



# TAURUS

RED LINE



PROVEN

VERSATILITY

DOUBLE SHAFT ROTATING SHEARS

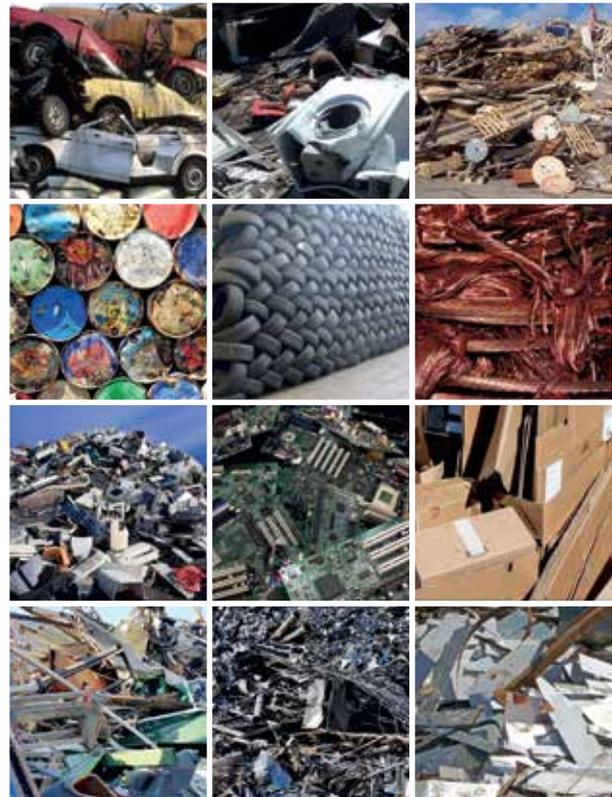
# WHY CHOOSE A ROTATING SHEAR **DELTA**

Rotating shears are an excellent solution for coarse grinding of light scrap, collection, appliances, etc. that require size reduction for disposal or recycling, especially when subject to subsequent operations of selection. The need to reduce the size of the material is therefore the key deciding factor that often determines the choice of these machines over other possible solutions, and the arguments become even more valid if subsequent downstream steps, such as separation through magnets, eddy current or sorting drums are to be considered.

## MATERIALS AND PRODUCTS

With their low speed and high torque counter-rotating blades DELTA shears are the perfect solution to coarse grind large quantities of:

- bulky waste
- industrial waste
- metal containers
- light scrap
- collection scrap
- heavy metal scrap (max. 3 mm)
- ELV cars
- pallets, wooden crates
- kitchen appliances and kitchen furniture
- packaging
- electrical cabinets
- telephones and coin-boxes
- archives
- tires
- copper cables
- WEEE
- etc.



## DELTA ROTATING SHEARS

		<b>D83</b>	<b>D94</b>	<b>D15</b>	<b>D16</b>	<b>DB18</b>
Feeding chamber						
length	mm	2200	2200	2200	2200	2200
width	mm	1600	1720	2000	2000	2000
Blades thickness	mm	200	200	200	200	200
Counter-rotating shafts rotation speed	g/1'	5	3	3	3	3-12
Machine weight		50	60	75	75	110
Shaft rotation control electric engines	kw	270	380	440	540	760
Output (scrap dependent)	t/h	≤ 20	≤ 30	≤ 40	≤ 50	≤ 80

# TAURUS DELTA ROTATING SHEARS: DESIGN FEATURES

The **TAURUS** Delta twin-shaft rotating shears are built to the highest technical and construction standards, guaranteeing class leading level of performance, operating efficiency and operational life. Provided in 4 versions, with different power levels, they can be used with a wide range of scrap of various thicknesses and sizes.

The shearing double shaft system has three essential parts:

## 1 LOADING HOPPER

The material to be processed is loaded in the loading hopper, placed over the shearing chamber and is gravity fed to the counter-rotating shredding shafts. This component is robustly built and is made with 30 mm wear resistant (Hardox) steel plate. ON REQUEST the hopper can be shaped to provide protection to the hydraulic motors.

## 2 SHEARING CHAMBER

The shearing chamber houses the twin counter-rotating shafts and consists of 6 components two sturdy sides (290 mm thick), lying parallel to the shafts, and of two head cases, comprised of two halves in a clam shell design. 3 different sizes are available ranging from 1700 x 2200 mm to up to 2000 mm x 2200. The side panels are equipped with a hydraulic system that allows easy opening of the clam shells. The quick access means that maintenance operations, part replacement and the removal of unshreddables can be done without fuss.

Comb-cleaners, used to free the shafts from material that may have coiled around the rotors come with the shear as standard equipment. All surfaces that come in direct contact with the material to be shredded are made of thick, anti-wear steel plate (Hardox 450 – 60 mm thick).

In case of an overload situation, the rotating shafts reverse their direction of rotation, freeing the blades from the material that caused them to stop, then automatically resuming the correct direction of rotation.



