Hydraulic guillotine shears

Type HSL
HSLX
The hydraulic guillotine shears of the HSL range are driven by top mounted cylinders. Our long experience in the production of Hydraulic Guillotine Shears guarantees a product of exceptional design and great efficiency.

The fully open back provides the operator the possibility of easy removal or adapting different conveying and stacking systems to the machines.

The all-welded interlocked construction makes the machine virtually indestructible.

The HSL shears are delivered well equipped and have as standard the SP8 Preselection-control. In option, they can be equipped with the SC 70 controller.

**HYDRAULICS**

The hydraulic system consists of a motor pump group and a multifunction manifold block for the control of the machine, easy accessible located at the front of the machine under the table.

The connections to the cylinders, the hold-downs and pumps are by means of flexible hoses.

Two high pressure relief valves protect the hold-downs and the cutting cycle from overload.

Oversized oil tank for trouble free high production shearing.

The parallelism control of the ram is based on the so-called differential principle. Guiding of the beam by roller bearings on hardened ways.

**HYDRAULIC HOLD Downs**

The hydraulic hold-downs work independently, which makes it possible to clamp plates of different lengths and thickness correctly. The hold-downs operate independently from the shearing pressure. On the left and the right hand side of the machine the hold-downs are arranged more closely to allow cutting small plates without any problems.

**CUTTING ANGLE ADJUSTMENT**

Electro-hydraulic adjustments of the rake angle by push buttons at the control panel, and digital read-out (HSL-type). Automatic as a function of the plate-thickness on the HSLX-type with SC70 control. This allows to cut thin material at a less angle, minimizing deformity of the sheared stock.

**BLADE GAP ADJUSTMENT**

The knife clearance is manually set by easy accessible levers (on each side) at the rear of the HSL machine.

On the HSLX-models, this is automatically done by two hydraulic cylinders, as a function of the entered sheet thickness.

Too small
Correct
Too big
STANDARD FEATURES OF HSL- RANGE:

- Hydraulic motor-pump group arranged in front under the table of the machine, leaving the black-side completely free for easy removal or mounting conveying or stacking systems to the machine.
- 2 Upper-driven push-down cylinders.
- All operator controls are conveniently located at the left-hand side of the machine in the immediate reach of the operator.
- The standard SP8 control offers the following functions: automatic positioning of the backgauge to the preselected position with digital read-out, stroke control and selection for backgauge retraction.
- Electro-hydraulic rake angle adjustment by push-buttons in the control panel.
- Quick manual blade gap setting by easy accessible levers at the rear of the machine.
- Tilting plate hold downs, pressure of which is independent from the shearing pressure, in order to clamp properly each sheet thickness. These hold-downs are arranged more closely on the left and the right hand side to conveniently cut small sheets.
- Hydraulic and electric overload protection.
- High shock resistant premium quality blades with 4 cutting edges on all other models.
- Motorised back gauge, positioned by the SP8 preselection control. Digital read-out of the position.
- Shearing table with a number of square iron blocks, easing the sheet feed-in and increasing drastically operator's safety.

SC 70 CONTROL (optional)

HSL executed with the optional SC70 control is called HSLX.

Basic features of the SC70 control:
- LCD screen with 16 lines of 26 characters.
- Memory capacity:
  - max 200 programs with max. 400 steps
  - Max 127 steps per program.
  - Material list of max. 32 materials
- Each program contains the basic cutting parameters such as material type, material thickness, blade gap and cutting angle setting
- Electro-hydraulic blade gap setting by 2 cylinders.
- Stroke control adjustment.
- Automatic programmable retraction of the back gauge.
- Possibility of motorised adjustment of the back gauge position by 2 push-buttons.
- Backlash compensation.
- Mode selection Inch-Metric.

Programming modes:
- Automatic:
  - By entering the sheet thickness for mild steel, the control automatically sets the blade gap and the cutting angle as a function of the sheet thickness.
  - All parameters can be manually modified according to the actual data.
- Manual:
  - All cutting parameters such as material type, sheet thickness, cutting angle are programmed manually.

BACKGAUGES

The backgauge consists of 2 rigid arms (containing guidings and control spindle) and the parallel adjustable backgauge bar. This assembly assures a precise positioning of the sheet. Swing-up and swing-away types enable cutting of sheets longer than the standard stroke length.

Motorised positioning with the SP8 preselection control or programmable positioning with the SC70 control. Digital read-out of the actual and preselected or programmed position.

