



## 4 Shaft Shredders

### General Description

OPTIMA four shaft shredders are designed for shredding and recycling all kinds of waste. Optima four-shaft shredders are ideal especially for plastic, wood, paper (special files, newspaper etc.) and polyethylene (nylon) processing industry. In hydro-drive Optima four shaft shredders, only primary two shafts are driven by the hydraulic power unit. The other two shafts are driven through gear transmission. The thickness of the cutting disks is 23mm which can be changed according to the required output size. The cutting discs are heat treated special alloy carbon steel. OPTIMA four shaft shredders are designed to minimize the secondary costs by reducing the waste into the required output size in one shredder only. OPTIMA 4 Shafts shredders operate at low cutting speeds (approx 25 rpm, which can be changed) so that noise and dust generation is greatly reduced. Variable shaft speeds are achieved either by a frequency converter in the electronics or mechanically from the hydraulics. Also variable torque control is available when the shredder is hydraulically driven.

When the shredder shafts can no more turn because of the stuck waste in between, shafts turn the opposite direction for an adjustable amount of time automatically, then try to shred again. The cycle keeps on going like this until the waste is shredded. All is achieved by the help of the Programmable Logic Controller (PLC) in the electronic control unit.

### SCREEN

OPTIMA four shaft shredder shreds and re-circulates the material, until it is sized small enough to pass through a removable and adjustable screen. The distance between The Quick Change Screen and shredder shafts can be adjusted for maximum throughput. The screen which can be changed even in seconds, are designed to ensure consistent output particle size.

### HYDRAULIC POWER UNIT AND CONTROL ELECTRONICS

In Hydro-drive Optima shredders, all the hydraulic components are tested at 250 bars although normal operating pressure is around 100 bars. Oil cooler is standard in the hydraulic power unit. On the electrical control panel, following features are available; auto, manual, all shaft control, system on/off by key switch and emergency stop buttons. Motor is driven by a contactor and protected by a thermic breaker. The low current voltage required by the system is supplied by a switch mode power supply. There are two frequency convertors which adjust the speeds and protect the motors, at the same time. There is a breaker/fuse for every component in the system.

## GEAR BOX

According to the design, primary and secondary shaft speeds are different. This is achieved with a reliable gear box, which is integrated to one side of the shredder. Gears are manufactured from a special alloy steel and heat treated. Lubrication channels are available where necessary.

## ENVIRONMENTAL CONDITIONS AND POWER REQUIREMENT

Between -10°C and +70°C, %95 non-condensing humidity, 380 VAC 3 PHASE 50~60Hz

## MODEL: OPTIMA FOUR SHAFT SHREDDER

Total Number of Shafts	: 4
Number of cutting shafts	: 2
Materials	: Special Alloy Heat Treated Steel
Cutting disk thickness	: 23 mm
Cutting chamber	: 900mm x 700mm
Hopper Opening	: 2150mm x 1500mm
Hydro motor power	: Total 15kw, Two independent 7.5kW
Planet Type Reducer	: 3000Nm Torque

