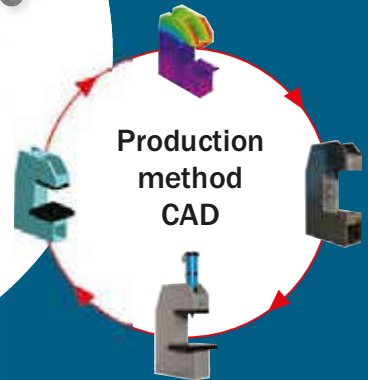
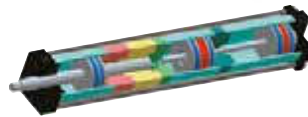


# Hydro-pneumatic presses from 7 to 30 T



## Hydropneumatic presses

### 7 T, 13 T ET 30 T FRAME RANGE

#### We are proceeding with compressed air type... Only!

Our cylinder is a compressed air cylinder with closed hydraulic circuits, which allows attaining the requested loads with a stroke which is triggered when the piston gets a resistance. The action is very simple and similar to pneumatic double effect cylinders. This technology thus combines the advantages of both pneumatic and hydraulic systems, without any adverse effects (no noisy and dirty hydraulic motors, low air consumption...).

- Rapidity
- Power
- Quality
- Economy
- Quiet
- No maintenance

The operating principle of EMG hydro-pneumatic cylinders is to divide the entire stroke into 3 parts: fast approach, working stroke and return stroke.



#### Fast approach:

The control valve injects compressed air into the piston chamber and actuates the working piston. The descent of the piston is quick but powerless: it is fast approach.

#### Working stroke:

When the working piston reaches the material, the control valve is reversed and triggers the 3/2 distributor which injects compressed air in the second piston chamber. The plunging shaft compresses oil and increases power.

#### Return stroke:

The control valve returns to its initial position. The air is evacuated by 3/2 distributor. The working pistons and traverse piston return to top speed in their initial position.

A very wide range of machines combining:

- 60+ different cylinders
- With 3 different frames



# Hydro-pneumatic presses from 7 to 30 T

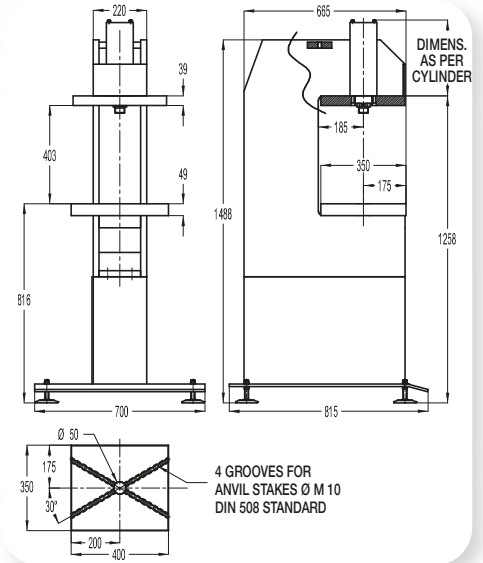
## Examples 7 tons range frame

Power *	<b>from 6 910 to 7 820 kg</b>
Total stroke *	from 50 to 400 mm
Travel *	from 6 to 40 mm
Clear height	400 mm
Swan-neck depth	185 mm
Fixing of tool on cylinder	M30 x 2 x 25 mm
Total length of the cylinder *	from 650 to 1 790 mm
Table	400 x 350 mm
Weight *	500 kg

