



→ OUR STRENGTHS

FINANCIAL BENEFITS OF THE PROCESS

With results comparable to those for fine edge blanking, this process offers the following cost reductions for the same machine investment :

- 25% on tooling costs
- 25% on "press impact" added value
- 8% on material consumption.

→ A UNIQUE VIDEO-REMOTE MAINTENANCE SYSTEM

This system is fitted on all our machines and it enables valuable cost savings and reactivity.

RESULTS OBTAINED

Simple and complex shaped part blanking offers substantial advantages compared to conventional blanking and fine blanking.

Qualitative observations show :

- Blanking thick and thin sheets (tests performed up to 8 mm) without defects on the edges (cracks, tears),
- Blanking "soft" and "hard" materials without thermal softening treatments,
- Manufacturing semi-cut parts with a high degree of geometrical and dimensional quality,
- Limited deformation and therefore better cutting angle.

Dry blanking, no need for degreasing parts after blanking.

Comparative measurements taken on parts with complex shapes after fine blanking and adiabatic blanking demonstrate the advantages of this new technique :

- Burr height is reduced and even non existent,
- The roughness (Ra, Rmax, Rm) of the edges is improved,
- Dome height is reduced,
- The thickness of the strain-hardened area is reduced.



Our aims

To develop high speed (adiabatic) cutting and blanking machines to obtain fine blanking quality at a reduced cost.

→ KNOW-HOW

PRINCIPLE OF HIGH SPEED ADIABATIC CUTTING

This physical phenomenon has been known since the 1940's and is the result of high increase in temperature in a very short period ($< 100 \mu\text{s}$) and within a very limited volume of material ($< 100 \mu\text{m}$).

Due to this, the material's ductility is greatly increased (softening) and the amount of heat produced does not have time to exchange with the environment (rest of the part, tools).

This results in a very sharp separation of the blanked product leading to a substantial improvement in its quality when compared to conventional technology. The shearing section is a result of an impact on the moving part of the tool unlike other conventional processes.

→ ACTIVITY

- Research and design of industrial blanking and cutting processes implementing high speed impact technology using the adiabatic softening phenomena
- Research, design and manufacture of hydraulic impact presses and production lines for adiabatic cutting and blanking
- Marketing of processes, machines, specific tools and logistical environments.



PARTNERS

ADIAPRESS uses a network of partner companies and research centres for development, manufacturing, updating, marketing and maintaining its machines. This has allowed it to offer from its very outset the quality of service required by today's industrial environment.

Partner companies :

HYDROPULSOR, DIMECO, MIB Hydro, UF1.

Technical centres and colleges :

CETIM, ENSAM, INSA, ENISE, IWU-FRAUNHOFER, Ecole des Mines, Ecole Centrale de Lyon.

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ADIAPRESS

RESEARCH & SALE
OF ADIABATIC CUTTING
& BLANKING PROCESSES

Head Office

53 rue Scheurer Kestner - F- 42000 Saint-Etienne
Tél. 33 (0)4 77 56 57 68 - Fax 33 (0)4 77 91 44 01 - Website : www.adiapress.com