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**CAVENAGHI & RIDOLFI**  
OLEODYNAMIC PRESSES SINCE 1922

# Mission



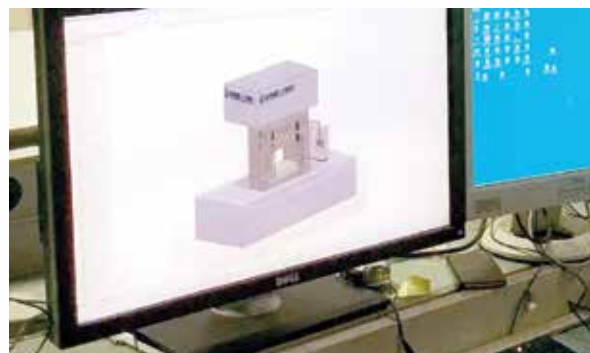
Ever since 1922, our machines and systems have been designed and built with safety, quality, reliability and low, easily performed maintenance in mind.

We work in synergy with the customer to develop machines and systems with new stamping and production technologies.



Our extensive experience in hot and cold forming metals and non- metals is applied to a wide range of sectors, with particular attention to the automotive industry, household appliances and kitchenware.

We design with the most advanced latest generation 3D CAD systems integrated with FEM computing and PDM management capabilities.





# Strenghts

## FORMITALY®

Complete equipment for sheet metal working

Usually, to address your manufacturing needs, more than one supplier is required for each step of the process: from die design to press features and, more generally, for the creation of your entire forming line.

The network enterprise Formitaly with its 3 specialized and integrated divisions can customize your entire stamping line to bring your product to life with more precision and complete flexibility based on your requests.



### The 4th Generation of Cavenaghi & Ridolfi is Ready for the 4th industrial Revolution and future developments

- Interconnection
- Information transparency
- Technical assistance
- Decentralized decision

Cooperation among partner companies allows quick answers for different application fields.



All our machines are CE marked in accordance with safety regulations and accident prevention.

We have also the knowledge to provide UL marked machines and in accordance with all the USA regulations.



# Our History



One of the things that makes us unique is that **CAVENAGHI & RIDOLFI** has not only been family-operated for three generations, we also have employees whose families have been with us for three generations.

**NOWDAYS THE FOURTH CAVENAGHI & RIDOLFI'S GENERATION IS TAKING PLACE.**



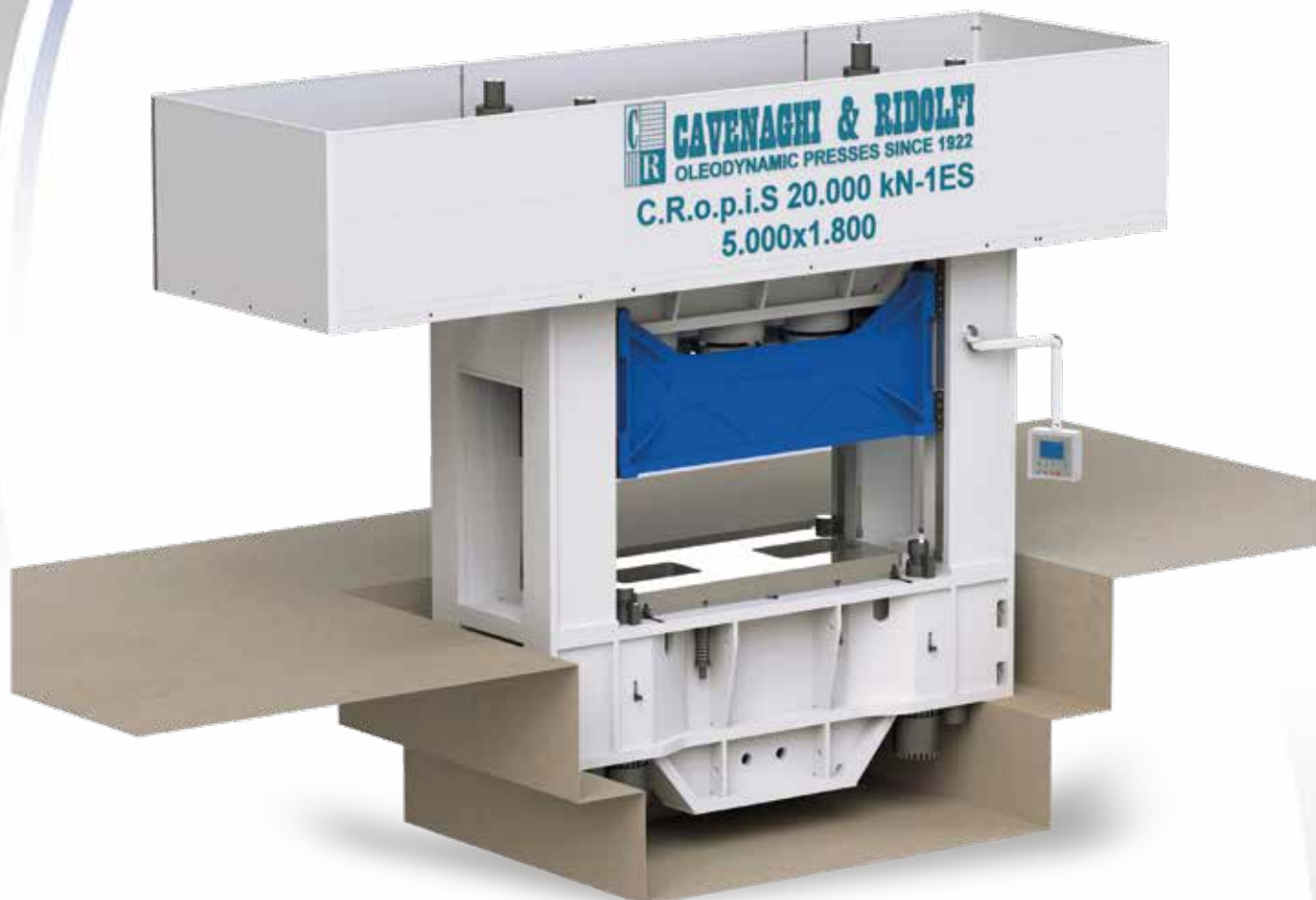
In the last decade, production has been increasingly oriented towards special high-tech machines integrated with automated load and unload systems, making sure that we can offer our customers a total technology transfer partnership.

