Automatic sawing machine
CM601

ADIGE ENG

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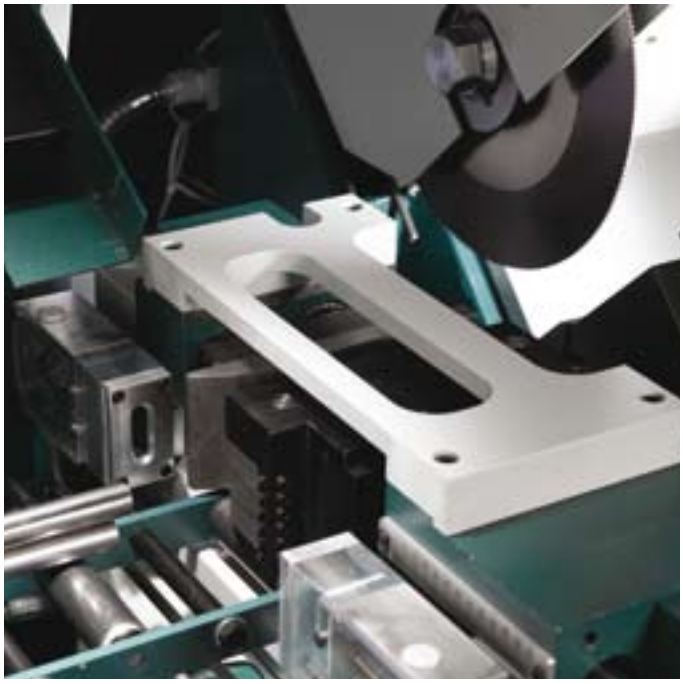
Automatic sawing machine for steel, aluminium and brass

The **CM601** is a CNC automatic saw for solid tubes and profiles up to a diameter of 102 mm, designed for cutting short and medium length workpieces. It is can be specifically configured to get optimum cutting performance & productivity for cutting different materials like steel, aluminium, brass and high tensile strength alloys. **CM601** is available in single piece or two piece cutting version. For the two piece version the maximum diameter is limited to 40 mm. It is equally efficient with standard sections (round, square & rectangular) and with special profiles.
Its compact layout, sturdy construction and careful handling of the bars during the entire process make it an ideal choice for continuous production; both on light as well as heavy tubes.



CUT QUALITY AND ACCURACY

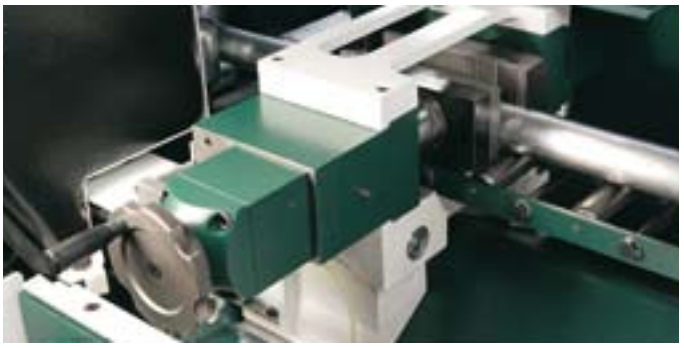
- the loading mechanism carries the bar to be cut, to the CNC controlled feeding carriage. This servomotor controlled carriage guarantees very accurate and highly repeatable positioning of the tube;
- the feeding speed and acceleration are automatically adjusted taking into consideration the bar weight and length. This results into a silent and vibration-free operation;
- the possibility of programming and separating two different cut-lengths from the same bar permits optimization of the material usage by reducing scrap.

FLEXIBILITY AND EASE OF USE

- the machine is programmed by means of a handy touch screen panel;
- it is sufficient to enter the material type, the cut lengths and quantities to be produced to program a production run. The cutting blade is to be selected from a blade database. With this information the system automatically loads all the cutting parameters like cutting head stroke, blade RPM and the feedrate for the blade;
- the database of the cutting parameters contains well-proven parameters and hence assures an optimal setup of the operating conditions at all times;
- two different unloading positions can be defined in the program;
- a third unloading position is used for collecting end-pieces and cut-offs;
- the machine operation can also be monitored remotely by means of high-speed teleassistance network connection.

QUICK PRODUCTION CHANGE

- in case of a different cross-section to be cut, the adjustments of hydraulic clamps are carried out by the use of three handwheels that are conveniently positioned in the cutting area. The operator panel displays all required guidelines in this regard.

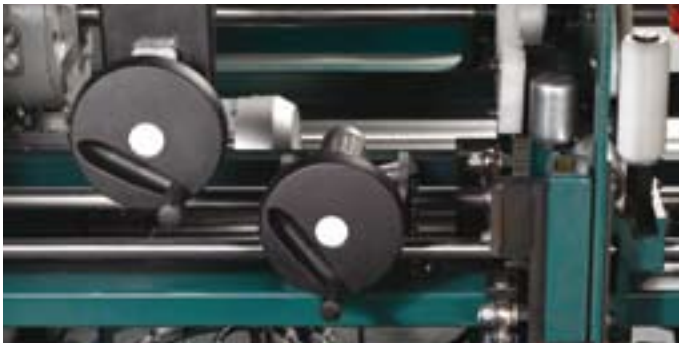


SILENT OPERATION

- during the feeding operation there is no contact between the bar and machine parts thanks to a tilting movement of the carriage. This reduces the wear & tear of machine parts and prevents scratching of the tube surface.

