



**CICORIA**  
SQUARE BALERS



# BIG BALER HD

THE ARCHIMEDES LEVERAGE SYSTEMS



ENGLISH

**ENGINEERED** *and*  
**MADE IN ITALY**

## OUR SPECIALISATION

**A solid tradition since 1927** and a deep experience in the industry of balers gained in 50 years activity in four continents.

These are the cornerstones of our specialisation and the technological progress of our Big Balers series HD, which are synonym of functional simplicity and

unequalled capability in pressing even with medium power tractors, reducing bale costs.

Hay, straw, corn stalks, sorghum, and all crop residues are highly pressed and perfectly binded in every hour of the day, even at high temperatures and high environmental humidity.

## OUR INDUSTRIAL SETTLEMENT

**Our story started and continues still today in Southern Italy, in Basilicata, a few kilometres from the Melfi automotive centre (FCA).**

A territory full of tradition characterised by a strong agricultural vocation and a considerable production of high quality cereals and straw.

Here we engineer and manufacture our Big Balers, a machine at the forefront of the technology.

**This territory, thanks to a particularly hot climate and uneven terrains, often with clay and stones, offers ideal operative conditions to severely test all our products, and win new challenges worldwide.**



## THE REAL TECHNOLOGICAL TURNING POINT IN BALING

Innovations in the compression system, piston movement and feeding operations

to guarantee high baling power, high quality of product and ease of use.



Mechanisms at the forefront of technology, appreciated for the combination POWER/ LOW ENERGY CONSUMPTION.

**• The revolutionary Archimedes Leverage System for high performances even with medium power tractors.**



**• A new semicircular motion of the piston.**

**• A new compression chamber without the traditional slides for the advancement of the piston.**

**• An extra long feeding channel from the top to enhance the cleaning and uniformity of the product.**

**• An excellent single knotting binding system with the advantages of the double knotting system.**

**• A high quality and reliable structure in every functional element.**

## SIMPLE FUNCTIONALITY, LOW COSTS FOR BALE

**Two fundamental requirements of the HD series which are defined by designing the whole mechanical architecture of the baling process with the maximum technical accuracy.**

This strategy is based on new mechanical systems that assures great simplicity of operation, radical knocking down of frictions and great compression power. Flywheel, Gearbox, Archimedes Leverage

System and Rotors of the HD series redefine the mechanics of baling, with low maintenance and the lowest energetic impact of production.

**A new technical concept, that allows concretely to slash costs for the single bale, thanks to the possibility to work with medium power tractors and the lowest overhead expenses.**



**ARCHITECTURAL MECHANICS  
REDESIGNED TO SLASH BALING COSTS**

## A NO COMPROMISE STRUCTURE

As a logical result of our focus on square balers and after many years of international experience, our engineers developed an ideal solid frame **for the powerful Big Balers HD series, able to sustain a force of 18 tons in the compression chamber.**

An ambitious project implemented with the conception of an extremely solid structure largely built with **high thickness special**

**steels:**

- **Weldox 700 steel**, of high strength characteristics, ideal for sustaining the intense stress of the piston compression;
- **Hardox 400 steel**, characterized by an excellent mechanical resistance to any impact and wear, the best for the compression chamber.



**SPECIAL STEELS FOR AN  
EXTREMELY SOLID STRUCTURE**

## THE AWARD WINNING BALING TECHNOLOGY

### 1. YOUR USUAL TRACTOR, OUR ARCHIMEDES LEVERAGE SYSTEM

Today the HD series is equipped with a revolutionary technology which allows to get a high compression power with the lowest demand of energy.

An important technical goal, which allows to bale even with medium power tractors, thanks to the physical principles of the Archimedes Leverage System®. An innovative piston mechanism based on a

balance levers system, capable of transmitting an extraordinary thrust of **18 tons** into the compression chamber with just **80 hp** at the PTO of the tractor.

A new compression system award-winning for its low demand of energy combined with high performances, completely innovative with respect to the other large square balers available in the market today.



