

## Why wasting energies?

**COMPES DIE HEATING OVEN®** with independent drawers has been designed, developed and patented in order to offer to aluminium extruders an interesting support in the optimisation of heating times and relevant costs. This has been possible thanks to the high level and long-standing know how that Compes gathered in the extrusion sector.



The first oven with vacuum chamber for die heating was patented by Compes at the end of 1988. Since then numerous companies have bought such innovative system, obtaining enormous benefits, either with 800 up to 6,000 t installed presses. There can be no doubt that die heating in a perfectly airtight oven and in an inert atmosphere, without oxygen, offers considerable financial, technical and healthy-environmental advantages.

This oven allows a simplified and independent manipulation of each die, regardless of any other piece being heated at the same time.

### MAIN STRONG POINTS:

By introducing **COMPES DIE HEATING OVEN®** in their company aluminium extruders obtain various benefits, from an operating, hygienic and environmental point of view.

#### 1) SAFETY

Reduction of industrial accidents: the operator is no more forced to stand in front of the open oven to grasp the piece desired. So he can avoid useless heat waves and possible burns to his face or his arms.

#### 2) ERGONOMICS

The operator's physical strain is reduced thanks to the handling on a supporting carriage, allowing to hook the die at an ideal height, with increased ease and speed.

#### 3) PERFORMANCES

The system guarantees an actual saving, easy to be calculated.

The new furnace, designed in a completely different way from the traditional heating furnaces, allows to operate in an inert and controlled atmosphere, that is to say in presence of pure nitrogen and with less than 5 parts per million of oxygen. The intake of inert gas, after washing the chamber under vacuum, is independent in each drawer. This is possible thanks to the perfect sealing of each chamber, connected in an independent way to the vacuum system and the distribution of inert gas.



The die is already resting on a supporting carriage with very low mass, therefore with low heat conductivity and mild thermal radiation. With the independent drawers structure you will save a considerable amount of energy, because the heat that escapes when only one oven chamber is opened is by far lower than the one wasted when opening the cover of a traditional oven.

Rapidity of independent die systems with definitely shorter time in comparison with traditional systems.

The independence of pyrometry between drawers allows to have dies with different temperatures as a function of the type and difficulty of extrusion.

Drastic reduction of die breaking and profile scratching.

Reduction of tests number: since the dies have definite, uniform and optimum temperatures, tests are more realistic and deformities due to imperfect pre-heating are reduced to a minimum.

Fewer rejects during first extrusion: it is no longer necessary to use the first billet in order to make the die temperature uniform.

Possibility to leave the die in the oven also for long periods without meeting the oxidation phenomenon and affecting nitriding.

