electric by-pass valve.
- When activated this valve, disables the Force-Matic V4 and puts the clamp in manual model.



### 4 Point Clamping Force Tester

Bolzoni Auramo, as primary expert of the industry sector, with 70 years experience and know-how of the specific handling procedures in white goods, enlarges its proposal with a complete service back up and check for correct clamp configuration.

Bolzoni Auramo 4 Point clamping force tester – based on load cell technology - is able to measure the single force acting on each point, to calculate the total clamping force developed on the whole pad surface and to detail the exact percentage of force acting on each point. The device can be adapted to various pad dimensions as the positions of the measuring points are adjustable.

The user friendly LCD interface of Bolzoni Auramo 4-Point tester allows the saving of the current values and the acquisition of all the data on a USB memory stick.





### Easy-MOVE Laser Sensors System

In the white goods industry the handling problems caused by the use of incorrect clamping force can create serious risks of products damaging: insufficient pressure results in the product being dropped, while too much pressure can crush or damage the package and its content.

Bolzoni Auramo integrates standard technical features of the KS-C model carton clamp with the most advanced technology in hydraulics, electronics and laser sensors for clamping force controlling.

**The new intelligent system is an electronic control of the clamping force**, driven by the number and dimensions of the unit loads which have to be handled. The laser sensors and the electronic micro-control allow the system to detect the load and input the correct clamping pressure through a proportional pressure relief valve.

The micro-control can be managed by a Bolzoni Auramo configuration tablet. Through an easy procedure (touchscreen based) the operator can adjust the handling load parameters, recalibrate the sensors if necessary, associate the opening ranges to the required pressure levels. It is also possible to recalibrate the pressure levels in case of introduction of new loading schemes and finally to switch to single pressure manual mode.

Bolzoni Auramo Easy-move system is providing outstanding **benefits** to all the operators of the logistic chain in white goods (end users, 3PLs, forklift truck providers):

- Completely **automatic system** with no responsibility left to truck drivers for wrong pressure choice; the truck drivers are not even allowed to interfere with clamp parameters that are factory set and – only if necessary – modified by forklift trucks provider and/or end user's logistic experts;
- The clamp can be used as a conventional clamp with **no need of further training for truck drivers** or additional truck driving operations;
- **User friendly set up** interface thanks to easy software graphics and possibility to use Bolzoni set up tablet: it is easy to load new configuration schemes;
- **Very low TCO** (total cost of ownership) due to complete clamp and laser sensors protection: the sensors are located behind the load encapsulated in the chassis design and they are never touched or hit by the load
- Very **easy electrical connection** to truck ports thanks to spiral cable included in the package;
- In case of any type of clamp emergency the software allows easy switch to manual mode avoiding all possible stops in handling procedures.

