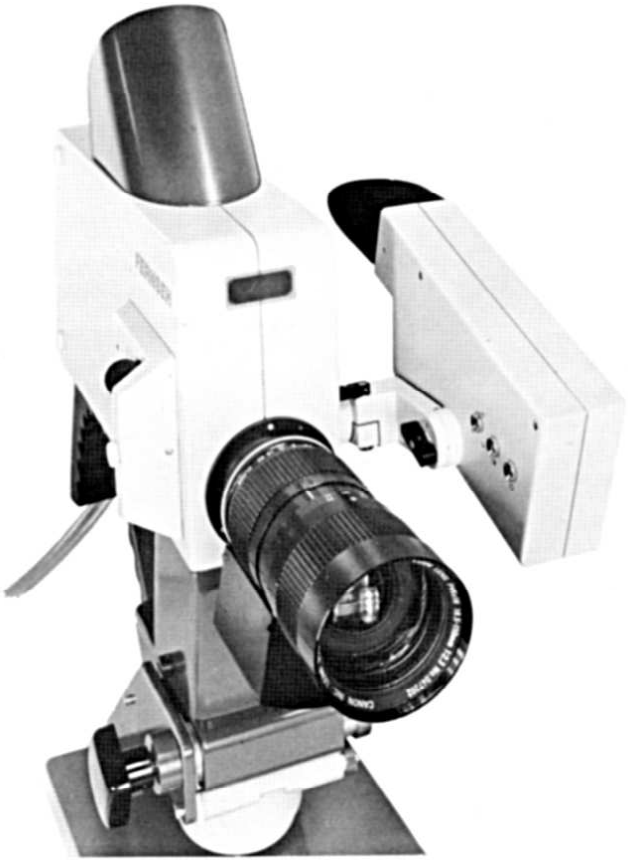
Reporter Colour Camera

KCR 40

BOSCH FERNSEH

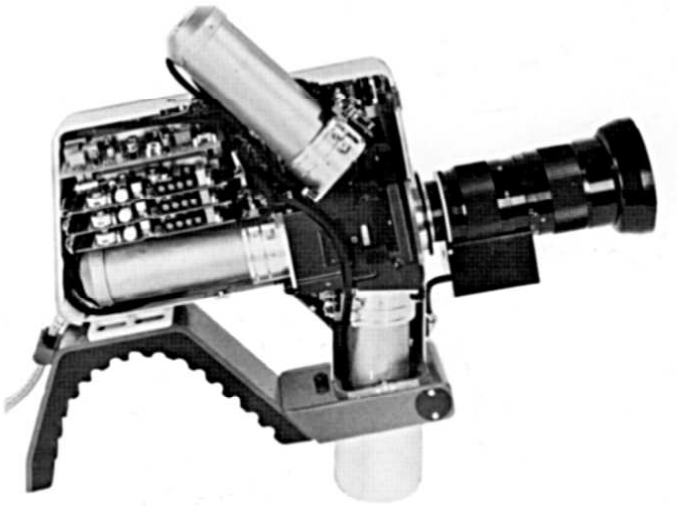
A highly versatile hand-held color TV camera



