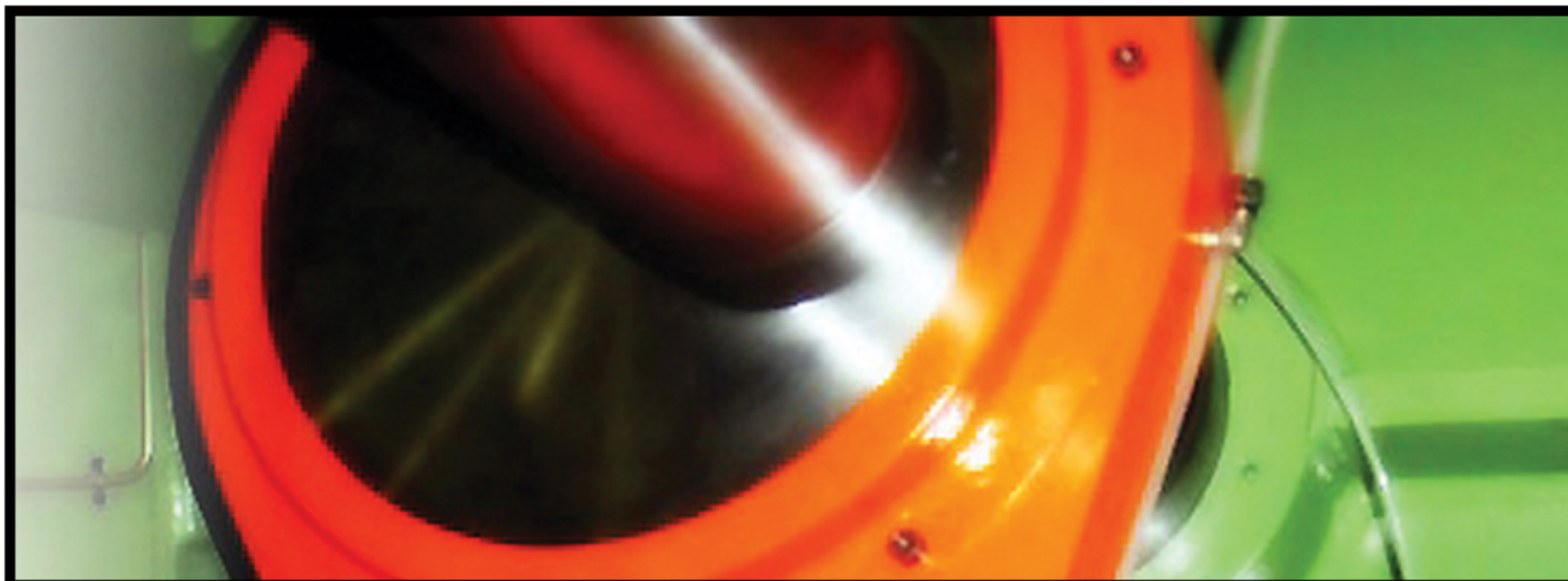


# Cut to Length Shears Systems

- 1.- High Speed eccentric shears
- 2.- Flying Shear
- 3.- Rotary Shear
- 4.- High Speed Electronic Shear



