





Total quality

Engineering, Design and Manufacturing is our Trademark

Industrias Hidráulicas, s.a. designs and manufactures a wide range of balers, shears and rotary shears for processing scrap and other waste. Efficient, heavy duty and reliable machines for high productivity and minimum maintenance.

Higgins Balers Ltd and **Industrias Hidráulicas**, **s.a.** have been working together for many years. With the expertise of both companies you have the complete package for machine, installation and ongoing support.



OUR COMPANY

Industrias Hidráulicas S.A. "MOROS" Industrias Hidráulicas S.A. "MOROS" has been designing and manufacturing machinery for more than 56 years. Our range includes high quality balers, shear-balers and rotary shears for working with ferrous and non-ferrous materials, in the following categories:

- Stationary balers: one, two or three compression balers, as well as high production and high density balers;
- Shear-balers with pre-compression wings, lateral compression shears, and lateral compression shears with adjustable angle system;
- Mobile and portable balers and shears; and
- Other machines such as paper balers, rotary shears and alligator shears.

Our machinery for recycling can be adapted to any customers need.



Your UK agent is Higgins Balers Ltd: www.higginsbalers.com or email: info@higginsbalers.com





Agents worldwide: Argentina • The Benelux Countries • Bolivia • Brazil • Bulgaria • Chile • China • Ecuador • France • Germany • Greece • Italy • India • Kazakhstan • Kyrgyzstan • Mexico • Mongolia • Paraguay • Rumania • Russia • Saudi Arabia • South Africa • Tajikistan • Turkmenistan • Turkey • Ukraine • UK & Ireland • United Arab Emirates • USA & Canada • Uzbekistan

DESIGN

Each of our models has been designed after reviewing case studies and carrying out extensive calculations, prior to modelling the information in CAD technology and applying the latest simulation techniques. The whole process is complemented by our vast experience in the design, manufacture and maintenance of machinery.

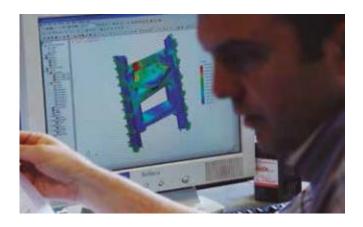


EVOLUTION AND FLEXIBILITY

Our machinery constantly evolves. Through innovation, our constant review process, and our years of dedication to the scrap recycling market, allow MOROS to satisfy all our customer's needs.

With the design and manufacturing processes carried out 'in house' we have the capabilities and capacities to adapt our machinery to meet specific client requirements.



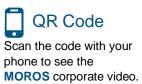




QUALITY

All our manufacturing methods follow our strict quality control standards, which are updated regularly, ensuring the quality of production you would expect from a successful, global manufacturer.





AFTER SALES

MOROS customer service is well known worldwide and supported by Higgins Balers in the UK and Ireland. We now support customers and machines with new emonitoring devices, reducing unscheduled stops. Moreover, we ensure spare parts are available throughout the life of the machine, as we manufacture almost all of the components ourselves; those we don't, we generally carry in stock, so they are ready for delivery.

In addition we keep a record of all the machines we have manufactured in the last 56 years making spares tracking easier.



Performance, Reliability

and Productivity

SCRAP SHEAR H-P

The system of lateral compression plates with angle adjustable is extremely effective at pre-compressing heavy and/or bulky scrap that no other shear on the market can process.

These gains during compression result in an increase of production rates. The latest trends in hydraulics and electronics allow the efficient use of power resources, making the H-P range in a very profitable and economic machine to run, per tonne of scrap produced.



Reinforced structure

After years of production, the H-P is now well established in the market, thanks to its numerous technical advantages, as set out on these pages. It is the best example of structural construction that characterises MOROS.

It includes interchangeable, high strength steel wear plates, in all areas that are in contact with the scrap.



Loading boxes of up to 10 metres long (the material chamber is 11.5 metres long).

