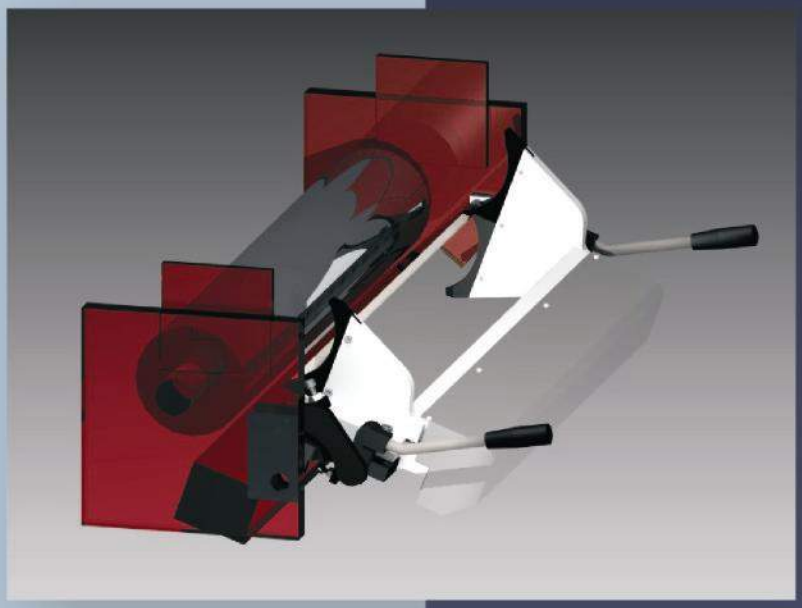


C.D.P.S.

Remote
Ink
Control
System

Caber

Via V.Veneto 15 - 10090 Villarbasse (TO) - ITALY
Tel. & Fax : +39 011 9528573 e-mail: info@cabersrl.net www.cabersrl.net

Caber Color Control

C.D.P.S.

Digital Position System

The ink remote colour control system for web narrow and sheet offset printing machines.

C.D.P.S. acronym of **Digital Position System** is a remote ink colour control system for offset and web printing machines born from the long experience of the CABER s.r.l. in the industrial automation applied to the print field.

The target to provide high throughputs is obtained throught the use of digital position transducers with a microprocessor net configuration associated to totally independent ink regulation zones.
This allows to control **rapidly** and **simultaneously** all ink ad fountains blades connect to the system.

Just one small size shielded cable that connects in parallel every device mounted on the machine is needed. This cable provides the high speed differential (RS485 standard) data line and the power supply (24Vdc). Beside all our systems are thought in order to reduce to minimum the maintenance operation.
All the mechanical part that forms the blades are maintenance free and do not require other intervention than a normal cleanness.

The interface board with the motor is placed directly inside the fountain blade in order to be directly accessible simply opening the cover.
Back up systems are available. In this way the Customer do not risk to loose the saved jobs and if the Personal Computer must be replaced he can easily restart without loosing configuration, zero settings or other system characterizations.

All the Caber systems are standard equipped with remote assistance service that allow us to connect with the machine through a normal internet connection and to execute some special diagnostic software in order to diagnose every kind of problems that can occurs. Beside we can also remote the desktop of the system in our office in order to be able see exactly what the Operator see on the screen and help him to fix the problem or give, if necessary, more explanations.

During the connection all system settings (configuration, zero point and user's ones) are stored in our server.

C.D.P.S.

Remote Ink Control System

High positioning resolution (=0.25 um).

For its particular mechanical design and the special position sensor contained inside the motor, our system is able to reach a resolution of 0.25 **um** on the positioning of the sector. Besides, the system of rescue of backlashes, automatically compensated from the mechanic and the electronic parts, warranties the repetitively of every movement also after many years of functioning.

Independent regulation of every ink zone.

The ink fountain blade is formed by totally independent sectors and each of them is commanded by a positioning device. This makes the system able to have the possibility to obtain a completely open zone next to a completely closed one without any interference between the sectors.
Simply unimaginable with a traditional laser-cutted ink fountain blade.

Core tempered sector.

Differently from other system, the sectors that forms our blades are core tempered.
We choose this kind of treatment to warranty for the blades life time the same hardness even after many years of work. If the sectors were tempered only on their surface, after an initial consumption they loose their hardness characteristic and causes a fast deterioration that leads to frequently zero point adjustments with a consequential lost of productivity and in a short period in a revision of mechanical parts with a waste of money and stop of production .

