What is scanning?

"To scan"

This by now internationally used term describes a process of picking up image information sequentially. Specifically, an original image (diapositive or drawing) is scanned line-by-line opto-electronically. The image is then reproduced on scanner film or stored on a digital data storage.

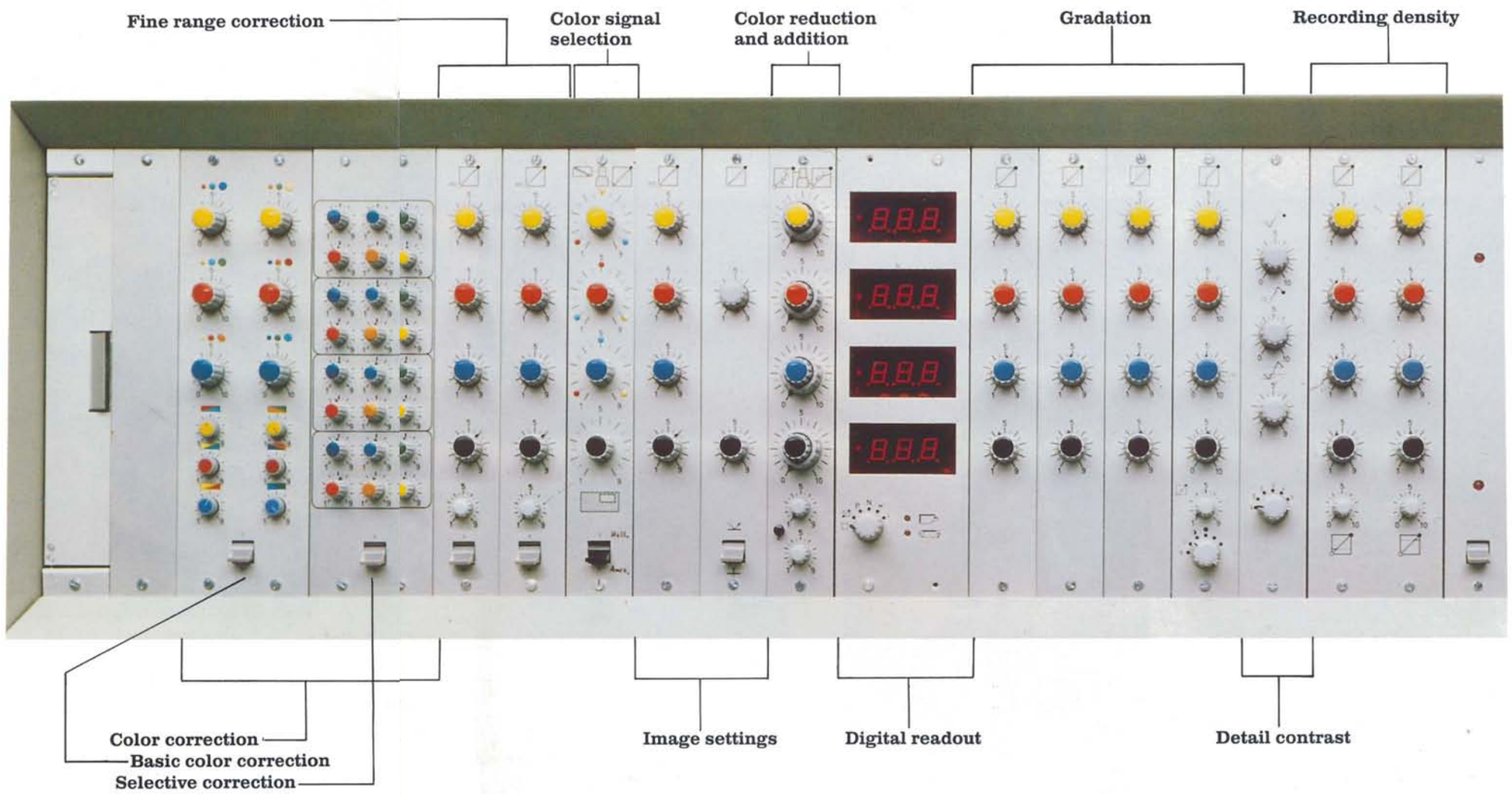
The original is mounted on the scanning drum (up to 1,120 x 1,000 mm) with a tensioning film. A powerful vacuum keeps the original flat against the drum. The scanning head runs along the rotating scanning drum directed by a shaft drive so that the scanning optical system covers the whole drum in a helical path. The total image is divided up into single pixels.

Opto-electronic scanning

Tungsten-halogen sources illuminate the original. The scanning optical system registers the reflected light which is split into its primary components by color separation filters. The signals are electronically amplified and processed in the color computer according to the operating mode required.

Transparency scanning

A transparency scanning unit is employed to scan transparencies up to 640x400 mm (25.2x15.75 inches). The operator can himself switch between the reflection and transparency scanning drums. This involves just a few simple steps.



Digital color signal processing

The digital operations of the Chromagraph CTX 330 cover color identification, the scale computer, electronic cleaning and the electronic system for shrinking and bleeding. The process computer also looks after program-controlled parameter setting, ink quantity measurement, slashing and film linearisation.

Color correction

Three controls match different maximum densities of originals to standard color computer values.

Basic color correction

Six controls provide correction for original and complementary colors.

Selective correction

Six controls for each color separation permit specific color corrections.

Fine range correction

An electronic mask can isolate individual color hues or color areas from the overall pattern and change their color.

Gradation control

For highlights, midtones and shadows there are three controls each which permit independent gradation changes.

Detail contrast

Two controls can enhance detail contrast with continuous adjustment of the starting point and degree.

Color combination

Different colors can be combined in one separation color.

Recording density

The required final densities of the color separations are adjusted by two controls for each separation channel.

Two further controls are situated on the right-hand side of the color computer outside the above figure: **"Circumference adjustment"** and **"Starting point".**

Film recording

For recording on film – which can take place as the original is being scanned – the digitized pattern data are reconverted to analog signals and control the exposure unit.

Depending on the scanner system selected, the films are exposed either by a controlled filament lamp or a laser source. This yields line, continuous tone or half-tone color separation films of the highest quality.