TECHNICAL FEATURES

CUTTING FORCES (tonnes)	900; 1100; 1400; 1750
LOADING BOXES (metres)	6; 8 or 10

BLADE WIDTHS (mm) 800; 1000 or 1500

ENGINE POWER From 2 to 8, 125hp units

AVAILABLE OPTIONS

Pre-compression lid length increased including loading hopper, conveyor belt, antivibratory systems...we at MOROS can satisfy all your requirements

Technical innovations

The exclusive MOROS system stops scrap jamming at the side of the material chamber box. When our innovative angle adjustable block (see below) is turned, it avoids the scrap jamming in the pre-compression process. This reduces costly unscheduled stops.

This model also includes state of the art oil filtering technologies, cylinder positioning control, double hydraulic circuits and system control monitoring.



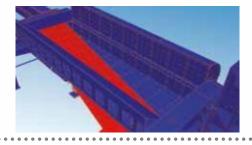


The guillotine is made from a single piece of cast steel providing ultimate strength. is also enclosed additional providing support. This also allows a tray to be placed in the scrap exit.

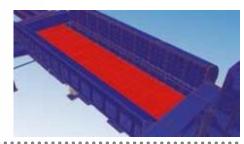
It has extended V-shaped prismatic guide ways, which are adjustable and are automatically greased during movement reduce wear and increasing cutting accuracy.



Work in parallel or angular mode. With the powerful side compression block in position the parallel and compression lid half closed, the scrap is compressed as far as possible. By selecting the angle adjustable mode the full compression force is exerted at one end of the piece of scrap.



By reversing the angle of the block, the material is subjected to great forces, ensuring the whole is fully compressed. This will practically eliminate any resistance of the material on extrusion.



With the lid then closed, the scrap is then compressed downward beyond the final closed position of the lid. The compression block is fully extended and the lid is finally closed. The log is now ready to be fed to the shear head without any fear of jams or blockages.



Maximum Efficiency and Versatility

SCRAP SHEAR H-B

MOROS H-B range is the latest development in the MOROS lateral pre-compression shear family. This range is renowned as a reliable and productive machine and many units have been manufactured and supplied worldwide.

MOROS H-B range includes many new advantages in design, hydraulics and electronics making it a very efficient, effective machine, with low maintenance costs.





Productivity

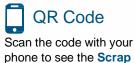
This series is a high speed range due to its innovative hydraulics. These include simultaneous movements in all the cylinders, because there are continuous position detectors inside the cylinders.

It uses a compact hydraulic unit with low noise, submerged pumps.



H-B

From 2 to 6, 125hp units



Shear H-B video.

TECHNICAL FEATURES

 CUTTING FORCES (tonnes)
 700; 900; 1100; 1400

 LOADING BOXES (metres)
 6; 8 or 10

BLADE WIDTHS (mm) 600; 800; 1000

ENGINE POWER

Easy Maintenance

All the cylinders can be dismantled at each end for easy maintenance.

Wear Liners

Every part of the machine, in contact with the scrap, includes interchangeable wear plates. As expected from MOROS, every part is machined to ensure a perfect fit

Guillotine

The closed guillotine structure increases the head strength and permits a tray in the scrap outlet. The greased guides reduce wear.



Quick Change

It includes a hydraulic system to tighten the blades and conveniently enables rapid blade replacement.



Optimised Design

A number of features have been incorporated into the design to ensure safety and efficiency, whilst maintaining productivity, such as reducing the overall height to ease loading and the automatic greasing in the head and hinges, as well as in the pre-compression box.

Models with a large loading and pre-compression box included as standard, feature a torsional cylinder to reduce the wear of the lateral block wear plates.

Different options:

This range can be added to with items such as: a container to protect the hydraulic and electric units; extension of the pre-compression lid including loading hopper; a conveyor belt in the scrap outlet; anti-vibratory systems, comprehensive enclosure.... to satisfy any customer requirement.



Versatile and Multi-Purpose Machinery

SCRAP SHEAR H-A

The H-A range is the latest development in the MOROS stationary wing shear range, well known for its reinforced structure and its capability of working with almost every material.

