

Reporter Colour Camera



KRGER 440

BOSCH FERNSEH



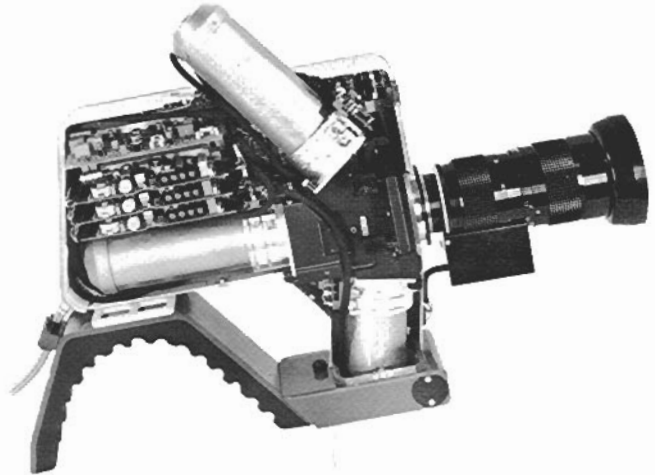
A highly versatile hand-held color TV camera



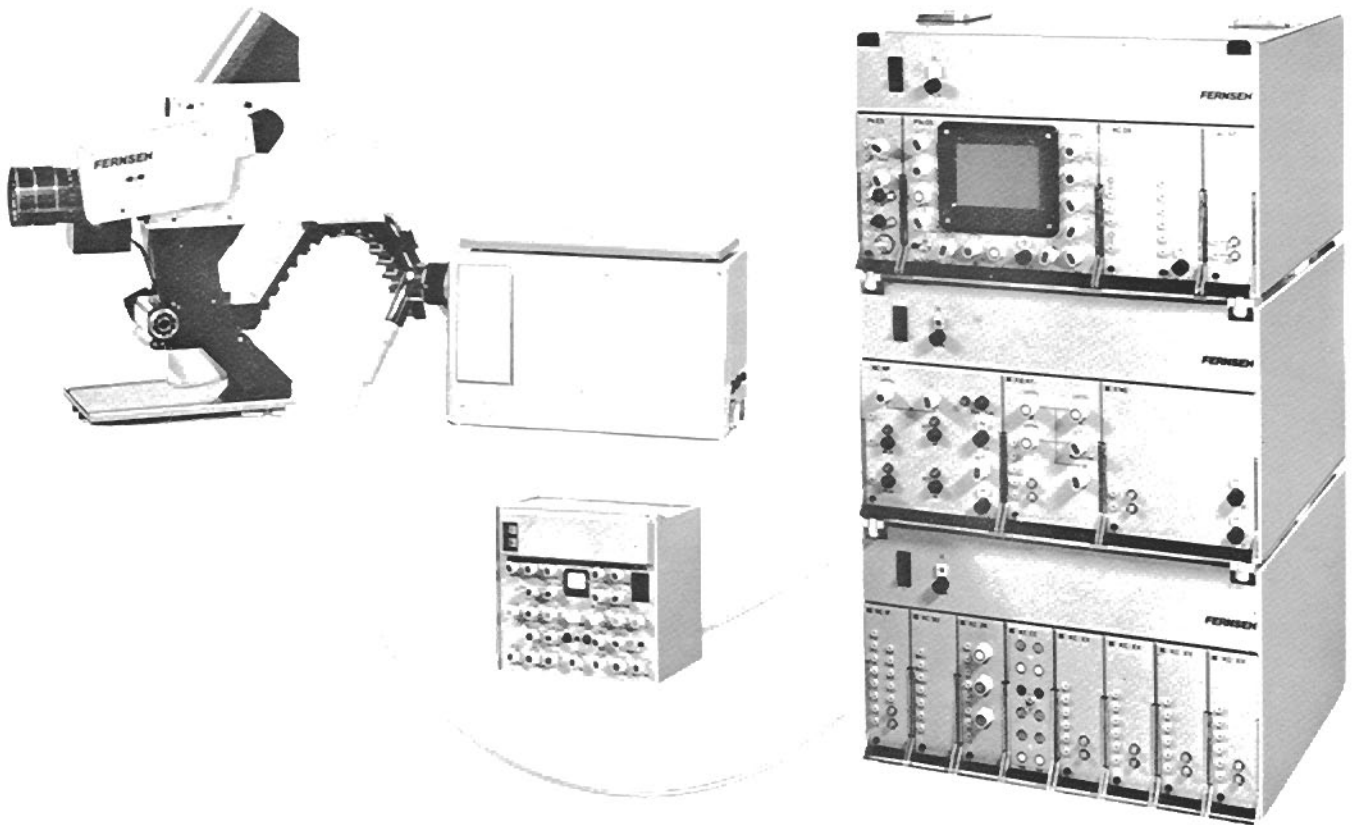
The KCR 40 is ideal for all remote broadcast situations. The camera is designed to produce studio-quality pictures with the ease and flexibility of a hand-held camera. The KCR 40 allows the mobility that before could only be achieved with a movie camera. Now it is possible to record electronically those 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 completely independent operation in conjunction with a portable VTR.