We just improved our machining capacity industry 4.0 integrated with a 3 axes turning center CNC control, a big turning center CNC control with a milling, reaming and tapping station and a 5 axes machining center CNC control. This in order to offer to our Customers always higher quality and reliable products.



# Oleodynamic Servo Presses

**C.R.o.p.i.S 20.000 kN – 1ES – 5.000 x 1800** Oleodynamic Servo Press is designed for the production of heavy auto motive/trucks components with progressive dies.



## SPECIAL FEATURES

### BLANKING DAMPENERS

- Special designed banking dampeners in close loop control.

### SLIDE PARALLELISM CONTROL

- Advanced system for the control of slide parallelism during forming operation.

### SLIDE ECO CONTROL

- Innovative slide balancing system designed to reduce power consumption during the positioning movement of the slide with high energy savings.

## PRESS CYCLE TIME

• Approach stroke	[mm]	220
• Blanking phase	[mm]	16
• Forming phase	[mm]	70
• Coining phase	[mm]	1
• Return stroke	[mm]	307
• Press cycle time	[sec]	5
• Productivity	[str./min]	12

# Oleodynamic Presses



**C&R** oleodynamic presses have large versatility and can be used for a wide range of forming application. They can be used as stand alone or in lines. They can be easily automated with several feeding systems like linear transfer 2, 3 axes, coil feeding lines, anthropomorphic robots. These presses are normally "tailor made" designed and give to the end user a wide range of modification in order to fit his production requirements

## TYPE

Monolithic, modular from 1.000 to 50.000 kN and C-frame presses from 300 to 3.000 kN:

- Single action
- Double action
- Triple action
- Special actions

## TECHNIQUE

- FMS mechanical design
- High reliability oriented design
- Accurate guiding system
- Honed cylinder/ram unit with long life low friction hi-tech seals
- Compact oleodynamic manifolds
- Cushion pins with bush guiding
- Easy maintenance design
- Operator friendly interface
- Fully adjustable production parameters like strokes, forces and speeds

## ADVANTAGES

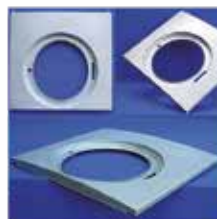
- Use of standard components
- Maintenance friendly interface with telediagnostic support
- Full integration of the press with automated feeding system
- One service contact for the complete production line

## SAFETY

Safety features in accordance with CE regulation or with the country specific requirements.