The H-A range incorporates new advantages in mechanical design, hydraulics and electronics to achieve high cutting speeds and efficiency levels never seen before in this kind of machinery.





Exclusive MOROS Design

The pre-compression box can be closed rapidly if you are working with light scrap, thanks to the combination shape in the wing, allowing the wing to move beyond the lid level and compress the scrap further. With its curved and flat portions on the wings, this machine can also work with heavy scrap as the two wings fit neatly together. Furthermore, the over compression mode allows scrap to be compressed in the pre-compression box.

This range can be fitted with a bigger loading box to work with car bodies and bulky scrap.

Efficient and Fast Hydraulics

Simultaneous movements in all the cylinders and the new technology hydraulics allow huge savings in energy. This also reduces the number of electric motors.





Easy Maintenance

Split hinge shaft for easy maintenance and fast dismantling

TECHNICAL FEATURES

CUTTING FORCES (tonnes)	550; 700; 900; 1100
LOADING BOXES (metres)	5.6 or 7

BLADE WIDTHS (mm) 800 to 1000

ENGINE POWER

1, 150hp unit; 2, 3 or 4 125hp unit

H-A



Automatic Greasing in the Head.

H-shaped guillotine keeps overall height low to enable loading with medium cranes from both sides and for transportation without dismantling the head.

Ram guided in a slot or groove





Scan the code with your phone to see the **Scrap Shear H-A** video.





Scan the code with your phone to see the **Front H-A** video.

Different options:

As with many of our ranges, this one can be customised with a range of features, such as: a container to protect the hydraulic and electric units; a loading hopper, a conveyor belt, anti-vibratory system, flat foundation, cold weather construction, cabin.... to satisfy any customer's need.





Shears

Scrap Shears H-M, H-V, H-C, and H-G

Machinery for specific purposes that have become a standard in the MOROS range. The H-M and H-V range have been designed to process long scrap such as bars and pipes, etc. Other ranges are more suited to lighter scrap or are transportable.



H-M shears include a fixed loading box, without wings, to allow the loading of very long objects. A ram pushes the material to the head, which is constructed similarly to other MOROS stationary shears. Optionally, it can incorporate a hydraulic bumper to increase the regulation of the cutting length.

The loading box can be manufactured in different lengths.

Shear and Baler MOROS H-C

The H-C has asymmetrical wings, designed to work with light scrap and non-ferrous metals. Thanks to its wing shape it closes rapidly, allowing it to be used either as a shear or as a baler that produces a bale size of 400 x 400 mm.

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TECHNICAL FEATURES	H-M	H-C	H-V	H-G
CUTTING FORCES (tonnes)	400 – 1100	280 – 550	400; 640; 900	400
LOADING BOXES (metres)	6-8-10	3-4-6	6-7	2-4
BLADE WIDTHS (mm)	NDE WIDTHS (mm) 800 – 1000		800-1000	1200
ENGINE POWER	From 1-4 units of 125hp	From 1-2 units of 125hp	1 to 3 units 125hp	Diesel 136hp



MOROS Inclined Shear H-V

The H-V has been designed to work on material that does not need much compression. It is a continuous feeding and cutting machine, with the option of the diesel engine and the hydraulic outriggers, making it fully transportable.

It incorporates a mechanical bumper which can be fitted as a hydraulic, if short cutting lengths are required.

MOROS H-G-700 "Piranha" Roll-on-Roll-Off

This horizontal cutting shear with continuous feeding and cutting is ideal as a scrap shear for small yards and preparation of bulky scrap, because of its economical processing. Thanks to its diesel engine and the roll on –roll off system, it has the added benefit of being easily transported.







Alligator Shears

Our alligator shear range has been manufactured with the standards of quality that we at MOROS use on the bigger shears.

The gap between blades can be easily regulated for more accurate cutting and optionally they can incorporate automatic functioning.

SHEARS TO CUT NON-FERROUS MATERIAL



H-M-10/H-M-11 Fast shears (15-22 cuts/minute). Optional automatic function available.



H-H-11 "Nutcracker"Special shear to clean non-ferrous materials.