\* as per the choice of the cylinder



**7 tons**



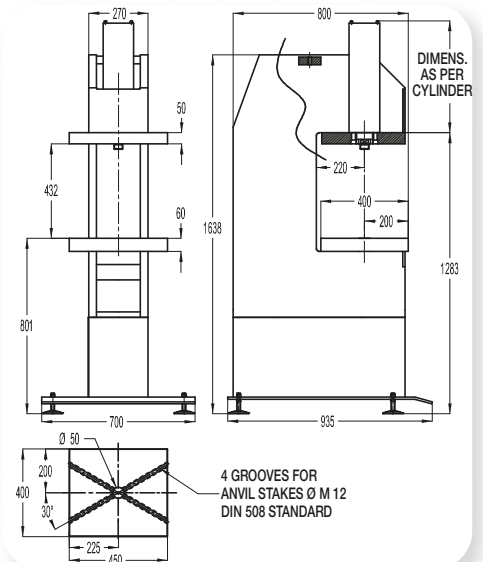
## Examples 13 tons range frame

Power *	<b>from 13 380 to 14 000 kg</b>
Total stroke *	from 50 to 300 mm
Travel *	from 6 to 40 mm
Clear height	430 mm
Swan-neck depth	220 mm
Fixing of tool on cylinder	M30 x 2 x 25 mm
Total length of the cylinder *	from 695 to 1 660 mm
Table	450 x 400 mm
Weight *	750 kg

\* as per the choice of the cylinder



**13 tons**



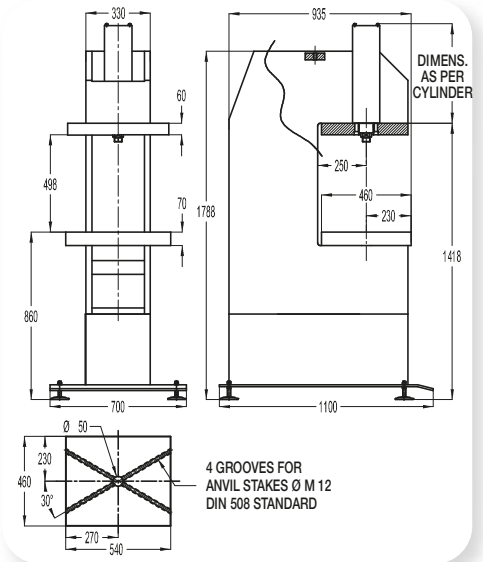
## Examples 30 tons range frame

Power *	<b>from 28 300 kg to 30 650 kg</b>
Total stroke *	from 50 to 400 mm
Travel *	from 6 to 40 mm
Clear height	500 mm
Swan-neck depth	250 mm
Fixing of tool on cylinder	M39 x 2 x 35 mm
Total length of the cylinder *	from 800 to 2 010 mm
Table	540 x 460 mm
Weight *	1 200 kg

\* as per the choice of the cylinder



**30 tons**



## > Versions of the control for hydropneumatic presses



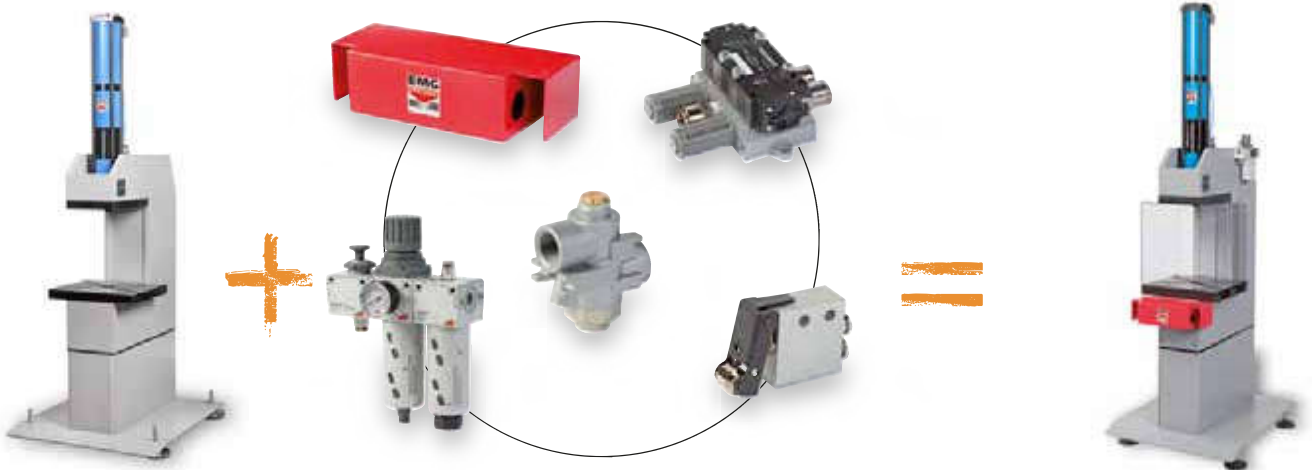
### • Version 1: intended for integration by the customer