**LOW DEMAND OF ENERGY  
LOW COSTS PER BALE**

### 2. THE EXCLUSIVE PISTON MOVEMENT

Thanks to the Archimedes Leverage System, in the HD series the traditional rectilinear movement of the piston is replaced by a semicircular movement even smoother and powerful.

An exclusive technology which has radically changed the working position of the piston, now lower, fastened to a fulcrum, in order

to use all the extraordinary thrust of the Archimedes Leverage System to which it is anchored.

An ideal position which has done away with rolls and bearings on the piston, causing substantially less friction and reducing maintenance operations by comparison with the traditional longitudinal movement.



**HIGH POWER, NO TUNINGS,  
NO MAINTENANCE**

### 3. THE ORIGINAL FEEDING FROM THE TOP THE QUALITY OF CLEANNESS

**The unique feeding from the top system in the market**, constituted by two synchronized rotors which transfer the product in an extra-long channel of 3,3 m length. **A special path which allows dust and even small stones to drop along the channel, ensuring an undamaged and clearer product.**

An innovative process which optimises

the making of compact and clearer layers, without modifying their natural nutritional value, obtaining **a high quality product ideal for cattle feeding or any other use.**

This is the only mechanism in the market able to ensure that for every piston stroke a uniform and substantial layer of product is positioned in the chamber, **with no lost piston strokes.**



**EXCELLENT CLEANNESS  
HEALTHIER PRODUCT**

### NEW COMPRESSION CHAMBER WITHOUT GUIDES

Re-engineered according to the revolutionary semicircular high pressure piston movement, **it is built with special steels Weldox and Hardox without the traditional slides for the advancement of the**

**piston into the compression chamber.** A structural feature which demonstrates its **extraordinary solidity even after years of harsh use and a reduction of energy consumption required to bale.**



**THE HIGHEST SOLIDITY  
THE BEST EFFICIENCY**

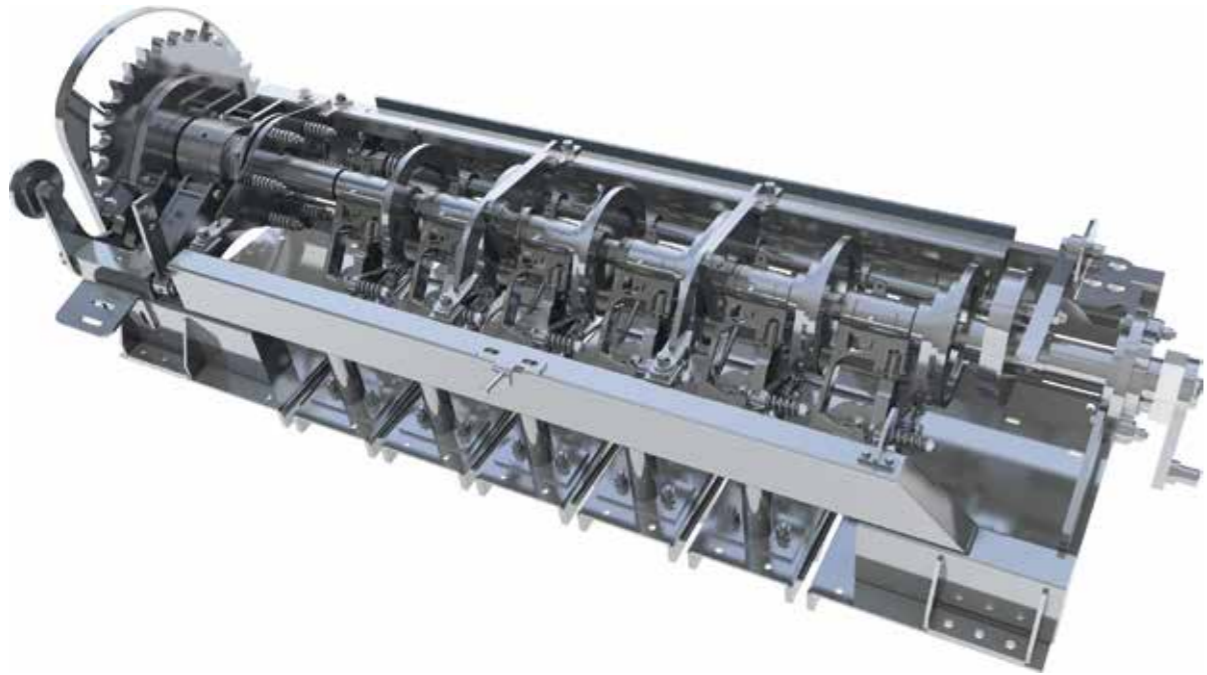
## THE EXCELLENT CONTROLLED BINDING SYSTEM

