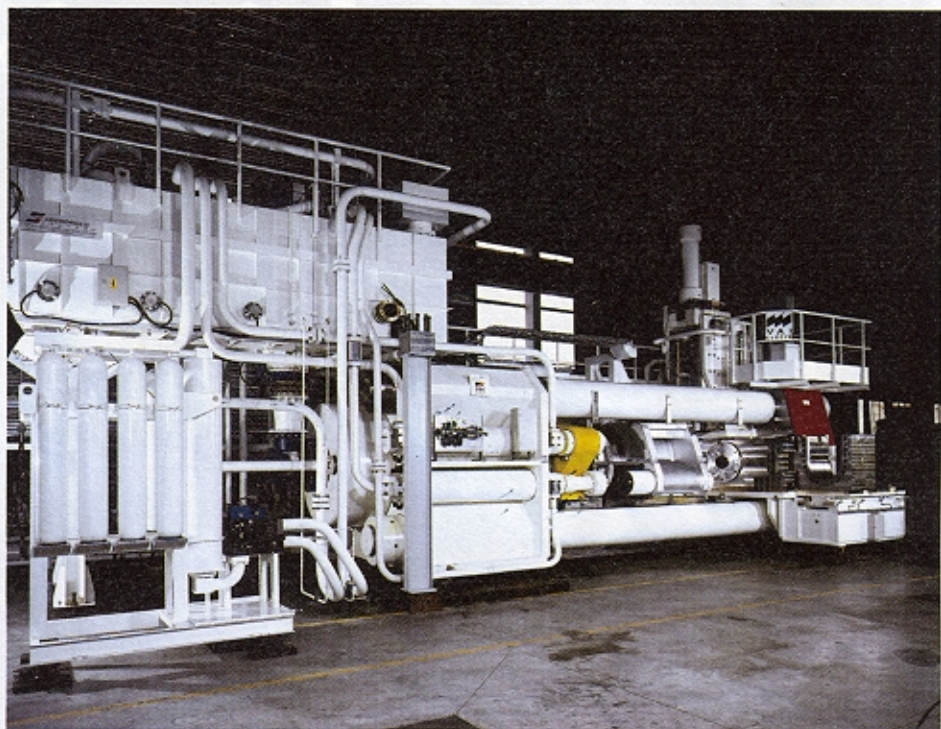


It has taken 25 years for front-loading compact presses to be fully accepted by extruders but now they are the most common type used due to their higher productivity, less maintenance and their ability to clamp multiple billets aligned to the press centreline. VAI Clecim, a member of the VAI Group and inventor of the compact press, presents the results of 25 years of front-loading press developments and innovations.

By Guy Bessey*

Front loading compact presses are now widely accepted by the extrusion industry



The front-loading compact extrusion press comes of age

VAI Clecim has been working for nearly 30 years to implement the advantages of compact extrusion presses and promote their merits to extruders. VAI Clecim believes this technology represents a significant breakthrough, which is of benefit to all users in the field of extrusion presses.

This article presents:

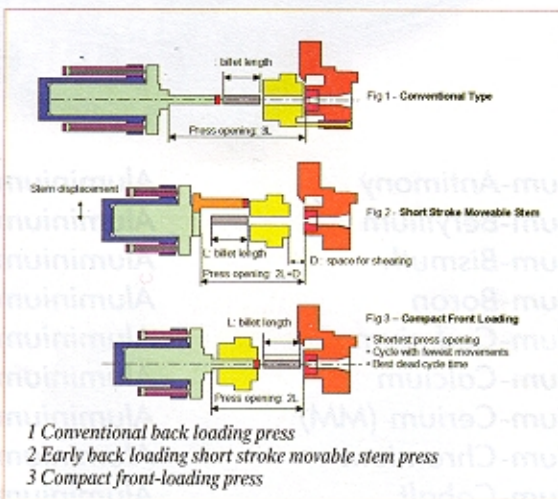
- A brief historical background of this technological route;
- The main advantages of the front-loading compact solution;
- Latest developments proposed;
- Short stroke applied for tube extrusion;
- Conversion of a conventional press to a front loading compact press; and
- Comparison of the different technologies currently used in the market.

HISTORICAL BACKGROUND

Figs 1 to 3 illustrate the evolution of the Compact Extrusion Press from the conventional press (Fig 1), through the first compact short stroke design (Fig 2) to the even shorter Compact Front Loading press of today (Fig 3).

The history of development started 29 years ago.

● 1975: Commissioning of an 850 tonne back loading short stroke press with moveable stem and billet loading on stem side (Fig 2). The results approached those obtained with conventional presses. How-



ever the concept was abandoned.

● 1980: Supply of the first 2200 tonne compact 'short stroke' front loading press with billet loading between container and die (Fig 3). This first generation press was unable to load two-piece billets, precluding the use of billets with a hot shear.

Considering the results achieved, Clecim decided to stop manufacturing long stroke conventional presses although extruders were reluctant to change in a market, which at the time was very conservative. Clecim started a development programme to find a solution for loading two-piece billets into

the compact front-loading press.

● 1984: Commissioning of the first compact 'front loading' press able to load two-piece billets. For the first time, billets were clamped before loading into the container.

● 1988: Some competitors also begin to build 'short stroke' presses with movable stem and loading on the rear side of the container. This technology first appears as a modernisation concept for conventional presses and later implemented on new presses.

● 1999: Competitors launch their first front-loading press on the market after 19 years of investigation.

VAI Clecim extends the concept to direct and indirect copper and brass extrusion presses.

● 2003: Practically all the presses sold in Europe are now 'short stroke' presses. Most of them are 'front loading'.

● 2004: VAI Clecim manufactures a 'front loading' double effect press applying the short stroke technology to tube extrusion for the first time worldwide (Fig 4).

VAI Clecim built the first prototype front-loading press in 1980. Since then, millions of billets of various material properties have been clamped, loaded in the container and extruded.

Other press manufacturers are at last discovering the advantages of this system ▶

* VAI Clecim, France. A member of VAI Group