Only machine delivered, no controls, no equipment.

### • Version 2: running condition with two hand controls

Version 1 + :

- Two hand controls with push buttons.
- Protection of side and top tables.
- Distributor, check valve and pneumatic fittings.
- Regulation and lubrication filter (lockable).

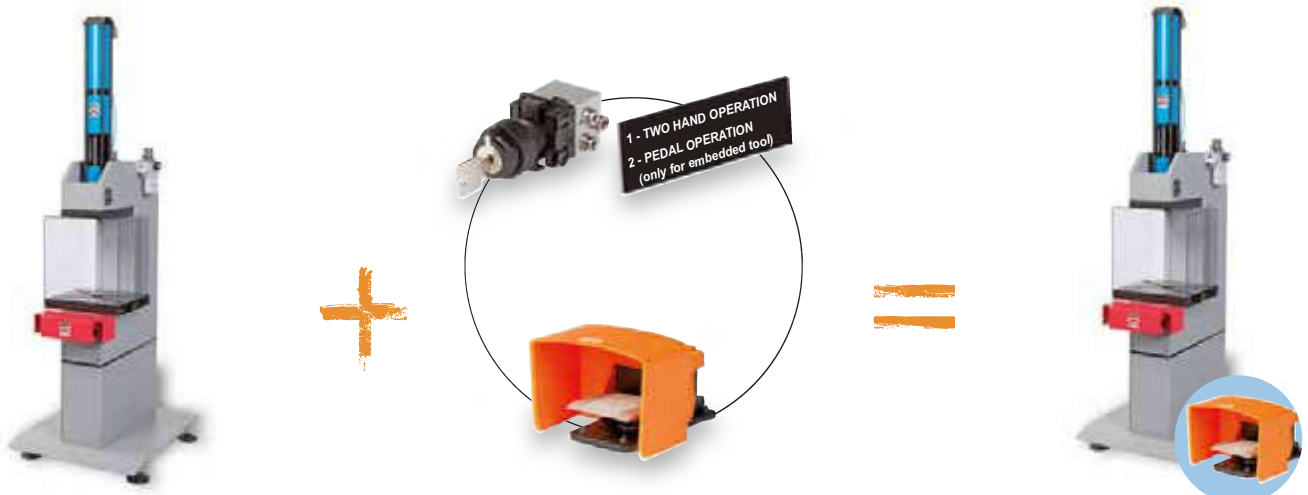


### • Version 3: running condition with two hand or pedal controls

Version 2 + :

- Pedal control for embedded **tool work\***
- 2-position key selector.

*\*Definition: The embedded tools must be intrinsically safe. Their corresponding openings and safety distances must be in compliance with the standards in force or must not exceed 6 mm. Any risk of additional deformation outside the embedded tools must be avoided.*



## > Options

### • Anti-rotation by 2 columns

System of anti-rotation by 2 columns. Attention to the loss of clear height:

- 7 T frame:  
clear height = 265 mm
- 13 T frame:  
clear height = 295 mm
- 30 T frame:  
clear height = 340 mm



### • Additional regulator

Additional regulator allowing working with a pressure from 0.5 to 6 bars.



### • 3% regulator

Power regulator, adjustable from 0.5 to 6 bars with dial pressure gauge ensuring a repetitiveness of the cycle and precision upto 3%.