## ACCESSORIES

- Quick die locking and changing systems
- Blanking dampeners
- Ejectors
- Sound proof insulation
- Vibration dampening press mounting with dampening elements
- C&R NITRO control system for dies with nitrogen springs





# Sinks and Bowls Production Lines

**CAVENAGHI & RIDOLFI** develops advanced stainless steel sinks mono piece and bowls production lines. This line is equipped with a special system to balance slide and tool weight in order to reduce power consumption.

## LINE COMPOSITION:

- Two stations destacking unit with sheet separation system and double sheet detection
- Lubrication unit with rolls or spray programmable
- Programmable centering unit
- Loading linear feeder SKADY SMARTAUTOMATION
- 1<sup>st</sup> operation press – Drawing with twin active cushion technology
- Interpress feeder SKADY SMARTAUTOMATION
- 2<sup>nd</sup> operation press – Calibration with active/passive cushion
- Interpress feeder SKADY SMARTAUTOMATION
- 3<sup>rd</sup> press – Trimming with blanking dampeners
- Unloading feeder SKADY SMARTAUTOMATION

## AUXILIARY FEATURES:

- Automated die changing and locking system with twin bolsters
- Integrated line interface with one-point operator station
- Remote tele-diagnostic



# Pots and Lids Lines



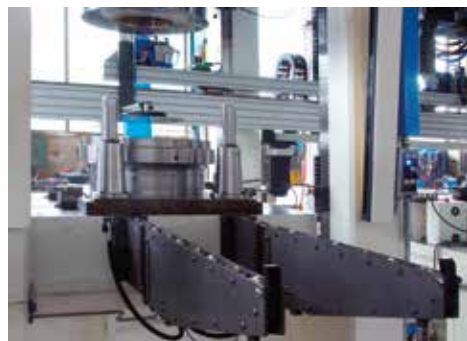
**CAVENAGHI & RIDOLFI DEVELOPS ADVANCED STAINLESS-STEEL POTS AND LIDS PRODUCTION LINES**

## **LINE COMPOSITION:**

- Two stations destacking unit with sheet separation system and double sheet detection
- Lubrication unit with rolls or spray programmable
- Programmable centering unit
- Mono bar transfer SKADY SMARTAUTOMATION with Z axel holding bar driven by synchronized servomotors.
- Axel X with grippers holding bar driven by servomotors
- 1<sup>st</sup> operation press – Drawing with active/passive cushion technology
- 2<sup>nd</sup> operation press – Calibration with active/passive cushion
- 3<sup>rd</sup> press – Trimming with blanking dampeners

## **AUXILIARY FEATURES:**

- Semi automated die changing and locking system with twin consoles
- Integrated line interface with one-point operator station
- Remote tele-diagnostic





# Multipresses

## C.R.2.N.1,000 KN 3-STATION MULTIPLE ACTION HYDRAULIC TRANSFER PRESS WITH 500 M SPACING

Steel filter body production line. Designed for an output of 3 filters per minute, the line consists of the following:

- 4-station rotary magazine.
- Roller lubricator with double workpiece checking/unloading station.
- Centralizer unit.
- Single-bar transfer with suction cup pickup units.
- C.R.2n.1,000 kN-3-station filter body drawing press with 500 mm pitch.
- The press features an innovative guide system to compensate the off-center loads resulting from the manufacturing process.
- Trimming unit.



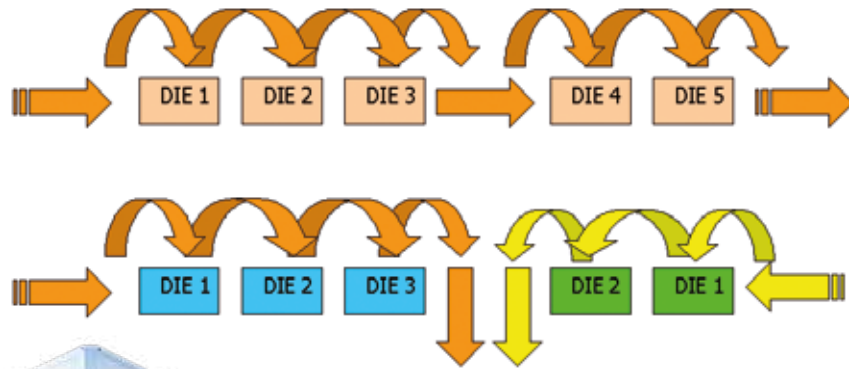
# Flexylines



## FLEXYLINE IN THIS CONFIGURATION HAS THREE OPERATIONAL MODE:

- Coils feeding and production with presses N°1,2,3,4,5
- Coils feeding and production with presses N°1,2,3
- Blanks feeding and production with presses N°5,4.