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TECHNICAL FEATURES	H-M-10	H-M-11	H-K-15	H-H-11
CUTTING FORCES (tonnes)	65	45	65	33
LOADING BOXES (metres)	325	325	600	-
ELECTRIC POWERS (kW)	10	10	15	10
MILD STEEL CUTTING CAPACTIES (round/squares)	15 – 16	21 – 22	20 – 30	-





H-K-15

The H-K-15 is very fast and designed to work with non-ferrous, for example, radiators. An inclined version is also manufactured to ease the loading of bars, which incorporates a tilting hopper and an adjustable bump stop.

FERROUS METAL SHEARS



H-K-10 Shear to cut steel.

H-J-15	H-F-30
120	220
600	750
15	30
25-40	10-30



H-J-15

This model is very versatile as it can work with ferrous and non-ferrous materials thanks to its 2 speed settings: a low speed to work with steel and a faster one to work with other metals. It includes a hydraulic hold down and a single piece cast head to reduce volume before cutting. It is optionally available with crusher H-model F-30.



H-F-30

The H-F-30 especially designed to work with steel. It has a reinforced structure provided by automatic hydraulic hold down and its single cast steel head. It includes a crushing anvil at the front (optional in the H-J-15 model) to reduce the volume of the material



One of a kind

GC-S Range

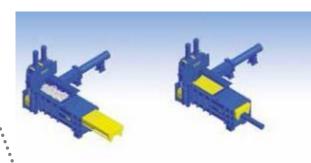
The GC-S range has no competition in the international market. These machines were designed to achieve production rates and able densities that no other machine can do.

Their technical advantages make these machines almost impossible to jam, and they can bale continuously any material and shape. These features, combined with their heavily reinforced structure and reliability make it the ideal machine for a recycling yard with a wide range scrap processing requirements.



Wear Liners

Steel interchangeable wear plates in all the surfaces in contact with the scrap. The trapezoidal castellated wear plates are thicker than usual and along with a close fitting ram, reduce maintenance and increase durability.



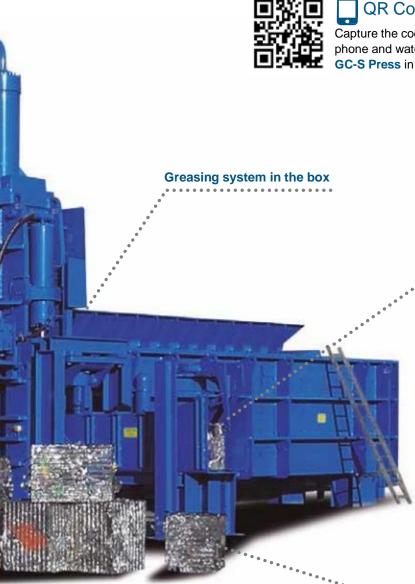
Operating Sequence

TECHNICAL EEATI IDES

TECHNICAL FEATURES	GC-S		
COMPRESSION FORCE(tonnes)	210; 350; 500; 800		

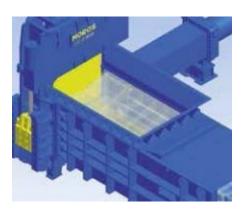
LOADING BOXES (mm) 300x300; 400x400; 400x600; 600x600

ENGINE POWER 1 to 75hp; 2, 3 or 4 to 125hp





Capture the code with your phone and watch a video of GC-S Press in action.



Anti-jamming System

The cutting is done vertically with the second compression and instead of a fixed bridge of blades there is a Vshaped guillotine system. This design virtually eliminates unscheduled stoppages due to jamming.

Due to the absence of the fixed bridge of blades, the loading area is bigger since it can use the last compression box. In addition, the cutting force is much higher (90% end compression), because it is done with the second compression instead of the first one (which only has 50% of the last compression force), providing nearly twice as much cutting force.



Bale density

Bale density can be up to 3.5 or 4 tonnes/m3 with steel cans.