10mm of total mechanical stroke.

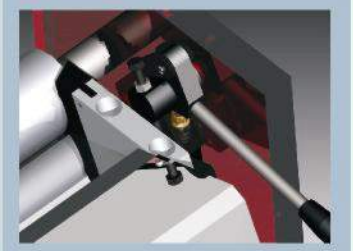
Our system has been studied to satisfy every kind of customer. For that reason we designed the mechanic in order to allow a very big opening capacity of the sectors. Currently the mechanical stroke of our system is 10mm, software limited to 0.5mm for the work area. With this large capability of movement we are able to insure that our blade will never need to be dismounted and repositioned nearest to the ink roller in order to rescue the mechanical stroke.

High speed in regulations.

The electronic part permits to obtain a simultaneous control on all the positioning devices of all the system. This is translated to a high speed of regulation. Beside the speed of out motors joined to the unique mechanical design allows to have the double of movements speed of some other systems with poorest or equal resolution.

Stainless steel surfaces and covers without fixing screws.

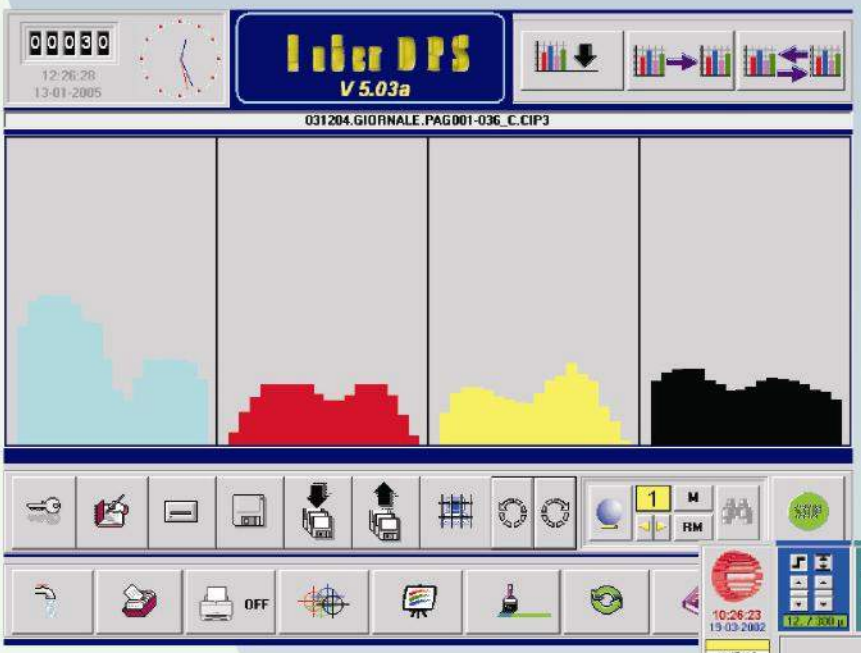
Each aspect of the CDPS system is born and evolved from the direct experience with our Customers. An aspect is the easy cleanness of the duct.
In systems with external screws for fixing the covers the Operators have a lot of difficult to clean completely the ducts and some trace of colour always remains. Beside the solvent use for cleaning damages covers with polycarbonate parts, and after few months they must be replaced or do not warranty the complete insulation from the dirty of the electronic devices.
For these reasons all our blades are build with stainless steel surfaces without any fixing screws.

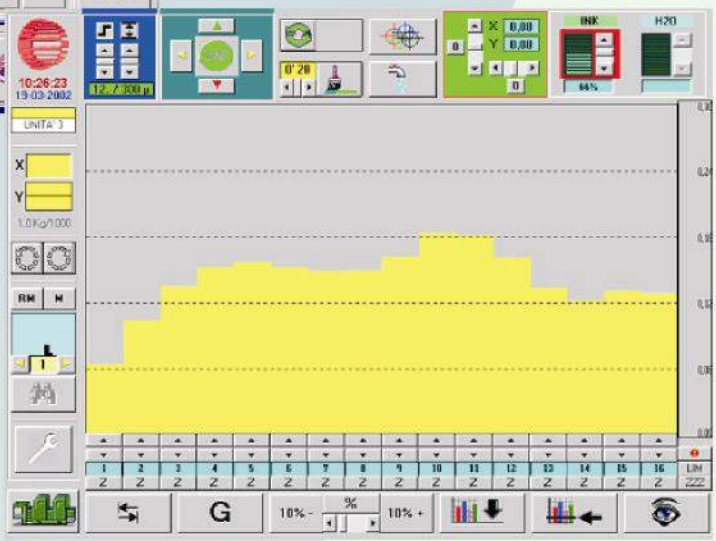


Totally digital system.

