

ORANGE PEEL GRABS



UNDERWATER GRABS



CLAMSHELL GRABS



TONGS AND GRAPPLER



JAW CLOSING OPTIONS



OPENED STRUCTURE

Recommended for big size materials like :

- Rocks
- Baled scrap
- Big stones
- Trunks...



HALF-OPENED STRUCTURE

Recommended for medium size materials like :

- Urban solid waste
- Medium size and fragmented scrap
- Cast-iron...



CLOSED STRUCTURE

Recommended for low size materials like :

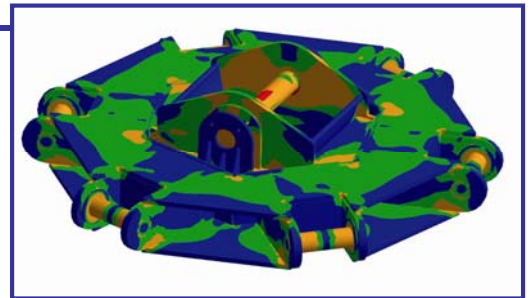
- Shaving
- Crushed tires
- Batteries
- Small ingots...

- Depending on the material to be handled there is a **recommended jaw closing degree**.
- The weight shown in the technical sheets is defined for half-opened structure.

DESIGN AND SIMULATION

• Our design office develops each design according to **F.E.M. 1001 Section I:1998, UNE-58132 and UNE-EN 13155** using the latest 3D and CAD/CAM tools.

• Each new design is validated and optimised using **Finite Elements Analysis technique** in the way to analyse fatigue effects and warranty **2.000.000 cycles** for components' and machines' working life.



ELECTRO-HYDRAULIC SYSTEM FUNCTIONING

MOTOR REVERSAL		ELECTRICALLY OPERATED VALVE	
Wire quantity:	4	Wire quantity:	7
Pump type:	Piston pump (fix flow)	Pump type:	Gear pump (fix flow)
			Piston pump (fix flow)
			Piston pump (variable flow)



VARIABLE FLOW HYDRAULIC UNITS

• Electrically operated valve hydraulic units that use **variable flow piston pumps** warranty hydraulic components' working life increase in **more than 300%** in comparison with fix flow pump's functioning.

• This system **avoids oils overheating (4 times minor than with fix flow pumps)** due to Load-Sensing control. This way pumps' plate is continuously adapting its inclination in the way to **optimise the penetration force and minimise power demand (40% minor than fix flow pumps)** and increase grab's overall efficiency.

MATERIALS

- Structure manufactured in **S355 J2G3** rolled steel (elastic yield 510-610 N/mm²).
- **Penetration teeth in anti-wear manganese steel** (360-440 HB).
- For grabs in contact with **abrasive materials** we normally recommend to manufacture jaw shells in **wear resistant steel** (hardness up to 475 HBW).
- For grabs in contact with **corrosive materials** we recommend using **stainless steel jaw shells**.



CERTIFICATION

- Possibility to certify any model in **ATEX 0/20, 1/21 or 2/22 zones for explosive atmospheres**