# Cut to Length Shears System High Speed Eccentric Shears

## High Speed eccentric shears

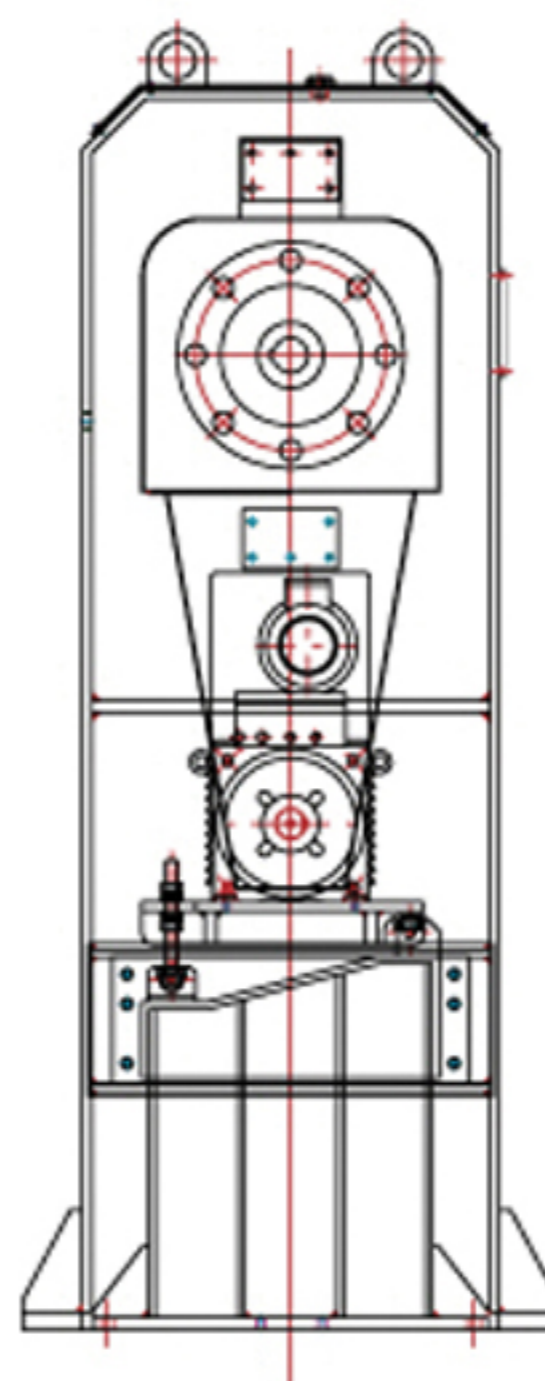


### General Description:

The shear is design for Up / Down cutting motion, operated by A.C motor with converter control system, with direct drive to eccentric shaft of the shear.

Mainframe bank, carbon steel fabricated and assembled in the bank of the feeding pinch rolls and it is equipped with:

- › Stands and blade support frame, carbon steel fabricated and tension relief.
- › Top blade support frame is operated by eccentric's shaft.
- › The bottom support frame comprises a pair of precision mating wedges for GAP control, with visual index.
- › Set-in mechanism for bottom knife supporting frame.
- › Four lines cutting knife design.
- › Top knife with butterfly cutting line shape ( X line shape )
- › Eccentric shaft, drive by A.C motor with vector frequency converter and pneumatic low inertia clutch / brake system.
- › Gearbox with tempered and grinded gear and parallel shafts.
- › Centralised automatic lubrication system for all components at working motion.



### Main characteristics:

- › Eccentric Shear with feeder rolls.
- › Cutting rate of 140 cuts/min.
- › Length tolerance of  $\pm 0,1$  mm.



