Broadcast Television Camera Equipment
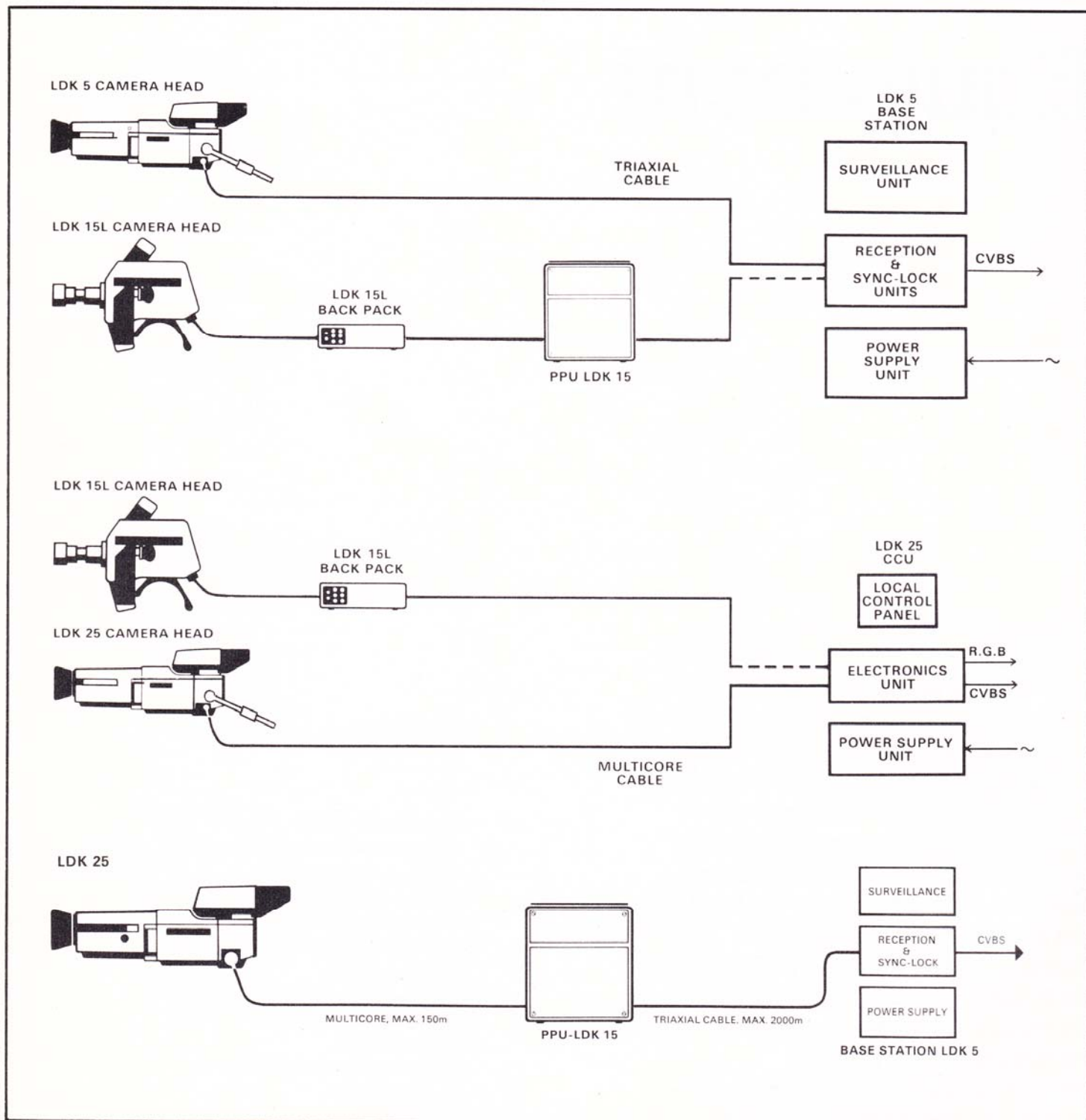
LDK 5
LDK 25
LDK 15L
LDK 65
LDK 2
LDK 14

Broadcast Television Camera Equipment

This catalogue details the Philips
range of professional Broadcast Television
camera equipment and ancillaries.
As well as describing new facilities
for the established cameras, the catalogue
introduces three important additions to the
range, a lightweight portable production
camera and a telecine camera, both fully
compatible with the LDK5 studio cameras,
and a new ENG/EFP portable - the LDK14.
Full technical details of the products
described are available from Pye TVT Limited,
the Broadcast Company of Philips from
it's offices in Cambridge, Eindhoven in
the Netherlands, and also from
Philips Broadcast Equipment Corporation
of Mahwah, New Jersey in the U.S.A.

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LDK 25

MULTICORE, MAX. 150m

PPU-LDK 15

TRIAXIAL CABLE. MAX. 2000m

SURVEILLANCE

RECEPTION & SYNC-LOCK — CVBS

POWER SUPPLY

BASE STATION LDK 5

Triax Camera LDK5

LDK 0005/00
PLUMBICON COLOUR TELEVISION CAMERA

Digitally controlled colour television camera for studio and outside broadcast use, employing 1-inch ACT (anti-comet tail) Plumbicon © tubes with internal bias light conductor. The camera contains all the video processing circuitry and can be equipped with a set of system-dependent modules LDK 4320 to provide a PAL, PAL M, NTSC, or SECAM coded output signal. All signals conveyed between the camera and the associated base station are modulated on HF carrier waves, which are frequency multiplexed for two-way transmission over a single coaxial conductor. Coaxial, triaxial, multicore and RF modes of operation can be used. Sync-locking is to the studio timing reference, which may be a CVBS or 'colour black' signal, or separate sync, sub-carrier (and PAL identification signals). The digital control system with memory in the camera has a relatively low data rate (2400 Baud), enabling transmission over telephone lines. Only changes in control settings are transmitted from base station to camera. Separate transmission paths may be used for camera and control signals. The associated base station occupies only one-and-a-half 19 inch rack holders. Its subassemblies are self-contained and can be arranged together or separately in accordance with local studio requirements.