Innovative design that includes a spacer ram which allows all the cylinders move at the same time, giving very short cycle times (from 33 to 60 seconds) and high yields (up to 60 tonnes/hour) with minimum energy consumption. In addition, the box can be loaded during the pressing cycle.

This machine incorporates the latest innovations in electronics and fluid micro filtering, reducing maintenance stops.





Profitability in High Density

GC-V Press

The GC-V range was created to meet the market need for a high density range with lower production ranges than the GC-S. The GC-V also incorporates all the advantages of vertical cutting with the second compression.

Like the GC-S range, these machines incorporate an anti-jamming system, large loading boxes and high cutting force for excess material.



An unjammable System

The cutting is done vertically with the second compression and instead of a fixed bridge of blades there is a V-shaped guillotine. This design virtually eliminates unscheduled downtime.

Due to the absence of the fixed bridge of blades, the loading area is bigger since it can use the last compression box. In addition, the cutting force is much higher (90% of the final compression force) because is done with the second compression instead of the first one (50% of the last compression force). The system also allows for recharging whilst performing the press cycle.



TECHNICAL FEATURES

TECHNICAL FEATURES	GC-V		
COMPRESSION FORCE(tonnes)	210; 280; 310; 550		
LOADING BOXES (mm)	300x300; 400x400; 400x600; 600x600		
ENGINE POWER	2 to 75hp; 2 to 100hp; 2 to 3 to 125hp		



High density bales and high production rates

This range incorporates the latest innovations in electronics and fluid filtering, reducing maintenance stops. The latest trends in hydraulics allow very short baling cycles with minimum energy consumption.

Submerged pumps reduce noise emissions. A truly environmentally friendly machine.





In all areas in contact with waste, high stregnth steel, castellated changeable liners are used.



Capture the code with your phone and watch a video of **GC-V Press** video.





Endurance and Flexibility

GC-F and GC-J Presses

These machines have been designed and manufactured with the most advanced technologies to withstand the demands of modern scrap processing and can work with all grades of both ferrous and non-ferrous scrap. MOROS has been manufacturing these models for over 40 years and many are still in operation proving their reliability. Its reinforced structure makes for a long useful life with low maintenance.

As with all MOROS machinery this model is manufactured to highest standards. All parts of the interior in contact with the scrap, is protected castellated, or grooved, interchangeable liner plates. plates wear manufactured by 'Numerical Control' so MOROS can provide them with the exact position of the holes for fast and easy replacement.





TECHNICAL FEATURES

GC-F and GC-J

COMPRESSION FORCE(tonnes)

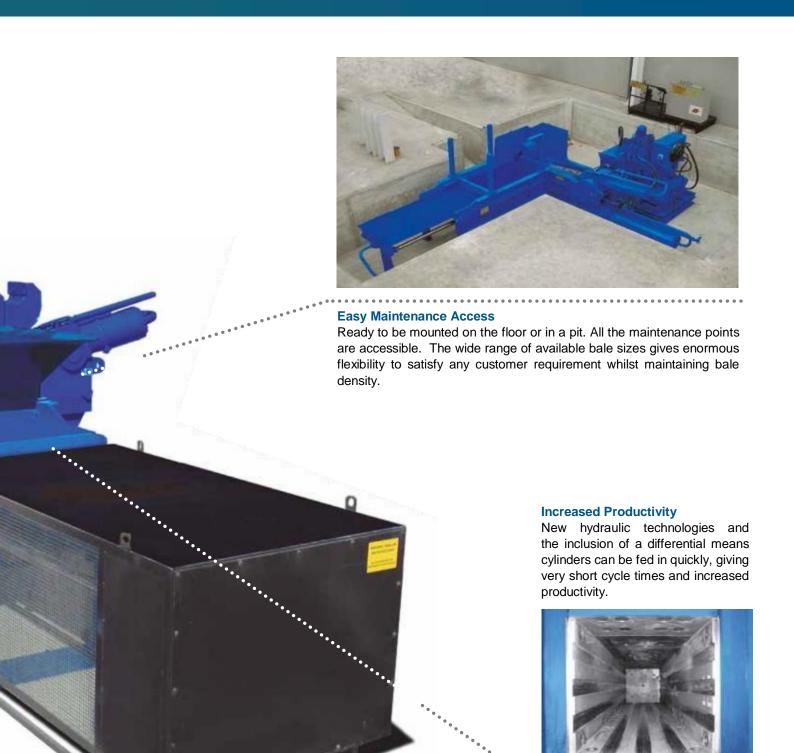
150

LOADING BOXES (mm)