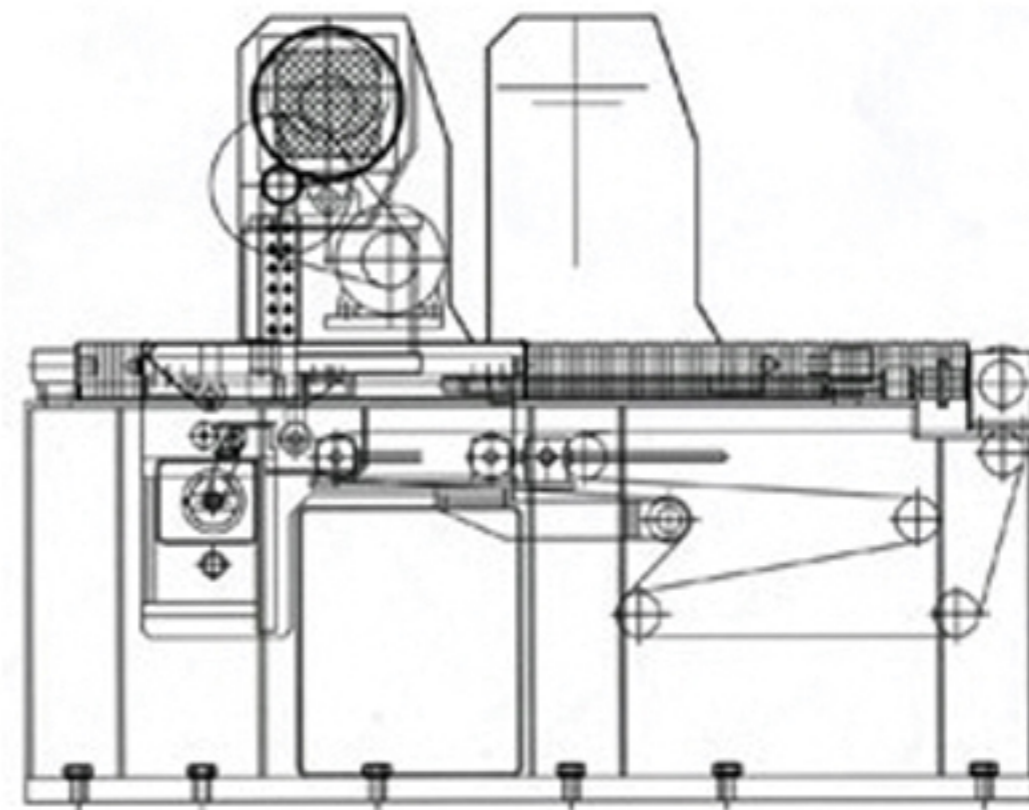
## Flying Shear

### General Description

The equipment is design for **cut-off to length the band according formats production programme** once has been synchronized the speed of the shear with the speed of the band.

On the mainframe bank, made in fabricated carbon steel and tension relief, are assembled the following components:

- › Crops removing roll, elec. motor driven and equipped with lifting motion by hydraulic cylinder.
- › Idle rolls cradle and driven band conveyor for formats removal equipped with lifting drive to prevent band marking.
- › Flying shear for cut-off the band, travelling on rollers up to its speed has been synchronized with the band speed .
- › Top knife support shifting on bronze guides it is driven by eccentric's shaft, wheel and low inertia clutch.
- › Travelling A.C. motor drive equipped with precision gearbox.
- › Safety mechanical stroke ends and limit switches.
- › Special design four line edge knife.



### Main Characteristics of a representative case:

Eccentrics shaft speed	r.p.m.	100
Cutting - off capacity	mm	2000 x 10
Cutting main motor power	Kw	22
Max. travelling length	mm	1.000
Travelling motor power	Kw	48