The system is totally digital. This means that we do not use potentiometers or other analogic devices to obtain the feedback of the sector position essentially for a couple of reasons:
Reliability: in fact analogic device normally are affected consumption or oxidation of their mechanical parts and high sensibility to the dirty. Beside, for the large number of connections that are necessary, several kind troubles can occurs.
Throughputs: every analogic system is affected by electrical noise and measure errors in values are always done. For sure you cannot have at reasonable cost the same precision (that reflects to mechanical positioning) of a digital system.
In CDPS system we completely eliminates these problems using a sophisticated electronic integrated in the positioning devices that allows to have for each motor the complete control of the position, torque, current, speed in totally digital, and therefore, in the more accurate way possible. The motor is completely hermetical and it warranties a full protection against external agents.
Beside each motor have build inside a self-diagnostic and the possibility to know the residual life of the motor.

The operative interface has designed with special care through an *object-oriented* language, in order to made most instinctive as possible the principal commands and extremely logical the more complex ones. All the potentially risky situations (for example the cancellation of a work from disk) requires precise confirmations from the operator.

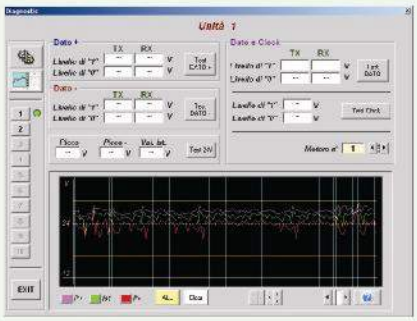


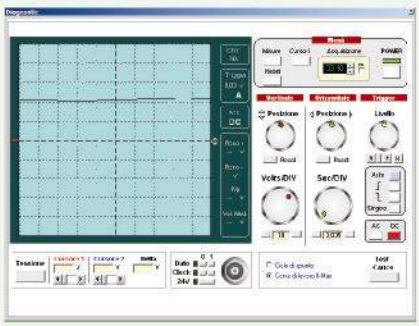


C.D.P.S. main screen and unit regulation window

Possibility to obtain all the software messages in any languages.

We know that sometimes new devices could be a problem for some printers. For this reason our software uses at maximum the capability that a graphical interface permits with icons that represents the functions available.
Currently the CABER DPS main program speaks in nine different languages, but its not a problem add others.





The most sophisticated diagnostic system.

The complexity of the electronic parts and software of CDPS system allows:

- To check continuously, diagram and record the power supply value.
- A scope-mode in order we can check the communication for each blade, the eventual ripple on power supply and the levels of the signals.
- A complete diagnostic system of each motor: in fact they are able to analyse the torque applied on the mechanical part and diagram it on the PC. In this way we can diagnose eventual hardness or trouble on the mechanical part. Beside each motor knows it warrantee residual life.

The software stores in a log file complete of date and time all the operation done and all the messages displayed and all the answer to them from the Operators. In this way we are able to rebuild the history of every system.

Large amount of optionals available.

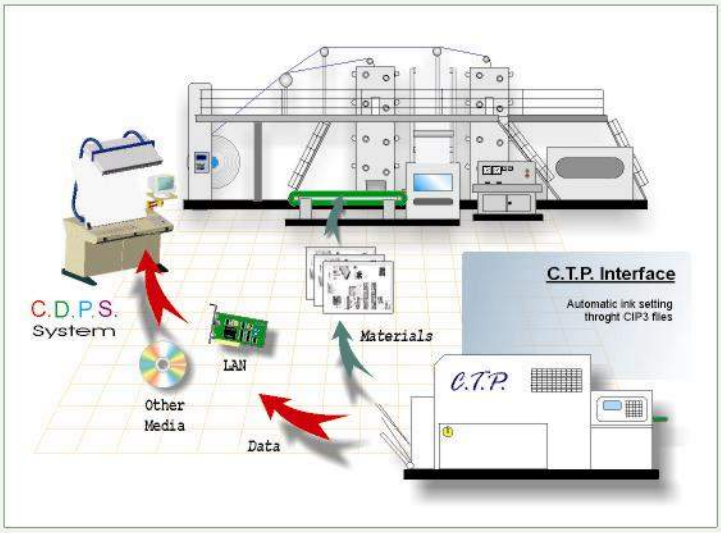
We believe that the maximum of results can be reached when the Operator have a tool that represents an integrated control point that allows him to control and store the settings of more device as possible.
For this reason we develop a large of optionals immediately available and adaptable to each kind of machine that can be controlled by the central unit of the system.