EFFICIENT BLADE MANAGEMENT

- it is possible to use thin, small diameter blades;
- thanks to reduced vibrations of the blade higher accuracy of the cut is obtained along with material saving and lower noise during the cutting operation;
- at the end of the cutting operation, during the return motion of the blade, there is no contact between the bar and the blade. This eliminates friction and undue blade wear.



BAR HANDLING

- two loader adjustment handwheels are located near the operator's position. These are to be used when there is a change in the cross section to be cut;
- during the loading operation, the raw material is not subjected to harsh treatment (fall or shocks): this fact does not alter the surface conditions, limits noise and unnecessary mechanical stress on machine components even with heavy material.

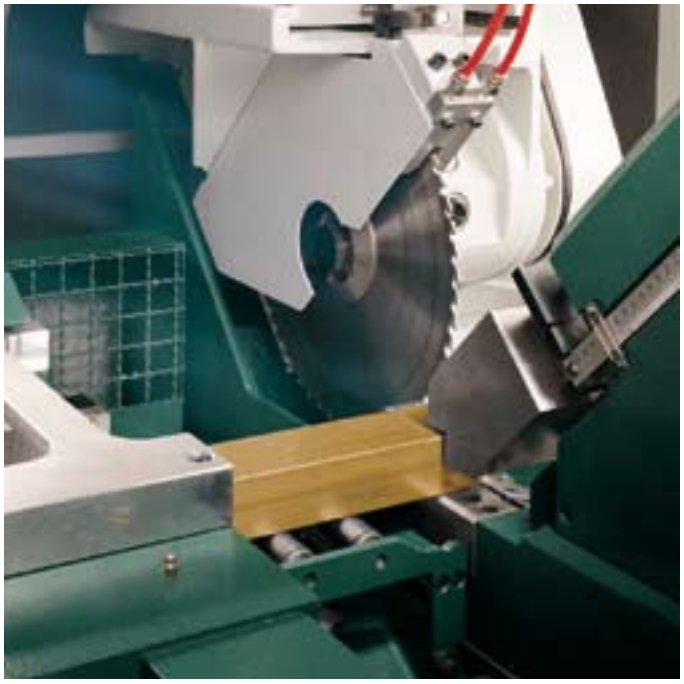
Steel cutting

- available in two configurations:
  - mild steel: with 5.5 kW motor;
  - high tensile strength alloys: with 9.2 kW motor;
- cutting speed from 15 m/min. to 300 m/min.;
- the cutting head driven by an electrical motor and a ball-screw moves on linear guides to obtain higher positioning accuracy and precise motion control;
- the high strength alloy version is fitted with a blade guide system with three contact points. Also the blade is lubricated with oil on both the sides;
- additional clamp is available to hold the cut piece for bars or tubes with an irregular shape;
- it is possible to install micro-lubrication device, turbo-refrigeration or emulsion cooling;
- possibility of installing a small brush to keep the blade clean and a chip-breaking mechanism.

Aluminium cutting

- high speed cutting with 11.2 kW motor at 2800 RPM;
- sawblades with hard metal inserts;
- integrated micro-lubrication system;
- blade guide system with large size bronze guideways;
- cutting head movement on a ball-screw and controlled by a servo-motor;
- independently adjustable main clamp and carriage clamp pressure to prevent deformation of even thin wall tubes;
- chip evacuation by means of a powerful suction system acting in three different points to continuously maintain the machine in clean condition;
- the suction airflow rate in the various areas can be adjusted;
- with the 9.2 kW motor, the machine can be efficiently used also for cutting lead-free brass alloys;
- in the case of multi-material cutting machine (aluminium/brass - lead-free brass alloy), the chips can be evacuated and collected in two separate containers.

Brass cutting



- availability of both single piece configuration up to 102 mm diameter and double piece up to 40 mm diameter, with 5.5 or 7.5 kW motor;
- same clamps can be used from 10 to 80 mm diameter tubes (up to 65 mm solid bar);
- accurate detection of the front end of the work-piece to eliminate the need of the initial cut;
- the cutting head design, minimize the end-piece scrap (feature particularly appreciated in brass cutting);
- chips are carried to a container by means of a conveyor.

Loading devices

INCLINED PLANE

- it is the simplest loading solution suitable for both tubes and solid bars. With a weight limit of 72 kg/m and manual loading, it stands out as the most versatile solution;
- loading lengths: 4500, 6500 mm.

SINGLE PIECE-TWO PIECE

- with a weight limit of 72 kg/m. Designed to handle also the two piece loading, it is the optimal loading configuration for brass and heavy solid bars;
- loading lengths: 3500, 4500, 6500 mm.