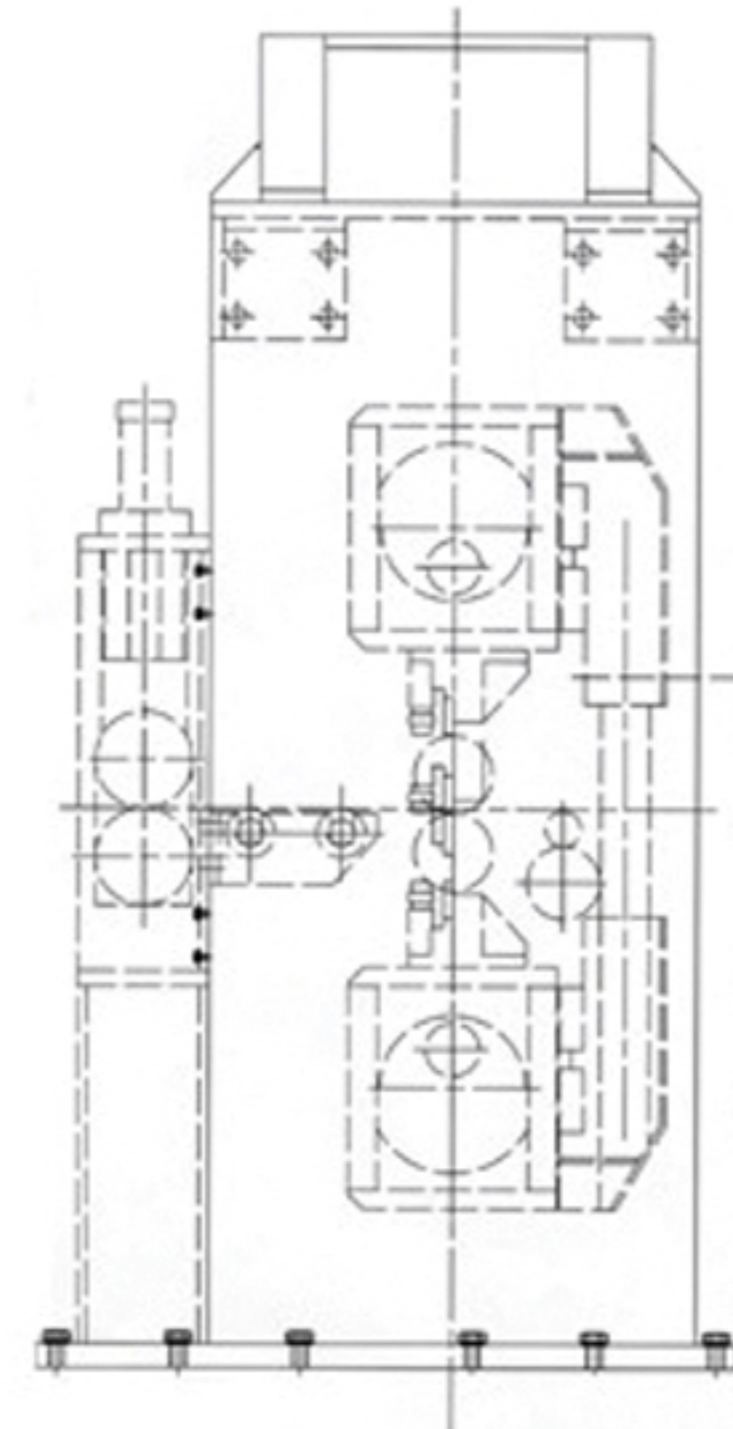
## Rotary Shear

Is a **high speed shear machine (up to 300 cuts/min.)** with a design for cutting the strip in formats at programmed lengths without stopping the processing strip.

The design is a **double driven eccentric shear** one of them with downwards displacement and opposite side acting upwards direction across the strip. **The motion of both shears is synchronised** and fitted with reaction arms sliding on roller guides.

The main frame of the shear is fabricated in carbon steel and stress relieved and fixed to foundations by anchor bolts and nuts.

- › Transmission tower stands for shafts support.
- › Driven by kinematic chain with back - less type of gear.
- › Eccentric shafts supported on bearings.
- › Low inertia knives - holder fitted on bearings.
- › Adjustment of cutting gap tolerance with gap control screen.
- › Pulses generator fitted in measuring wheel .
- › Tilting table fitted on bottom knives - holder as support for short length formats.
- › Lubrication for close oil circuit and flow control system



### Characteristics for a representative case:

Strip dimensions (for carbon steel)	mm.	1600 x 1,5
Strip dimensions (for aluminium)	mm.	1600 x 2
Motor power	Kw.	60

- › METAL COIL SLITTING and CUT to LENGTH LINES
- › LÍNEAS de CORTE LONGITUDINAL y TRANSVERSAL
- › LIGNES de REFENDAGE et COUPE à LONGUEUR



# Cut To Length Shear System High Speed Electronic Shear

## High Speed Electronic Shear

Composed by: **PINCH ROLLS (CYCLIC MOTION)**

### General Description:

The equipment is designed for formats feeding with programmed production lengths and is composed of :

- › Mainframe structure made in fabricated carbon steel and anchor bolted to the basement.
- › Chock stands for rolls, assembled on the mainframe structure.
- › Roll chocks fitted with precision bearings. The top chocks have vertical motion. it is equipped with balancing bar for parallelism and operated by pneumatic cylinders.
- › Carbon steel rolls of low inertia type, coated with Polyurethane of  $90\pm 5$  degree Shore. Also available are coatings with Hard Chrome and other hard metals with shot treatment at central area of rolls.
- › Bottom pinch roll equipped with back-up supporting flight rollers, preventing any bending of shaft of the roll. (Not applied on roll with soft covering)
- › C.A. drive motor equipped with vector frequency converter and fitted with precision transmission with " 0 " gap tolerance.( without backlash )
- › Pulse generator and measuring wheel fitted on drive motor or on metal strip.



Details of " Pinch Rolls" of high precision (illustrative photo)

### Main characteristics:

Rolls diameter	mm.	200
Rolls width	mm.	Up to 2000

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## HIGH SPEED SHEAR

### General Description:

The shear has a special design for Downside to Upside cutting motion. It is operated by electric motor with converter control system.

Note: Conventional Pneumatic Clutch system is not used any more in Electronic shears, because electronic system permits increase of processing speed without any maintenance troubles.