## 3 HYDRAULIC SYSTEM

The hydraulic control system controls the rotation of the hydraulic motors and is coupled to the shafts of the rotating shear. The hydraulic control unit is in a closed circuit and manages the direction and speed of rotation. "Load sensing" pumps using the latest generation LINDE axial pistons are equipped with a power regulation system. This allows the power factors such as rotational direction, rpm and torque to be modulated adapting them to the changing needs and different shredding conditions.

The closed circuit design makes it easy to control the rotation and counter-rotation of the shafts avoiding the phenomena of cavitation drag and also increases the service life of the individual machinery components.

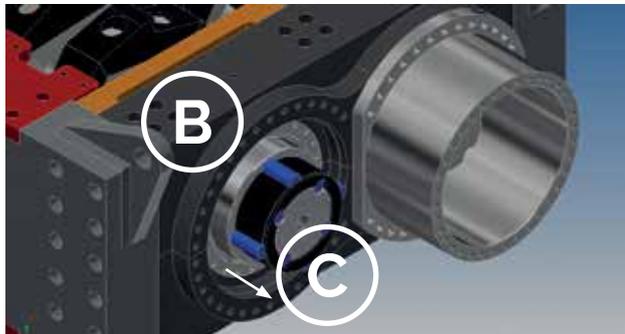
## 4 BLADE HOLDER SHAFTS

The shafts are made of forged alloy steel which has been machined to shape and heat treated.

**ROTOR 1** the shaft length is 2200 mm, with 6 insert-holder discs, the ROTOR 1 rotation speed varies from 6 to 3 rpm. The shaft is driven by HAGGLUNDS hydraulic motors coupled to the respective REGGIANA RIDUTTORI epicyclic reducer.

**ROTOR 2** the shaft length is 2200 mm, with 5 insert-holder discs, the rotor 2 rotation speed varies from 5 to 2.7 rpm. The shaft is driven by HAGGLUNDS hydraulic motors coupled to the shafts.

The coupling of the shaft with the reduction gear is through a special pin joint **(B)** that protects the shaft from overloads. The safety half-joint **(C)** protects the shaft from breaking..



## 5 BEARING SEATS

The shaft support bearings are self-aligning and use a double ring of rollers. They are housed in the head cases of the machine body, in specially honed seats designed to:

- ensure protection of bearings
- prevent substances (both solid and liquid) from reaching the bearings (protected by HARDOX 450 bulkheads, 60 mm thick)
- make bearing disassembly and assembly quick and easy
- enabling proper and constant lubrication. Lubrication is automatic.

## 6 SUPPORT FRAME

On request, a tilting support frame can be supplied, with a platform made on both sides of HARDOX 400, 20 mm thick, with the change of orientation activated by two hydraulic cylinders.

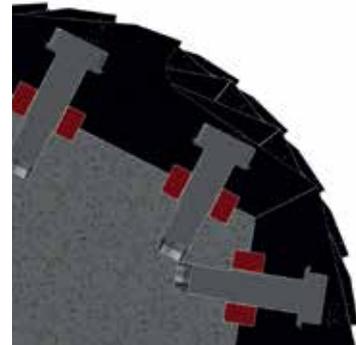
### THE ADVANTAGES OF THE TAURUS DELTA RANGE

- the best value for money in the market
- low cost of ownership and maintenance
- minimum energy consumption per unit of shredded product
- safety
- machine versatility
- setting and programming of the operating parameters from the touch-screen
- display on monitor of functions' performance data and processing data
- REMOTE ASSISTANCE

## CUTTING INSERTS

The cutting inserts (blades) are set to the supports with only two large screws (**D**), a solution which improves tightening, facilitates disassembly, and reduces replacement times compared to the multi-screw solution generally adopted. All blade screws are housed in a replaceable threaded seat (**F**) in anti-seizing material, to prevent the wear and tear of the nut and the screw thread over time.

The lateral play of the cutting inserts is prevented by two strong cylindrical keys (**E**).



## TAURUS DELTA ROTATING SHEARS: UNIQUE FEATURES!

- blade inserts fixed to the seat with a single front screw to facilitate disassembly and reduce replacement times, in turn the screws are fixed on interchangeable seats
- **original** design of bearing protection
- new shafts cleaning system
- the special components of the **DELTA** rotating shears are built and manufactured using the most advanced techniques and technologies to achieve precise coupling and easy interchangeability
- the walls and the cleaners that are in direct contact with the material to be cut and subject to wear are interchangeable and made with high-strength wear-resistant steel
- **easy programmability of the working parameters**

During their operation, **DELTA** rotating shears are controlled by a programmable electronic card system (plc) equipped with a special "operator panel" that, among other things, allows you to:

- view and monitor work functions
- display control functions
- program and change work parameters from the console
- check control
- analyze performance data

# TAURUS

## SINCE 1964 ALWAYS ONE STEP AHEAD

**TAURUS** is one of the oldest and most widely recognized brands in the metals recycling industry. With over 50 years of experience, **TAURUS** knows how to design and build machineries which deliver maximum performance without compromising on safety and environment-friendliness.

In addition, **TAURUS** machines are tested to work efficiently and effectively in any condition, climate or application, as proven by more than 800 machineries deployed and operative all over the world.



**BLULINE**



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