STEP LOADER

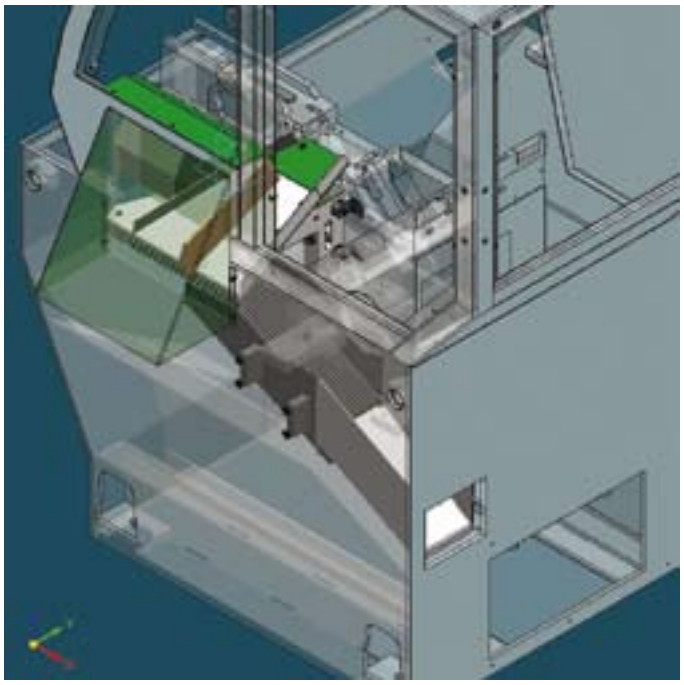
- best for complex profiles, it allows the loading by the operator without interrupting the cutting operation. Thanks to a reversible automatic handling system, the bars can also be moved backwards from the feeding line to the loader belts for unloading;
- loading lengths: 3500, 4500, 6500 mm.

BUNDLE LOADER

- it has a capacity of 4000 kg and it is designed for automatic loading of round, square and rectangular tubes with a work-piece weight limit up to 25 kg/m.;
- loading lengths: 6500, 8500 mm.

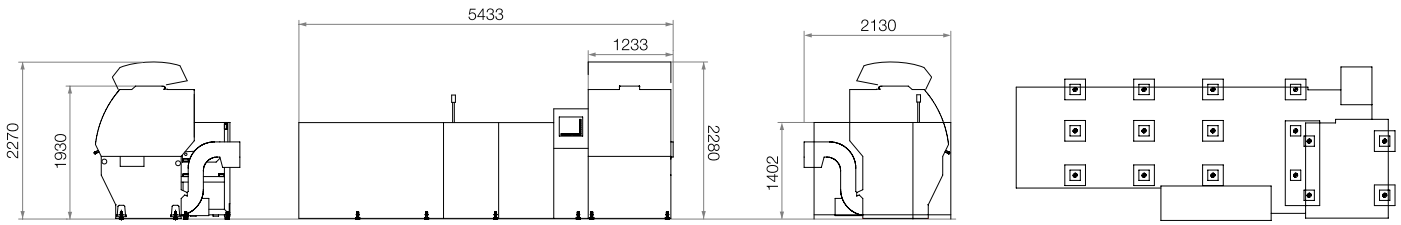
Unloading options

- the cut pieces up to 400 mm length can be collected in two different containers positioned at the right end of the machine (one on right and one on left). A programmable guiding mechanism directs the pieces in the appropriate container as per the program.
- the chips, initial cuts and end scrap are collected at the rear side of the machine in a different container;
- for workpieces up to 400 mm length, a mobile separating device allows to convey the workpieces in two separate boxes, right or left;
- for workpieces between 250 to 1500 mm length, an optional unloading device can be installed. It is equipped with two parallel conveyor belts. The workpieces can be unloaded either at the end of the unloader or can be collected on a laterally positioned table.



Technical Data

	Steel	Hard metal	Brass	Aluminium	Ecobrass
Sawblades	coated	HM/CERMET	HSS	HM	HM
Cutting capacity	102 mm	65 mm	102 mm	102 mm	102 mm
Sawblade diameter	235-370 mm	350-370 mm	165-360 mm	250-360 mm	250-360 mm
Cutting speed (RPM)	15-300	30-430	210-4000	1000-5000	500-5000
Cutting head motor power	5.5 (kW)	9.2 (kW)	5.5 (kW) opz. 7.5	11.2	9.2
Minimum cutting length	5 mm	5 mm	5 mm	5 mm	5 mm
Maximum cutting length	400 mm (opz. 1500)				
Bars loading length	2000 - 6500 mm				
Tubes loading length	2000 - 8500 mm				
Scrap bar end	5 mm				
Installed power	15 (kW)	19 (kW)	15 (kW)	19 (kW)	19 (kW)
Machine base dimensions: **- with bar loader length 3500 mm** **- with bundle loader 6500 mm**	4500 x 2130 mm 7400 x 2700 mm				
Machine weight	4100 Kg				



CE Features, weights, dimensions, capacities and performances of the machines are not binding and may be subject to change without notice. Pictures are for demonstration purpose only.

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