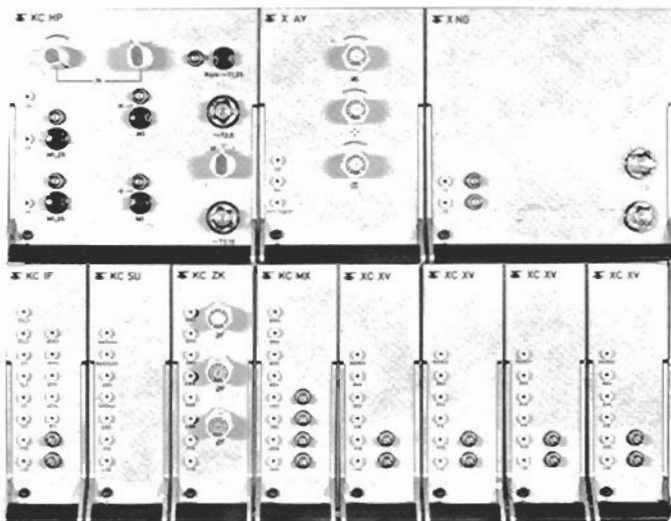
Maximum ease of maintenance due to interchangeable block unit construction

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 is 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.



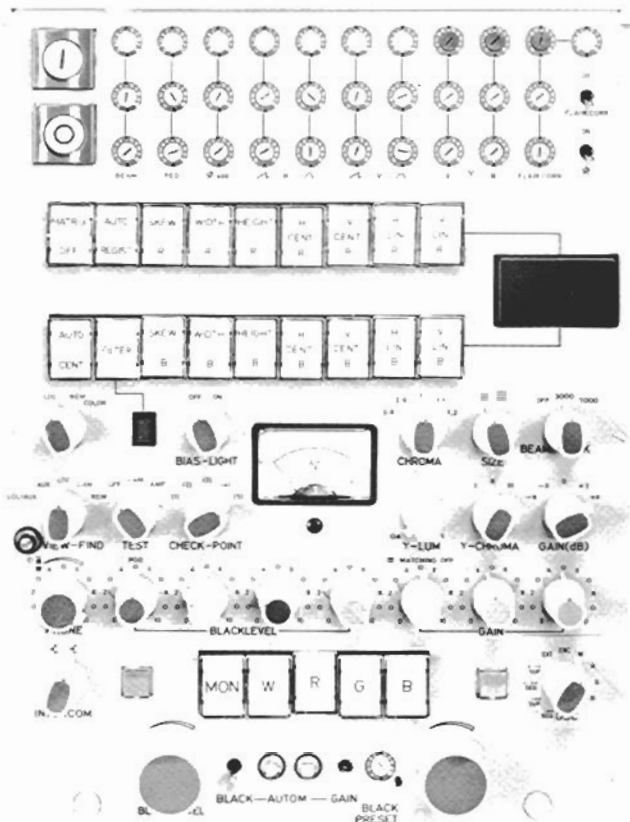
Amplifier set

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 is 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 kg
 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 \pm 5%
 -10% 50/60 Hz

ca. 650 VA
 (ohne Monitor und Oszilloskop)

220 V \pm 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)

$-4 V_{pp} \pm 30\%$ 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:

2 x Bildsignal mit Austastung (BA)
 (mit matching-Korrektor)
 Pro Kanal (Y, R, G, B)
 Per channel (Y, R, G, B)

0,7 V_{pp} (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 \pm 0,5 dB,
 bis 7 MHz -1 dB
 Bis 3 MHz -1 dB
 Bis 3 MHz -4 dB

Luminance channel
 Red channel
 Blue channel

\pm 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

$\leq 2\%$
 $\leq 1\%$

50 Hz
 15,6/250 kHz

$\leq 2\%$
 $\leq 1\%$

* Verstärkerlinearität: Differential Gain:

Verstärkungs- regelung:

Feinregelung in allen Kanälen
 Grobregelung in 5 Stufen

$\pm 40\%$
 -6 dB, -3 dB, 0 dB, $+3$ dB, $+6$ dB

Fine-tuning control for each
 channel
 Coarse-tuning control in 5 steps

$\pm 40\%$
 -6 dB, -3 dB, 0 dB, $+3$ dB, $+6$ dB

Schwarzwert- regelung:

Getrennte Regelung in den Kanälen
 (Luminanz, Rot, Grün, Blau)

$-30\% \pm 20\%$ bei $\gamma = 1$

Separate control for adjustment
 of each channel (Y, R, G, B)

$-30\% \pm 20\%$ at $\gamma = 1$

Black-level Adjustment:

Gemeinsame Regelung für
 Rot, Grün, Blau

$\pm 5\%$ bei $\gamma = 1$

Master control for adjustment of
 R, G, B

$\pm 5\%$ at $\gamma = 1$

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%

≥ 45 dB, unbewertet
 ≥ 45 dB, unweighted

Storabstand: Signal to Noise Ratio:

Gemessen bei $\gamma = 1$ und 40%
 Pegel, mit der oben definierten
 Empfindlichkeit und Auflösung

≥ 45 dB, unbewertet

Measured at $\gamma = 1$ 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 Berücksich-
 tigung der Fehler des Objektivs

$\leq \pm 0,5\%$ (Zone 1)

Deviations without taking into
 account faults of lens

$\leq \pm 0,5\%$ (zone 1)

Umgebungs- temperatur: Ambient Temperature:

Zulässige Umgebungstemperatur
 (bedingt durch die maximal zu-
 lassige Temperatur der Plumbi-
 con[®]-Röhren)

-20° C bis $+45^\circ$ C

Permissible ambient temperature
 (determined by maximum permis-
 sible temperature of the
 Plumbicon[®] tubes)

-20° to $+45^\circ$ C

Stabilität: Stability:

Keine störende Änderung der
 Übertragungseigenschaften für
 Bereiche von jeweils $\pm 10^\circ$ C

Farbdeckung und Farbanpas-
 sung 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 $\pm 10^\circ$ 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

BOSCH

FERNSEH

ROBERT BOSCH
 FERNSEHANLAGEN GMBH

D-61 Darmstadt
 W-Germany

WEB 5/73