BALING AT ANY HOUR OF THE DAY WITH EVERY KIND OF PRODUCT.

Excellent knots under any condition, even with temperatures of the environment above 40°C, humidity of the product less than 3% and maximum density allowed by the twine resistance.

This operative advantage is determined by two exclusive functional features:

1. *The piston still compresses the product while the knot is being made. In this way the stress and the wear of the knotters are limited and it is possible to work even under difficult environmental conditions.*
2. *Special bring-wire able to control the tension of the twines and the stress on the knotters.*



**ALL THE ADVANTAGES BOTH OF THE DOUBLE KNOT BINDING AND OF THE SINGLE KNOT BINDING.**

## BIG DIAMETER PICK-UP

SAFETY AND MAXIMUM WORKING FLOW.

A wide pick-up for any kind of windrow, engineered to obtain the maximum safety and a high harvest volume under any condition.

Equipped with support wheels, hydraulic lift, adjustable directly from the driver's seat to act rapidly to changing field conditions.

The counter rotating movement of the augers facilitates a quick and efficient flow of the material into the feeding channel.

**The belt transmission slips in case of danger and protects from injuries or unexpected external objects from entering the chamber.**



**HARVESTING EFFICIENCY  
HIGH WORKING SAFETY**

## CLEANING SYSTEM AND OPERATIVE CONTROL

### 1 - CLEANING OF THE KNOTTER SYSTEM

MAXIMUM EFFICIENCY UNDER ANY CONDITION.



Our Big Balers are equipped with high performance fans and powerful nozzles blowing at adjustable intervals (optional) in order to **ensure a stable cleaning of the knotter area under any condition.** High effective cleaning system assures to operate in total security avoiding control stoppages and additional cleaning operations.

### 2 - INDEPENDENT PRESSURE CONTROL

EASY ADJUSTMENT AND OPERATIVE PRECISION.



The pressure required in every moment can be easily adjusted from the tractor in accordance with the kind of product or the commercial purposes of the user. The setting is activated directly from the tractor cabin by means of the hydraulic cylinder and the lateral and upper mobile press arms. **A reliable control of the pressure to assure a product with the most suitable density under any condition of the day.**

### 3 - CONTROL MONITOR

ALL THE OPERATIONS UNDER CONTROL.



A new generation monitor for all models Big Balers HD series provides to the customer the control of the most important functions:

- Visualization and regulation of work pressure,
- Calculation of daily/seasonal/total bales produced,
- Rear visualization of the bales formation and release,
- Correct binding rear visualization,
- Internal diagnosis through alarm codes,
- Export data through USB port.

All the machine functions can easily switch to manual in case of difficulties with the electronic devices.



## CUSTOMER SERVICE

Our after sales services have been updated through the latest experiences acquired in the various countries worldwide to make their implementation today even more complete and dynamic.

The service concept has further improved

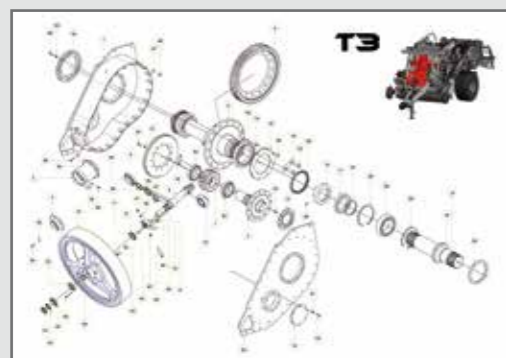
the speed of technical assistance in the field, it includes the provision of maintenance services, the supply of original spare parts in every country, and it enables the participation at operation and safety trainings, maximizing the profitable usage of the machine according to International safety standards.