### • 1% regulator

Power regulator, adjustable from 0.5 to 6 bars with digital pressure gauge ensuring a repetitiveness of the cycle and precision upto 1 %.



### • Counter

5 digit counter with reset function.



### • Exhaust filter

Complete exhaust filter system for reduction in pollution and noise levels (75dB instead of 85).



### • Exhaust restrictor

Press speed regulation by exhaust restrictor.



### • Anvil stakes

Set of 2 anvil stakes for securing the tools in T slots.



### Additional options

- Bottom Dead center timeout, allowing:
  - Stalling the press from 0 to 15s at bottom dead center.
  - Ensuring attainment of bottom dead center thanks to a detection in the last mm.
- Special RAL paint.
- Press locking at bottom dead center by a support on the two hand controls and engaged by an impulse on the two hand control.
- Special services on request (press modifications, small tooling and fitting).

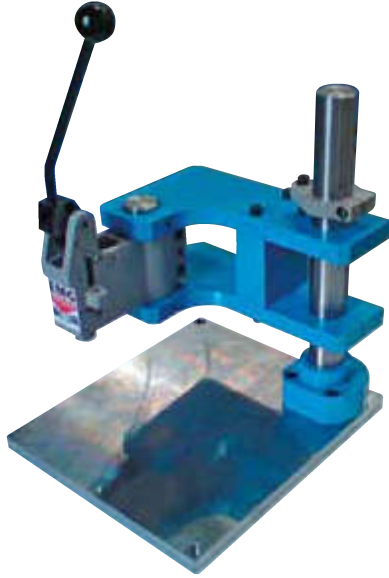




## > Special services

In order to comply with the requirements of specific applications required by some professions, EMG proposes special tailor-made equipments, perfectly adapted to specifications and production constraints.

Thanks to its design department and a pool of more than 40 machines, EMG studies and carries out, on request, modifications or production of special presses as well as small fittings and press tooling.

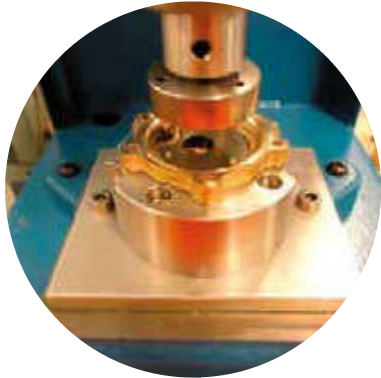
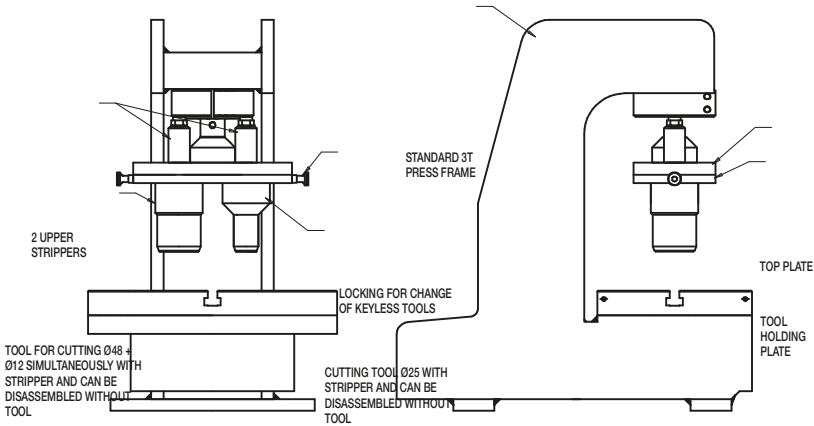


### Offset 7HR press

Offset 7HR toggle press allowing increasing the swan-neck depth and work table.

### Cutting tooling on 3T press

3T pneumatic press with a cutting tooling at 2 positions integrating an upper stripper for separating the parts.



### 3 point crimping tool

6PHR pneumatic press with a crimping tooling of 3 rivets for retaining a steel part in a stainless steel support.