The line is equipped with advanced die changing system with automatic tool recognition system.





# Special Lines



**MULTI PURPOSE ROBOTIZED PRESSING CELLS**



**CUSTOM DESIGNED PRESSING CELLS FOR HEAT EXCHANGER PLATES**



**CUSTOM DESIGNED PRESSING CELLS FOR CARBON AND INNOVATIVE FIBERS**

**SPECIAL PRESSES FOR UNCONVENTIONAL ALLOYS FORMING**



# Hot Forming



## AUTOMATED OIL DRILL COUPLING SLEEVE PRODUCTION LINE

- This line is designed for hot forming (1,000 °C) alloy steel sleeves.
- Maximum work piece weight is 200 kg.

### THE LINE CONSISTS OF THE FOLLOWING:

- Two-axis manipulator with brushless motor drive.
- Work piece loading gripper with 300 kg capacity.
- Type C.R.3sl. 5,000/5,000/2,000 kN 1,200x1,200 press featuring three independent stations. This press is capable of high forming speeds thanks to its piston-type accumulators which enable it to reach an operating speed of 200 mm per second at maximum press power.

C&R can develop in accordance with the customer specifications hot forming presses for any application.





# Press Hardening

**High resistance materials forming**  
**Automotive side intrusion beams and bumper production system using**  
**"Press hardening" technology.**  
**N°8 plants realized and operating in Sweden and in the USA**

## **MAJOR FEATURES OF THIS SYSTEM INCLUDE:**

- Operating force: 12,000 kN.
- Operating speed at maximum force: 200 mm/second.
- Four top cushions + four bottom cushions.
- Forming takes place in four independent slide-mounted dies with an exclusive height compensation system capable of accommodating 25 mm differences between dies.
- Operating speeds and pressures are controlled by 16 servovalves.
- Automatic die change system. Production type change time 5 minutes.



# Thermoplastic-set



Automated blank feeder with steaming unit and pre-forming brackets.



**LIGNOTOCK** automated motor vehicle door panel production line. C.R.ligno.6,000 kN press. Forty systems delivered in Germany, the U.K., Spain and the United States.



Automated clip feeder and finished part unloading.

Compression presses for **WOODSTOCK** thermo plastic car interiors.





# Smart Automation

To provide full, customer-oriented service, CAVENAGHI & RIDOLFI has created the SKADY SMARTAUTOMATION division, which designs and manufactures automated load/unload systems.

## LINEAR FEEDERS WITH CARTESIAN MOVEMENTS

- Loading feeder with auxiliary 3rd rotation axis
- Inter presses feeders
- Unloading feeders

## ELECTRONIC TRANSFERS

- Mono bar and bi-bars 3 axes transfer up to 12 motors
- Destackers with possibility to have also more than one head
- Loading and downloading stores

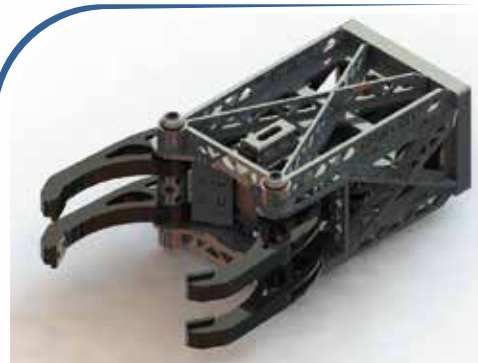
## DIFFERENT KINDS OF ROBOTS APPLICATION

- Tilters
- Magnetic feeder to manage the coils end
- Anthropomorphic application
- Feeding line from coil integration and management



### **servoCRAB**

- Servocontrolled grippers
- Double pick up grippers
- Vacuum cups range 80-400 mm
- Payload 4 kg



### **hydroCRAB**

- The power robot gripper
- Diameter 200-460 mm
- Payload 200 kg



1<sup>st</sup> MAY  
**1922**



1<sup>st</sup> MAY  
**2019**

THE 4<sup>th</sup> GENERATION

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