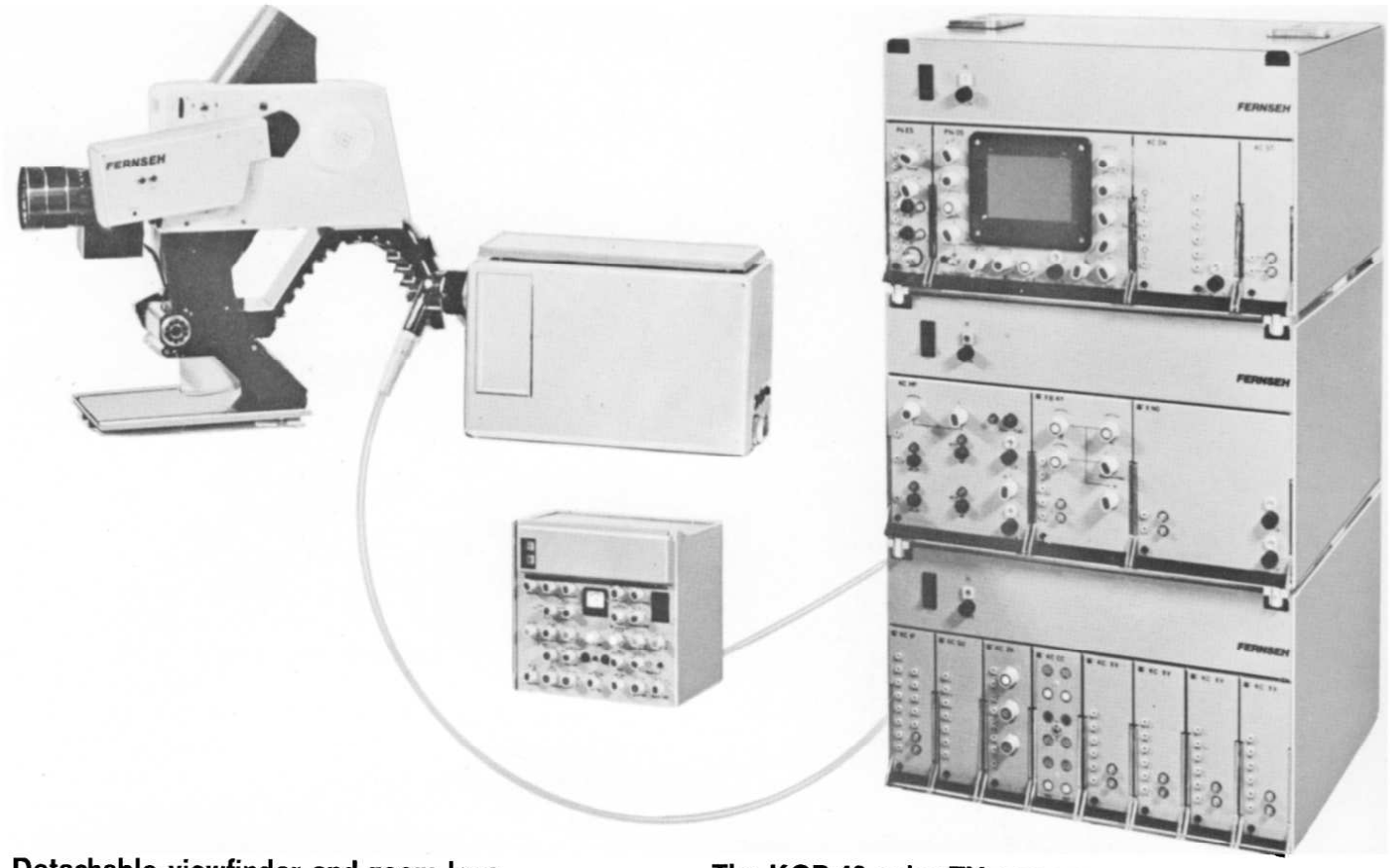
The KCR 40 is ideal for all remote broadcast situations. The camera is designed to produce studio-quality pictures with the ease and flexibility of a hand-held camera. The KCR 40 allows the mobility that before could only be achieved with a movie camera. Now it is possible to record electronically those dynamic situations that would not allow a camera of larger size and less maneuverability to be used.

Outstanding features

- Versatile
- Lightweight
- Great light sensitivity
- High S/N ratio
- Extreme stability



The greatest feature of the KCR 40 is its portability. The advanced design (E. Slany D.I.D.) affords a small size and a compact shape. The camera head fits comfortably on the shoulder. It allows vast freedom of movement in situations where only a hand-held camera can be used. All controls on the camera are conveniently arranged to allow easy operation. No headphones are needed. The headset is built into the side of the camera allowing even more freedom of movement for the cameraman.



Detachable viewfinder and zoom lens
The camera head with lens and viewfinder weigh about the same as a fully loaded 16 mm movie camera. The KCR 40 has a detachable electronic viewfinder. When attached it can be adjusted to different positions. Cue lights are inside the viewfinder hood.
There are several lenses that can be used with the KCR 40. All are easily interchangeable. The zoom and focus are operated manually. The Iris can be locally adjusted by the cameraman using a calibration pulse in the viewfinder or electronically by remote-control.

Wide variety of camera cables
The head and back-pack can be separated with as much as 50 feet of cable. The KCR 40 is compatible with the same type main amplifier as the KCU 40. One-quarter inch cable up to 300 feet or one-half inch cable up to 2500 feet may be used in connecting the back-pack and control unit. A coaxial cable system may be used for special productions such as sporting events.