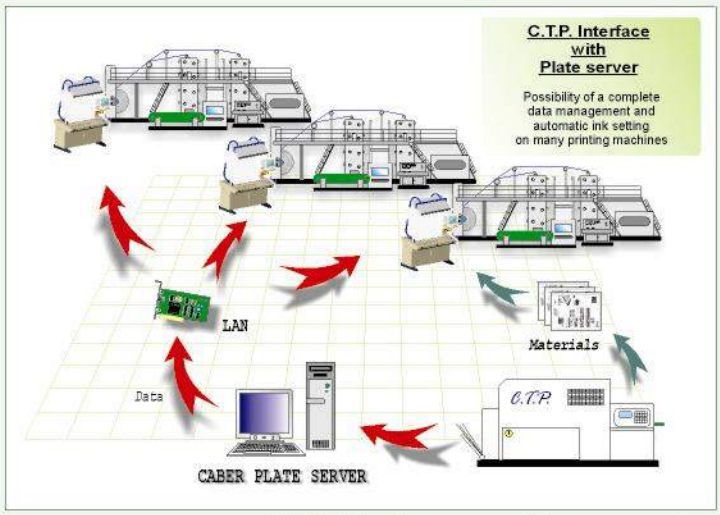
"Open System": possibility to interface of any kind of device.

The modularity of the system and the redundancy of its electronic allows to interface directly or through specific interface developed in short times and low costs any kind of devices on the printing machine in order to accomplish the Customer's demands.
Our devices are completed of the necessary hardware for the firmware on board programming. This means that their can be upgraded by software in order to implement new function that could be necessary in a future.
Beside is not a problem to read output data from other systems on every kind of support they are stored (floppies, CD-Roms, serial connections, etc.).
Every system is also provided with a LAN card in order to be immediately connected to Customer's network.

Possibility of product customerization according Your demands.

We are used to follow our Customer's needs and customaries as much is possible our products in order to satisfies every demands.
For example, we are able to provide different models of control desks, some of the expressly designed for the Customer, or in other case we can provide just the apparatus in order it can be fitted into the control desk of the machine.





CTP interface workflow samples

Optional	Description
P.i.v. INK	Allows to regulate from the main desk the ink roller speed.
P.i.v. H2O	It permits to regulate the quantity of water on the plate.
COMPUTER TO PLATE interface	Through this optional is possible to interface the CDPS system to the CTP (*computer to plate*) devices in order to obtain automatically the right ink profile.
PLATE SCANNER interface	Allows to interface the colour control to the most diffuse plate scanner.
Closed Loop	Possibility to interface the most diffused densitometer devices in order to correct the ink profiles automatically.
Production data management	Allows to check and record the start -up times, productions and stop ones of the machines
Zero in Stop	Closes automatically to zero position all the ink founta in blade ducts The ink profiles are automatically restored at the restart of production.
Teledisplay	Shows in the best graphical way the ink profile of the blade.
Ink Agitators	They warranty the most constant pressure against the ink fountain blade and the best distribution on the product.
Automatic ink charger	It allows to check the quantity of ink in the duct and refurnish it when is necessary. Beside thought its connection to the CDPS system the operator is costively informed about the status of the ink charger.