### RAPID ASSISTANCE

Every machine is supported by experienced technicians, able to offer a high-quality support and training throughout the year.

Rapid service assistance can be provided during the harvest period itself, avoiding excessive operational delays.



### QUICK SPARE PARTS ONLINE

A spare parts warehouse with a dedicated high professional service, always available for the fast supply of original spare parts, throughout the World, even with access to the new online system:

[www.cicoria.it/parts](http://www.cicoria.it/parts)

operating **24/24 h, 7 days a week** to help the clear information of required spare parts and easy fill out the order form.



### PRATICAL TRAINING

A tested path well thought for our customer and dealer technicians to acquire the best practice of use, maintenance and safety management of machines. A well-structured program provides in-depth analysis and practical exercises.

## TECHNICAL SPECIFICATIONS BIG BALERS HD

|  | HD870     | HD870T    | HD1270    | HD1270 T  |
|--|-----------|-----------|-----------|-----------|
| <b>OUT PUT BALES</b>                     |           |           |           |           |
| Width x Height (cm)                      | 80 x 70   | 80 x 70   | 120 x 70  | 120 x 70  |
| Adjustable Length (cm)                   | 80 - 240  | 80 - 240  | 80 - 240  | 80 - 240  |
| Density                                  |           |           |           |           |
| - Straw (kg/m <sup>3</sup> )             | 180       | 180       | 180       | 180       |
| - Hay (kg/m <sup>3</sup> )               | 260       | 260       | 260       | 260       |
| <b>CONTROLLED BINDING SYSTEM</b>         |           |           |           |           |
| Knotters                                 | 4         | 4         | 6         | 6         |
| Type of Polypropylene (m/kg)             | 140       | 140       | 140       | 140       |
| Fan                                      | 2         | 2         | 3         | 3         |
| Twine roll stored                        | 18        | 18        | 24        | 24        |
| <b>PICK-UP</b>                           |           |           |           |           |
| Working Width (cm)                       | 185       | 185       | 220       | 220       |
| Lifting                                  | Hydraulic | Hydraulic | Hydraulic | Hydraulic |
| Gouge wheels 16 x 6,50 - 8               | 2         | 2         | 2         | 2         |
| <b>LEVERAGED PISTON</b>                  |           |           |           |           |
| Piston strokes/minute                    | 48        | 48        | 48        | 48        |
| Upper stroke length (cm)                 | 76        | 76        | 76        | 76        |
| Lower stroke length (cm)                 | 36        | 36        | 36        | 36        |
| <b>TOP FEEDING SYSTEM</b>                |           |           |           |           |
| Rotary feeder: bars x tines              | 4 x 8     | 4 x 8     | 4 x 12    | 4 x 12    |
| Rotary packer: bars x tines              | 3 x 4     | 3 x 4     | 3 x 6     | 3 x 6     |
| Feeding channel volume (m <sup>3</sup> ) | 0,63      | 0,63      | 0,92      | 0,92      |
| Feeding channel length (m)               | 330       | 330       | 330       | 330       |
| <b>BALER DIMENSIONS</b>                  |           |           |           |           |
| Length - chute closed (cm)               | 645       | 645       | 645       | 700       |
| Width with 16/70-24 14 PR tyres (cm)     | 215       | 220       | 255       | 255       |
| Width with 550/60-22,5 12 PR tyres (cm)  | -         | -         | 290       | -         |
| Width with 500/50-17 14 PR (cm)          | -         | -         | -         | 280       |
| Width with 19.0/45-17 14 PR (cm)         | -         | -         | -         | 282       |
| Height (cm)                              | 260       | 265       | 264       | 269       |
| Weight (kg)                              | 5900      | 6600      | 6640      | 7210      |
| <b>TRACTOR REQUIREMENTS</b>              |           |           |           |           |
| Minimum Power at PTO (KW/HP)             | 50/65     | 50/65     | 60/80     | 60/80     |
| PTO speed (rpm)                          | 1000      | 1000      | 1000      | 1000      |





# CICORIA

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