Mainframe base structure is of fabricated carbon steel and assembled on the base frame with the bridle rolls and it is equipped with:

- › Housing stands and blade support frame  
- carbon steel fabricated and stress relieved.
- › Bottom blade support frame is operated by motor and eccentric's shaft.
- › The top support frame comprises of a pair of precision mating wedges for GAP control, with visual index.
- › Set-in mechanism for cutting blade support located at the bottom side.
- › Four lines cutting blade design.
- › Bottom blade with butterfly cutting line shape ( X line shape )
- › Eccentric shaft , driven by A.C motor with vector frequency converter.
- › Gearbox equipped with tempered and grinded gear and parallel shafts.
- › Centralised and automatic lubrication system for all components at working motion.



Double Drive Guillotine & Pinch Rolls  
(illustrative photo)

### Main characteristics:

Shearing capacity	mm.	200 x 3 (*)
Cutting speed	seconds	0,1

(\*) Other required thickness available



High speed electronic shear (advert photo)



Double speed control Drive (advert photo)

TABLE OF PRODUCTION – Standard rates (1)

BLANKS LENGTH mm.	Nº. of FORMATS / Min. (Working Capacity)	PRODUCTION SPEED Mts. / min.
150	120	18
300	108	32,4
400	96	38,4
500	85	42,5
600	78	48,6
800	63	50,4
1.000	56	56
1.500	52	78
2.000	41	82
3.000	30	90
4.000	22,5	90
5.000	18	90
6.000	15	90

(\*)Other rates requirement available

## PROCESSING MATERIAL SPECIFICATIONS

### Formats

		Min.	Max.
Formats Length	mm.	150 (*)	3.000(*)
Formats Width	mm.	400 (*)	2.000(*)

(\*) Available for Other required dimensions. To be agreed with customer

### Standard Tolerances average. (For formats length of $\leq 2000$ mm.)

Length	+/- 0,15 mm.
Diagonal	+/- 0,5 mm.

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# Cut To Length Shear Systems

High Speed Electronic Shear



Detail of Pinch Rolls of Electronic Shear  
(advert photo)



Double Drive of Pinch Rolls & Electronic Shear  
(advert photo)

## MOTORS LIST

Equipment name	Power Kw	Speed r.p.m.	Quantity
Pinch rolls	22	0-1000	1
Shear	25	1000	1



Electronic Shear for stainless steel strip  
of 1500 x 3 mm (advert photo)



Double Drive of Electronic Shear (advert  
photo)

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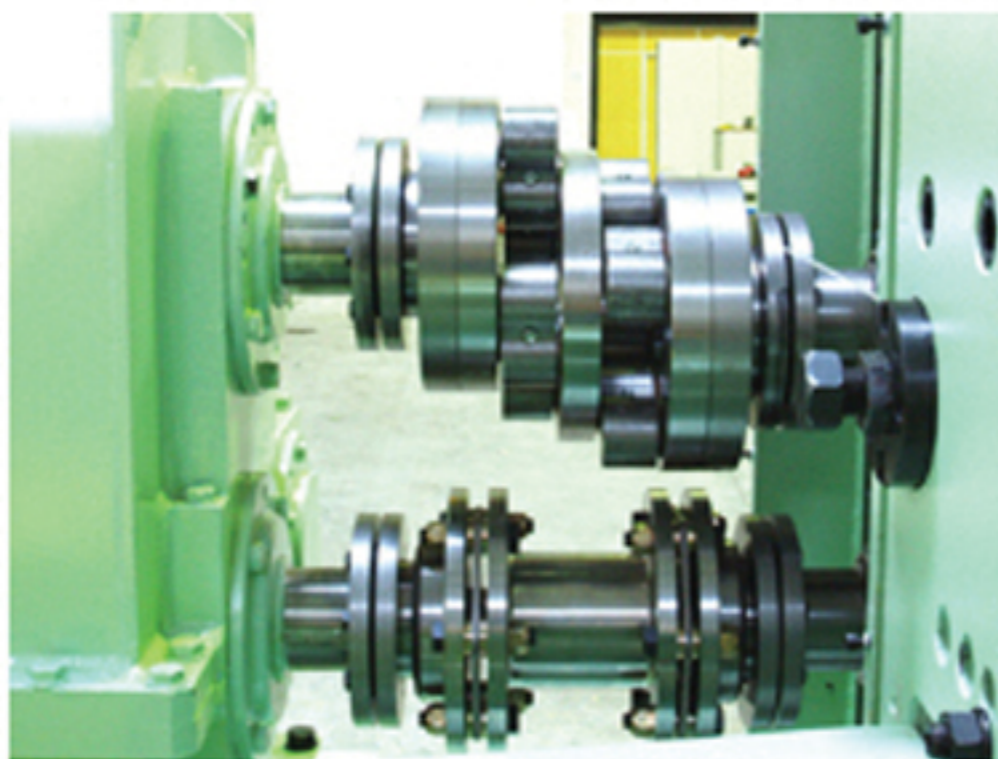