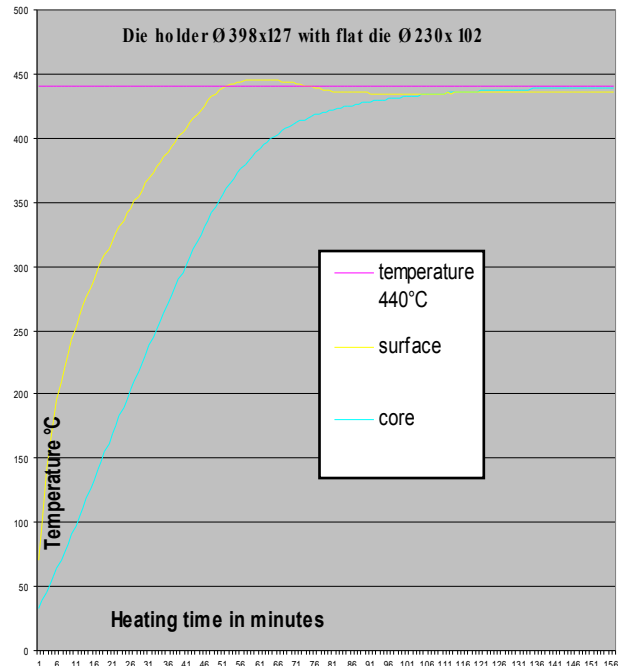
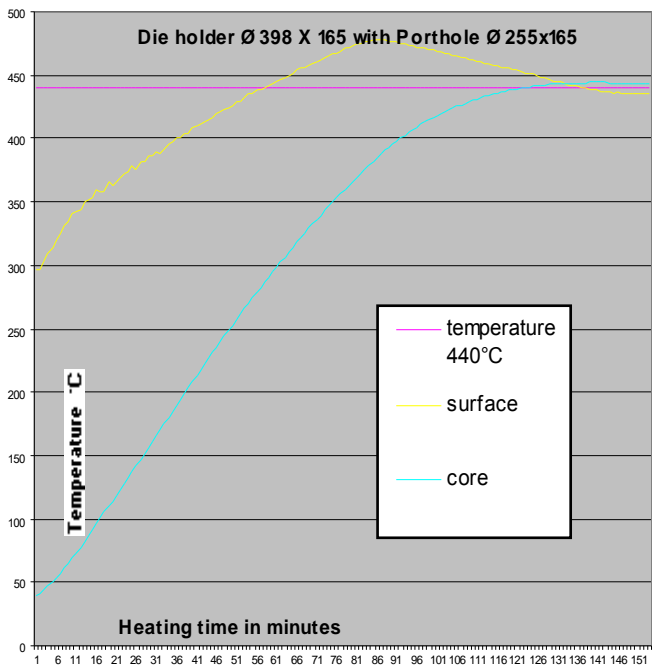
**COMPES DIE HEATING OVEN®** offers safety, easy use and a huge cost saving.

# COMPES DIE HEATING OVEN®: OPERATING INSTRUCTIONS

Each chamber can heat only one die that the operator introduces through the front opening of the drawer, which is moved on side telescopic guides.

The supporting carriage is run by a pneumatic control.

After heating, you simply have to open the drawer and wait until the necessary die moves forward: now it is already time to hook it up and take it to the press.



Performances and consumption of SAPV Model with Ventilation										
Model	Max die dimensions	Heating up power/drawer	Average heating cycle	Temperature uniformity	Consumption per each cycle			Consumption per each supplementary hour without die unloading or with empty oven		
					Kw	Nitrogen (Nm <sup>3</sup> )	Water* (lt/h)	Kw	Nitrogen	Water* (lt/h)
SAPV 32.14.n	345x160	9	100	± 3	13	0,2	70	3	0	70
SAPV 36.17.n	400x200	12	125	± 3	16	0,3	100	4	0	100
SAPV 40.20.n	450x200	17	135	± 3	18	0,3	100	5	0	100
SAPV 45.20.n	490x250	18	160	± 3	20	0,4	120	6	0	120
SAPV 50.24.n	560x260	21	180	± 3	22	0,5	150	7	0	150
SAPV 60.24.n	640x280	24	190	± 3	26	0,7	150	8	0	150

\*In case of a closed circuit there is no water consumption

The oven is available in 6 versions:

- |  |                                  |
|--|----------------------------------|
| 1) SAPV: Vacuum Nitrogen Heating Ventilation | 2) SAP: Vacuum Nitrogen Heating  |
| 3) PAV: Heating Nitrogen Ventilation         | 4) LAP: Washing Nitrogen Heating |
| 5) AV: Air Ventilation                       | 6) AP: Air Heating               |

The use of vacuum allows to reduce nitrogen consumption by about 10 times.

Nitrogen allows to increase the heating speed in comparison with only a vacuum heating.

The use of vacuum and nitrogen at the same time sums up the advantages of both technologies.

Modular structure with separate drawers, with front opening.

The choice of drawers quantity is a function of extruder's needs.

Flexible system, allowing to increase the drawers quantity also later.

Guarantee to obtain the temperature set for each chamber at each die point with a tolerance of ± 3°C.

Perfect sealing of each chamber, obtained by lining the special rubber gaskets, duly cooled.

The system is supplied in compliance with CE standards or alternative ones.

COMPES DIE HEATING OVEN® : a CO.M.P.ES. S.p.A. patent

Compes reserves the right to apply without prior notification any technical modification deemed necessary or as a function of specific requests.

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