The KCR 40 color TV camera
The KCR 40 uses three 1" Plumbicon tubes. Special pickup tubes with Anti-Comet Tailing gun and greater Red sensitivity may be used. This camera supplies complete portability to the well-known color camera family made by FERNSEH. With the ability to capture more dynamic and dramatic shots than before, the KCR 40 is compatible with the KCU 40 and has the same outstanding features.

The most versatile of hand-held cameras

The KCR 40 is designed to be adapted to critical customer requirements. The camera system will operate over multi conductor cable from the standard KCU camera electronics or it can operate in a coaxial cable made as pictured here.

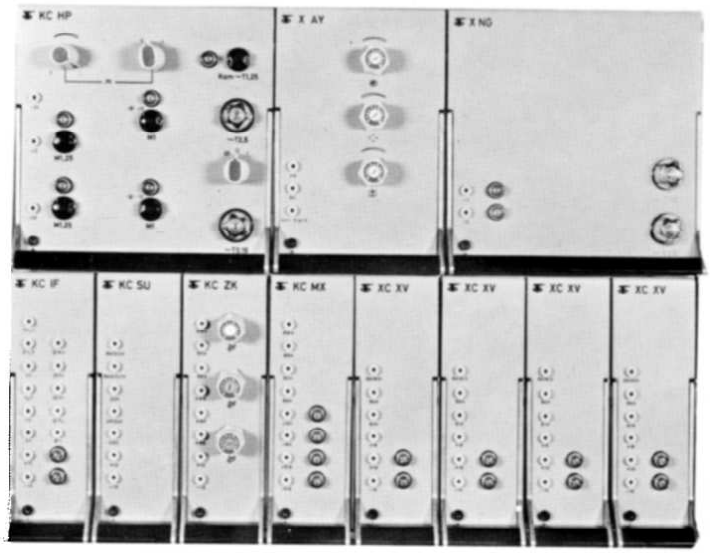
The coax adapter is the lower unit on the back-pack and is connected to the back-pack electronics by a short length of multi-conductor cable and to the CCU by coaxial cable.

There is also a self-contained version wherein the coax cable adapter is replaced by compact processing and synchronizing electronics and a battery pack if required.

It allows colpletely independent operation in conjunction with a portable VTR.

Maximum ease of maintenance due to interchangeable block unit construction

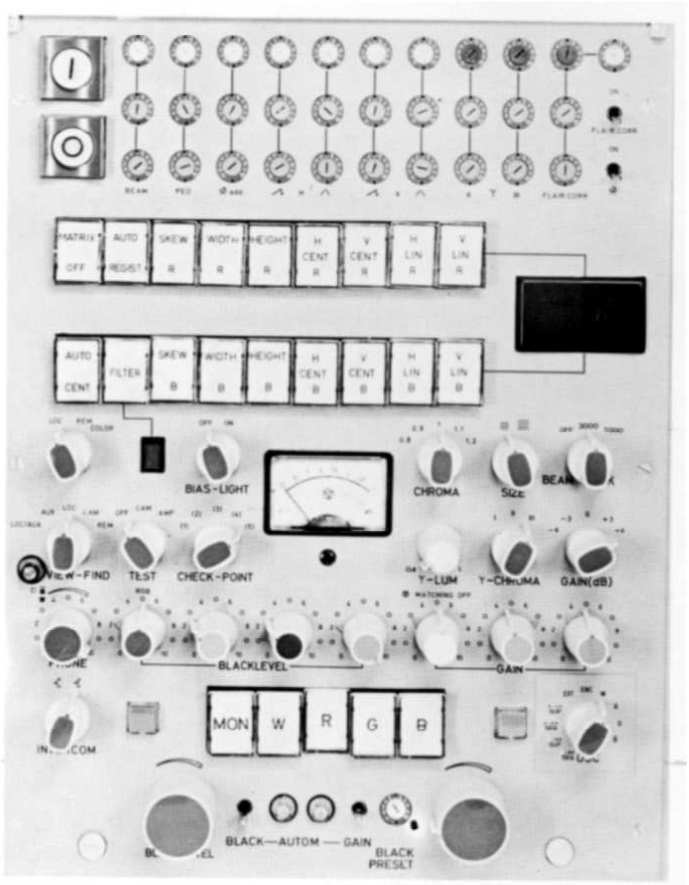
In spite of the **compact and lightweight construction,** maintenance is extremely simplified due to unit layout.
Special emphasis has been played on **easy accessibility** of all the components.
The individual circuits in the form of **plug-in cards** are grouped into plug-in units. They are protected against physical shock by use of mounting plates with printed cable harness, so that good contact ist assured under all conditions.
The **set of amplifier modules** in the color TV camera is of this same proven plug-in unit construction providing optimum performance.