# Cut To Length Shear Systems

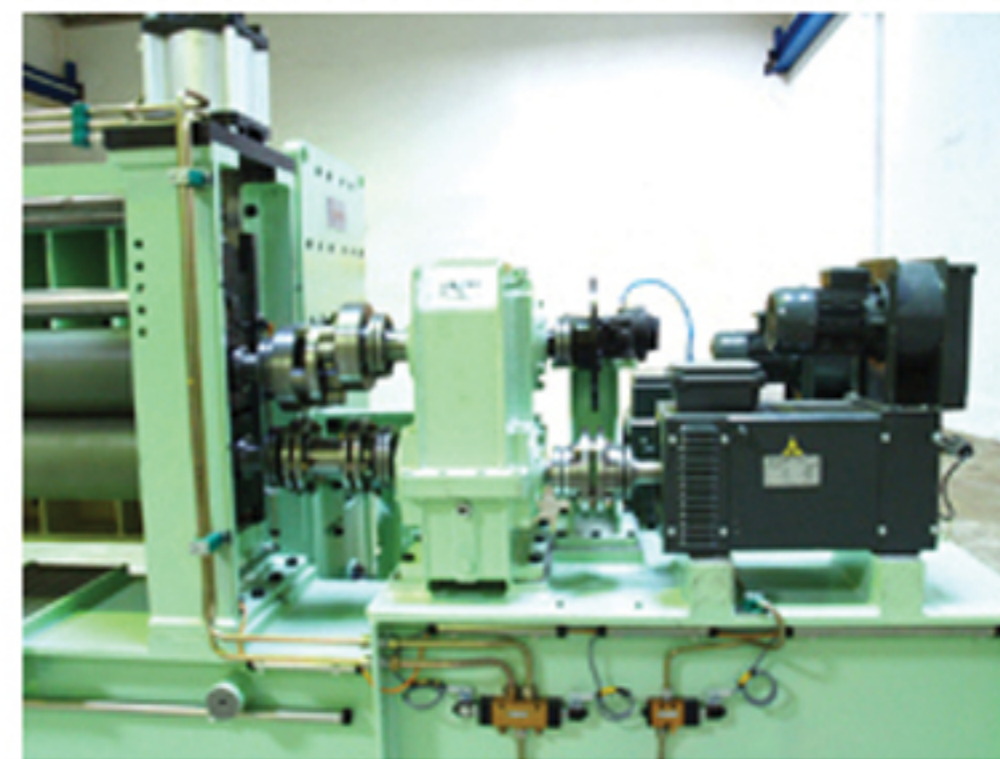
High Speed Electronic Shear

## MAIN ADVANTAGES & DESAVANTAGES of Electronic Shear VERSUS Rotary Shear.

Item	Advantages	Disadvantages
1	Higher production rates for lengths lower than 600 mm.	Slightly Lower production rates for lengths between 600 - 1200 mm.
2	Similar productions rates for lengths higher than 1200 mm.	Similar productions rates for lengths higher than 1200 mm.
3	Higher accuracy & precision & quality on Diagonal dimension. Better square quality of finished products	
4	Half power consumption than Rotary Shear	
5	Lower noise level because clutch system is not required	
6	Cutting motion is from bottom to top side. No scratches on stacker	
7	Lower maintenance required	
8	Higher performance rate when "Heavy Duty Service" is required because mechanical concept of Electronic shear is better adapted for metal strip cutting motion than Rotary system.	
9	Lower Price	
10		Metal strip must be stopped when cutting
11		Strip loop is required in Rotary also to get similar square precision like Electronic Shear



Detail of Precision Coupling "0"



Drive of Electronic Shear (advert photo)

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