300x300; 400x300; 500x200; 400x400

ENGINE POWER (hp)

60; 75; 125



Furthermore, the pre-compression box can be loaded while the bale is being made so the machine can work continuously in automatic mode, cutting loading time to a minimum.





Special Application Presses

Moros GC-L Wing Baler with Opposite Cylinders

The GC-L baler is a stationary and electric model that incorporates two opposite final compression cylinders

GC-L-D

This model includes opposite wings (with 3 strong cylinders each one) and a loading box length of 6000 mm. that has been developed to work with cars and vans.







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TECHNICAL FEATURES	GC-L-B	GC-L-D	GC-G	GC-K
FINAL COMPRESSING FORCE (tonnes)	125 each	165 each	220	110; 165; 220
BALE SIZES (mm)	-	100x600	500x400	400x400; 500x600
ELECTRIC POWER (hp)	150	150	100	60; 100; 150

MOROS GC-G-200 TRIPLE-ACTING SHEAR-BALER PRESS

The GC-G-200 is a three compression baler designed to cut and bale tubes and long objects by including an inclined hopper with a hold down. The first compression lid can be closed once or make several cuts on the material before baling it.



MOROS GC-K BALER RANGE

This two-compression baler incorporates a large hopper for loading, cutting and pressing bulky scrap or even car bodies, making it a very versatile machine.





GB and **GC** Range of Presses

Like the larger machines in the range, MOROS has designed and manufactured these models to include our wear plates which are easily interchangeable and optionally castellated, ensuring that thinner materials don't get 'dragged back' with the ram. They can make different bale lengths.

There are many versions for working with ferrous or non-ferrous materials and with manual or automatic functioning.

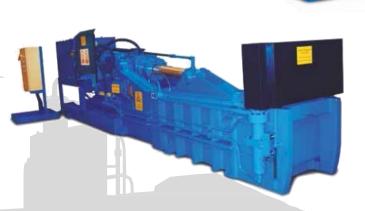
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GB-C-15 model

Manual operation by lever, with a castellated wear plate in the floor of the pre-compression box. The width of the pre-compression box eases the loading of the material and the transport of bales.

GB-C-15-S model

Automatic version of the GB-C-15, with a longer loading box and higher compression forces.



GB-C-25 model

More powerful version ideal for working with ferrous materials due to its reinforced structure and the greater compression of the cylinders.

	TECHNICAL FEATURES	GB-C-15	GB-15-S	GB-C-25	GC-E-25	GC-E-30	GC-T-30
ი _	COMPRESSING FORCE (tonnes)	60	80	100	100	125	30
וטעטו	BALE SIZE (mm)	500x200	500x200	500x200	400x400; 500x400; 600x500	600x400	300x300
FEA	ENGINE POWER (hp)	15	15	25	25	30	15
	LOADING BOX (mm)	1000x500 x450	100x500 x450	1500x500 x500	1200x400x600; 1200x500 x600; 1500x600x700	1500x600 x 600	1300x300x 300



GC-E-25 model

Designed to work with ferrous materials as it incorporates large cylinder forces. It produces bigger bale to improve the production rates with these materials.

GC-E-30 model

A machine specifically designed to work with ferrous materials, as it produces large bales. It has a reinforced structure and powerful cylinders with high cutting forces.



GC-T-30

One compression baler with a loading hopper. Designed to bale cans or other light materials in a continuous feed.

GC-W-160

145

200x200x

var

50

1000x200x 1000





Portability and Toughness

H-A-B SCRAP SHEAR

MOROS has developed a machine with the structural design and features of the fixed range H-A, but the portability you need. This portable H-A-B model inherits all the state of the art hydraulics and electronics that have made the stationary H-A range a benchmark in the market for its reliability and efficiency.