Amplifier set

Compact modular design of the operating control units

The camera controls can be supplied in different versions depending on the particular application of the camera.
In addition to the well-known and proven panel type, a compact type (module) was developed **for use in remote trucks.** It ist thus possible to organize the operating control positions as desired. The main and local operating control units can be placed up to 600 feet away from the central camera position.
It is also possible to combine several operating control units into a **central operating console** for controlling several cameras from one location.



Accessories permit a variety of combinations

The modular construction of the camera permits units to be added or replaced, making possible the adaptation of the camera to a particular application. Depending on the particular use the camera can be modified by a number of accessories satisfying all operational requirements:

Color Comp Unit

The color comp unit opens new perspectives in the field of color picture designing. This unit is readily interchangeable with the linear matrix and permits the color reproduction of the camera to be influenced within certain defined color areas. Hue and saturation of the colors R, G, B, yellow, cyan, magenta can be changed by means of six controls each. Neutral, white or grey picture areas are not affected.

Dark desaturation

The color saturation in the shadows of the picture to be transmitted can be reduced by means of this accessory unit and minor particularly disturbing black level errors reduced to a minimum; these are further possibilities of picture designing.

Aperture corrector

The correction unit uses the comb filter principle in the horizontal and vertical range. The HVC aperture corrector gives particularly sharp pictures without reducing the S/N ratio appreciably.

B/W balance "Autocolor"

When called off, "Autocolor" enables the automatic black and white balance of the amplifiers to be adjusted and thus guarantees optimum colour reproduction, e. g. in the case of electronic conversion of outside broadcasts.

Registration correction unit "Autoregist"

An automatic registration unit "Autoregist" is also available where extremely long-term stability is called for, particularly for fully automatic studios. With the help of a simple test plattern the unit automatically corrects centring, size, linearity and skew both in horizontal and vertical direction. Dynamic correction of the centring function (autocentring) according to picture content is possible during normal operation of the camera. The most disturbing centring errors are thus corrected continually.