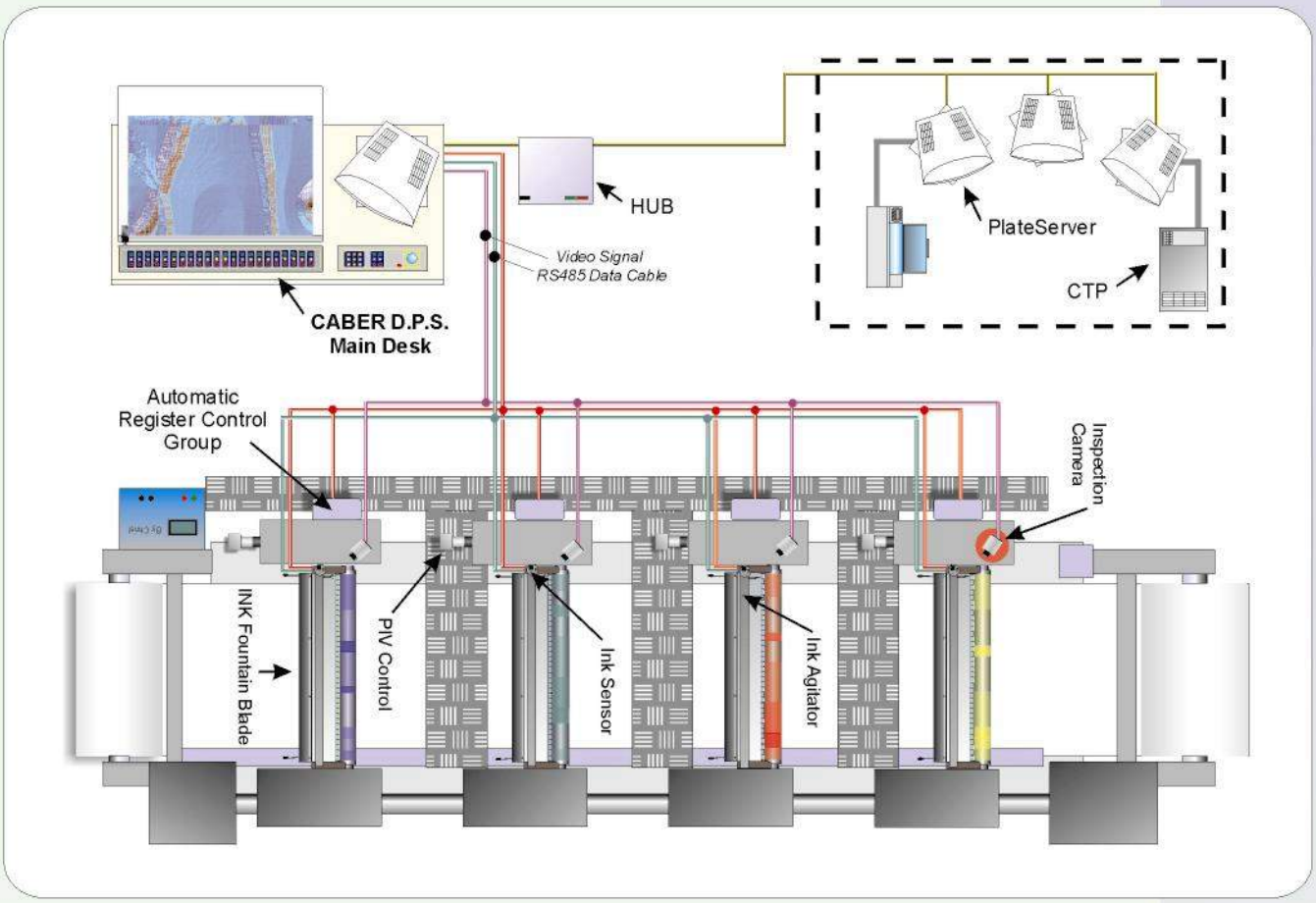
Caber Color Control

Optionals C.D.P.S.

One of our system equipping a Nilpeter machine

Ink fountain blade detail

C.D.P.S. Layout Sample



Our firm born in 1983 from four members: Eng. Franco Bertolé, Eng. Lucia Cagna, Mr.Giovanni Bertolé and Mr. Aldo Cagna. At that time the most important job was hardware and software project for system control and the biggest part of job was performed at the final customer and the products mainly consisted in software and electrical drawings.
In 1989 they bought an office of about 130 sqm. and electronic equipment as to start up a production activity in order to complement project one.
In 1990 the firm began to develop devices to control printing machines and early the first products fully projected and realized by Caber was performed. New technicians were engaged to care the development, realization and installation at the final customer of new products. Meanwhile they continued project activity between which stand out the collaboration with robotic firms to study and develop custom control system.
In 1998 for the rising in production, the firm moved to a new factory of 750sqm., divided into two parts and in a department area connected to them of 310sqm.

The total production area in now of about 10.000 sqm and our devices are actually sold for about 30% in Italy and for the remaining 70% in European community, Russia, United States, Australia and South-East Asia.

Caber

Via V.Veneto 15 - 10090 Villarbasse (TO) - ITALY
Tel. & Fax : +39 011 9528573 e-mail: info@cabersrl.net www.cabersrl.net