Pneumatic press with electric controlling cabinet.



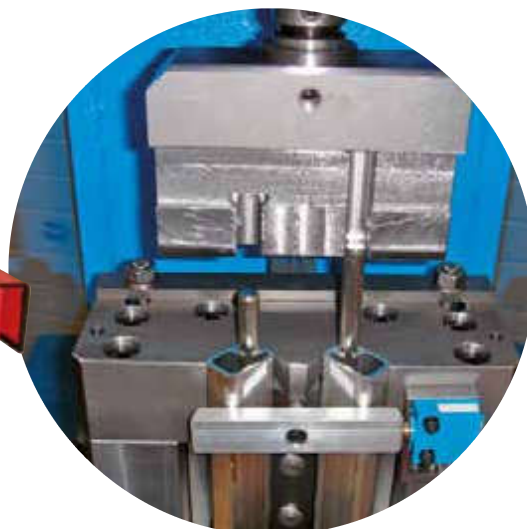
**Press version zinc/nickel plating**

Laboratory press fully zinc-plated and/or nickel-plated.

These treatments are most commonly used in the world of anti-corrosion.

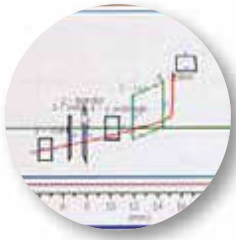


**High-capacity manual rack press 50 HR LP**



**Tooling for fitting shaft in an aluminium profile on press 3t LP**

- Modification of the frame for the passage of profile
- Study and realization of tooling



## > Force management

**EMG offers all types of effort and/or displacement management thanks to force and displacement sensor solutions adapted to each need, for 100% parts control. It is the quality guaranteed by the monitoring of industrial processes:**

- > **Permanent quality control**
- > **Product process control**
- > **Total traceability**
- > **Monitoring the production**

The quality assurance goes through a permanent process check. The EMG presses, equipped with the force and / or displacement sensor allowing production of compliant parts from the start of the production process.

The detection of anomalies is immediate if the requested parameters are not met, the monitoring unit delivers an "OK" or "NOK" message by means of an optical display, a sound signal, or by locking the press in position.

This signal allows the operator to immediately isolate the defected part.

The information is stored in the control unit and can be exported to a PC for analysis, statistics or archiving.

- **Three standard solutions exist in the range.**
- **Specific solutions can be offered according to customer needs.**

*Delivered in a ready to use condition, these systems are available in many versions depending on the complexity of the operations to be controlled and its precision.*

### I. Display of force only

**Description:**

The force control includes a force sensor (accuracy 0.5% of the nominal value) and a force indicator with digital display (50 measures per second).

**Operation:**

The operator activates the control lever of the press and reads the immediate measure.



## II. Force display with maximum value memory and OK NOK indicator

### Description:

The force control includes a force sensor (accuracy 0.5% of the nominal value), a force indicator with 5-digit LCD display (20 measures per second) and a green/red indicator light + buzzer.

### Operation:

The operator activates the press and makes a part.

- If the force value reaches the preset minimum threshold (S1), the green indicator lights up.
- If the force value exceeds the preset maximum threshold (S2), the red indicator lights up and the buzzer sounds
- A reset via a push-button on the front panel resets the last maximum value.



## III. Effort and displacement management

### Description:

The force control includes a force sensor (2% accuracy of the nominal value), a displacement sensor (0.1 mm resolution), a FORCEMASTER process controller (1000 measures per second), OK / NOK indicator and a buzzer.

### Operation:

It is necessary to parameterize the windows through which the curve produced by a typical part must pass (displacement in x, force in y with maximum 9 windows of passage).

As long as the resulting curve passes through the defined windows, the press operates normally and a green light validates each cycle. If during the operation the curve does not pass through one of the predefined windows, the press emits a sound signal (buzzer) and it is possible to set a lock for a pneumatic press. After isolating the bad part, the operator will have to reset the system by pressing a pushbutton and can then continue the production.