MOTORISED BACKGAUGE

Lateral movement from front to back.
Standard on 6, 8 and 10mm models
Power backgauge stroke 750mm.
Expandable in option to 1000mm

SWING-UP BACKGAUGE

Power backgauge stroke 820mm.
Available as option on 3m, 6 and 8mm models
When the backstop runs backwards, it will mechanically lift up to cut longer sheets.
Also expandable to 1000mm stroke with lifting up feature.

SWING-AWAY BACKGAUGE

Power backgauge stroke 1000mm.
Standard on all 13 and 16mm models
Available as option on 4m-6 and 8mm and all 10mm models
When removing the axis in both carriers and run the backstop backwards, the complete carrier will swing away to the back, enabling to cut longer sheets.

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- Electro-hydraulic blade gap setting by 2 cylinders.
- Stroke control adjustment.
- Automatic programmable retraction of the back gauge.
- Possibility of motorised adjustment of the back gauge position by 2 push-buttons.
- Backlash compensation.
- Mode selection Inch-Metric.
OPTIONAL EQUIPMENT

- SC70 control unit
- Squaring arms and front support arms
- Ball transfers in the iron table blocks
- Protractor for angle shearing
- Knives for cutting inox
- Hand Safety Guard with hand gaps
- Different backgauge types
- Pneumatic sheet hold-up system for cutting of thin materials
- Different conveying and stacking systems with integrated sheet hold-up arms and scrap container
- Safety fences and light beams at the backside of the machine (standard for countries requiring the CE safety specifications)

A specific feature of the HSL/HSLX range is the complete free rear space between the frames, so the machine can be executed with different sheet hold-up, conveying and stacking systems to improve production time.

A pneumatic sheet hold-up system for sheet thickness up to 4mm, assuring the perfect gauging while entering the sheet into the machine. During the cutting action and when not in use, the arms rest under a cover, thus avoiding damaging the arms itself when cutting heavier material.

Pneumatic sheet hold-up system, scrap chute and scrap container, counter rolls, alignment cylinders and stacker with automatic adjustable arms.

The pneumatic sheet hold-up arms hold the thin sheets for perfect gauging. A strip of scrap can be cut and removed when starting a series of cuts with a new sheet. The conveyor transports the plate to the stacker. A counter roll prevents scratching of the previously stacked sheets. The stacker arms lower automatically during stacking action.

SQUARING ARMS AND FRONT SUPPORT ARMS
with or without scale, T-slots and flip-over stop. Lengths from 1000 up to 3000mm.

PROTRACTOR for angle shearing.

BALL TRANSFERS mounted in the iron table blocks, for easy feedin of the sheets.

HEAVY DUTY CONVEYOR and sheet hold-up system

PNEUMATIC SHEET HOLD-UP SYSTEM
for sheet thickness up to 4mm, assuring the perfect gauging while entering the sheet into the machine.

During the cutting action and when not in use, the arms rest under a cover, thus avoiding damaging the arms itself when cutting heavier material.

TECHNICAL DATA HSL-range

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<th>Model</th>
<th>Capacity mild steel (400N/mm²)</th>
<th>Capacity stainless steel (700N/mm²)</th>
<th>Cutting length E (mm)</th>
<th>Angle Adjustment D (degrees)</th>
<th>Number of strokes / min</th>
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<th>Stroke Backgage SUB version mm</th>
<th>Stroke Backgage SAB version mm</th>
<th>Working height A (mm)</th>
<th>Motor Power kW</th>
<th>Length B (mm)</th>
<th>Width without CE Safety fences C (mm)</th>
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<th>Height D (mm)</th>
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* 6, 8 and 10mm models with Backgage MOT version, 13 and 16mm models with Backgage SAB version

HACO reserves the right to change any specifications without prior notice.
Safety features and fences as shown are standard for countries within the EC requiring the CE safety specifications. These are available as option for other countries.

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**HYDRAULIC PRESSBRAKES**
Conventional and CNC controlled.
- Conventional up to 3000kN.
- CNC controlled up to 10,000kN.

**CNC PUNCHING MACHINES**
Full CNC controlled punching machines with indexable tooling according to type with single punching head and optional manual tool change turret or with automatic tool change turret for up to 20 different tools.
Capacity of 22 and 30 tons.

**ANGLE NOTCHERS**
Fixed and variable angle.
Up to 6mm

**HYDRAULIC STEELWORKERS**
4 and 5 station universal steelworkers for punching, shearing flat, angle and bar cutting, notching.
Up to 1600 kN

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