Colour camera system

Technical Data

Abmessungen: Dimensions:	Back-Pack Höhe: 230 mm Breite: 400 mm Tiefe: 140 mm		Back pack Height: 230 mm Width: 400 mm Depth: 140 mm	
Gewicht: Weight:	Back Pack 5 kp Kamera ca. 7 kp (mit Varioobjektiv Canon PV 618)		Back pack 5 kg Camera approx. 7 kg (with zoom lens Canon PV 618)	
Stromversorgung: Power Supply:	220 V $^{+5\,\%}_{-10\,\%}$ 50/60 Hz	ca. 650 VA (ohne Monitor und Oszilloskop)	220 V $^{+5\,\%}_{-10\,\%}$ 50/60 Hz	approx. 650 VA (without monitor and oscilloscope)
Fernsehnorm: TV-Standard:	625 Zeilen, 50 Hz, CCIR-Norm Auf Wunsch auch für US-Norm (525 Zeilen/60 Hz/117 V)		625 lines, 50 Hz, CCIR standard. Can also be supplied for U.S. standard (525 lines/60 Hz/117 V)	
Eingänge: Inputs:	1 x Austastsignal (A) 1 x Synchronsignal (S)	$-4\ V_{ss} \pm 30\,\%$ an 75 Ω (Durchschleiffilter) Rückflußdämpfung > 30 dB bis 4 MHz	1 x Blanking signal (A) 1 x Sync. signal (S)	$-4\ V_{pp} \pm 30\,\%$ at 75 Ω (loop-through filter) Return loss > 30 dB up to 4 MHz
	1 x Testsignal 1 x BAS-Signal (Ext. 1/Ext. 2)	z.B. Gittersignal Externes Suchersignal	1 x Test signal 1 x Composite signal (BAS) (ext. 1/ext. 2)	e.g. grid pattern signal External finder signal
Ausgänge: Outputs: Pro Kanal (Y, R, G, B) Per channel (Y, R, G, B)	2 x Bildsignal mit Austastung (BA) (mit matching-Korrektor)	0,7 V_{ss} (BA) an 75 Ω	2 x non-composite signal (BA) (with color matching)	0.7 V_{pp} at 75 Ω
* Frequenzgang-abweichung: Frequency Response:	Luminanzkanal Rotkanal Blaukanal	Bis 5 MHz ± 0,5 dB, bis 7 MHz − 1 dB Bis 3 MHz − 1 dB Bis 3 MHz − 4 dB	Luminance channel Red channel Blue channel	± 0.5 dB up to 5 MHz −1 dB up to 7 MHz −1 dB up to 3 MHz −4 dB up to 3 MHz
Impulsverhalten: Pulse Response:	50 Hz 15,6/250 kHz	⩽ 2 % ⩽ 1 %	50 Hz 15.6/250 kHz	⩽ 2 % ⩽ 1 %
* Verstärkerlinearität: Differential Gain:		⩾ 0,94		⩾ 0.94
Verstärkungs-regelung: Gain Control:	Feinregelung in allen Kanälen Grobregelung in 5 Stufen	± 40 % −6 dB, −3 dB, 0 dB, +3 dB, +6 dB	Fine-tuning control for each channel Coarse-tuning control in 5 steps	± 40 % −6 dB, −3 dB, 0 dB, +3 dB, +6 dB
Schwarzwert-regelung: Black-level Adjustment:	Getrennte Regelung in den Kanälen (Luminanz, Rot, Grün, Blau) Gemeinsame Regelung für Rot, Grün, Blau	−30 % +20 % bei γ = 1 ± 5 % bei γ = 1	Separate control for adjustment of each channel (Y, R, G, B) Master control for adjustment of R, G, B	−30 % +20 % at γ = 1 ± 5 % at γ = 1
Empfindlichkeit: Sensitivity:	Bei 750 Lux, Reflexionsfaktor für Weiß = 60 %, Farbtemperatur 3000 K	Blende 2,8	Reflection coefficient for white = 60 % at 750 lux Color temperature 3000 K	Aperture 2.8
Auflösung: Resolution:	Modulationstiefe bei Übertragung eines 5-MHz-Strichrasters	ohne Aperturkorrektur entspr. Auflösung der Plumbicon®-Röhren: > 30 % mit Aperturkorrektur: einstellbar 100 %	Depth of modulation when transmitting a 5 MHz bar pattern	without aperture correction corresp. to resolution of the Plumbicon® tubes: > 30 % with aperture correction: adjustable 100 %
Störabstand: Signal to Noise Ratio:	Gemessen bei γ = 1 und 40 % Pegel, mit der oben definierten Empfindlichkeit und Auflösung	⩾ 45 dB, unbewertet	Measured at γ = 1 and 40 % level, sensitivity and resolution as stated above	⩾ 45 dB, unweighted
Deckungs-genauigkeit: Registration Accuracy:	Innerhalb eines Kreises mit einem Durchmesser vom 0,9-fachen der Bildhöhe	⩽ 40 nsec Abweichungen	Within a circle having a diameter of 0.9 times the picture height	⩽ 40 nsec deviations
Rastergeometrie: Raster Geometry:	Abweichungen ohne Berücksichtigung der Fehler des Objektivs	⩽ ± 0,5 % (Zone 1)	Deviations without taking into account faults of lens	⩽ ± 0.5 % (zone 1)
Umgebungs-temperatur: Ambient Temperature:	Zulässige Umgebungstemperatur (bedingt durch die maximal zulässige Temperatur der Plumbicon®-Röhren	−20° C bis +45° C	Permissible ambient temperature (determined by maximum permissible temperature of the Plumbicon® tubes)	−20° to +45° C
Stabilität: Stability:	Keine störende Änderung der Übertragungseigenschaften für Bereiche von jeweils ± 10° C	Farbdeckung und Farbanpassung bleiben dabei mit solcher Genauigkeit erhalten, daß unter normalen Studiobedingungen kein Nachjustieren erforderlich ist.	No disturbing alteration of the transfer characteristics over the range of ± 10° C anywhere	Color registration and color matching are maintained with such accuracy that under normal studio conditions no readjustment is required.

* ohne Aperturkassette
without aperture unit

Technische Änderungen im Zuge der Weiterentwicklung vorbehalten
Liable to technical alterations in the course of further development

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