ECHNICAL

high efficiency and high production rates

TECHNICAL FEATURES	H-A-B	H-S Mobile	
CUTTING FORCE (tonnes)	550; 630; 900	550; 630	
BLADE LENGTH (mm)	5; 5.5; 6	5; 5.5; 6	
ENGINE POWER (hp)	300; 400; 530	300; 400; 530	





Scan the code with your phone and see the **Mobile Scrap Shear** video.

H-S SCRAP SHEAR

The main feature of the MOROS mobile range is that the machine is self-supporting: the strength comes from the chassis structure. A trailer is not needed as this is integrated into the machine chassis. This makes the mobile MOROS shear a perfect machine for frequent travel.

Adjustable Guillotine
The guillotine can be adjusted for maximum accuracy on the blades and it includes an automatic greasing in the head.

HOROS

Fast and efficient hydraulics
State of the art hydraulic

State of the art hydraulic technology allows for greater efficiency and productivity







The exclusive MOROS design of the wings

This innovative design lets you close the machine fast when working with light scrap. With its curved and flat portions on the wings, this machine can also work with heavy scrap as the two wings fit neatly together. Furthermore, the over compression mode allows scrap to be compressed in the pre-compression box.





Fully Autonomous

GC-L MOBILE SCRAP LOGGER BALERS

MOROS GC-L mobile balers have been designed with two opposite compression cylinders.

It includes a trailer, diesel engine and a crane so it is a fully mobile and autonomous machine.

Built in Crane

The crane has a soft stop function for smooth operation and allows simultaneous movements reduce loading and unloading times.



Cars

collection system as standard for processing cars and it can bale on average 35 cars an hour (that's a car every 90 seconds).

Options

It can be modified to meet any international transport laws. Other brands than the Volvo 300hp engine are available.

ECHNICAL

TECHNICAL FEATURES	GC-L	GC-M	
BALING FORCES (tonnes)	110 to 165	165	
LOADING BOXES (m)	5; 5.5; 6	4.2; 5	
ENGINE POWER (hp)	300	175	
BALE SIZES (mm)	1000x600	600x500	

MOBILE PRESS GC-M

It combines the experience and manufacturing quality of MOROS with efficiency and versatility.



Compression System
Asymmetric tops opposite are designed to reduce cycle times with light scrap.





Shredding a Range of Materials

Your material + our machines = Perfection!

With our shredders and balers for almost any recycling material, we have the range of machinery to work with all recycling needs. Single shaft and twin shaft shredders up to 270hp will be a bonus to your recycling processes.

MT-B Shredder

Paper shredder with adjustable knives, so that different grades of paper can be shredded, from newspapers to books and magazines. This versatile machine can also be used to reduce the size of packaging materials for increased production during baling.



MT-P-2000

Heavy duty pre-shredder for materials considered 'noncrushing' by other machines, such as heavy steel parts and pre-baled materials.

FECHNICAL FFATILIRES

TECHNICAL FEATURES	MT-B	MT-P-2000	MT-V-1000	MT-Z
PRODUCTION RATE (Ton/h)	8-10		2 to 7	2-200
INFEED OPENING (mm)	1100x900		500x800	
ENGINE POWER (hp)	30; 40; 60	215	215 - 270	20; 40; 60; 150



MT-V-1000

Vertical shredder for light ferrous scrap, WEEE, non-ferrous metals, ASR/SLF shredder residue and electric motors.

MT-Z Shredder

The MT-Z is a ruggedly-designed, simple, electromechanical 2 shaft shredder. Its low differential shaft speeds and counter-revolving shredding action are the secret to its success. This machine literally pulls apart, tears and shears materials. "Axial play control" reduces friction on either side of the turning knives. It can be adapted to almost every type of loading and discharge system.





Reel Splitters

Range of reel splitters for paper and plastic cores, available for reels up to 2.5m long and 1.5m wide.







In Association with



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For all your recycling needs