LDK 4300/00
RECEPTION UNIT OF LDK 5 BASE STATION

Self-contained unit of half 19 inch rack width, consisting of an interconnection part, a 'power supply' and an 'audio' module, and wired to take the system-dependent 'multiplexer' and 'video out' modules LDK 4321 and the sync-lock unit LDK 4322. It can be mounted together with the LDK 4315 camera power supply unit of the base station into a 19 inch rack holder, or arranged separately in a half 19 inch rack holder or cabinet.
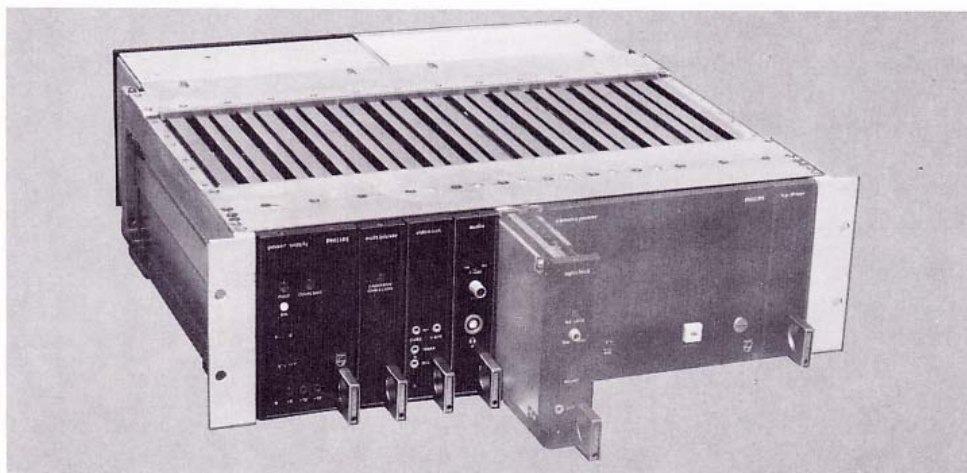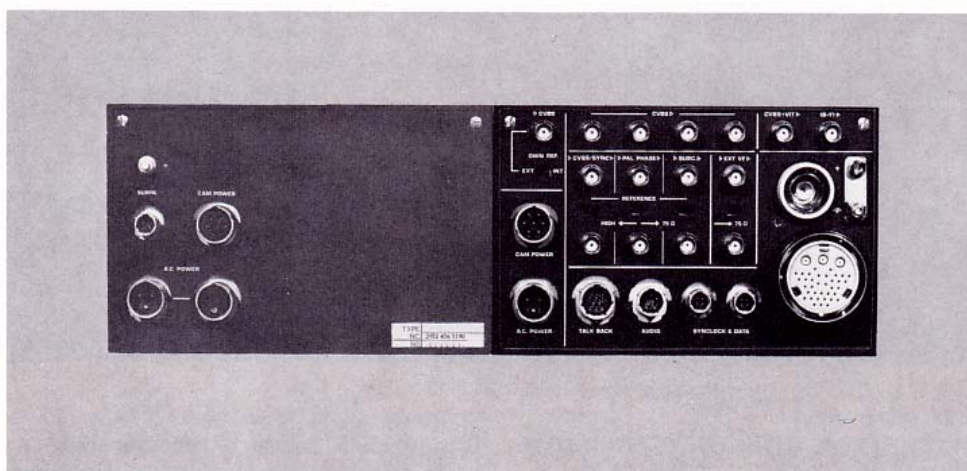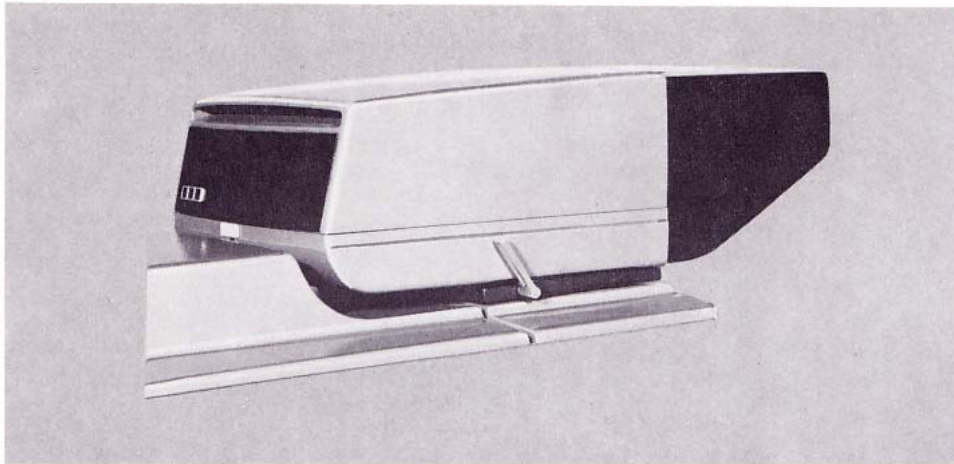
Technical Data
Power consumption: 65 VA
Weight: 9·5 kg (21 lb) (complete unit)
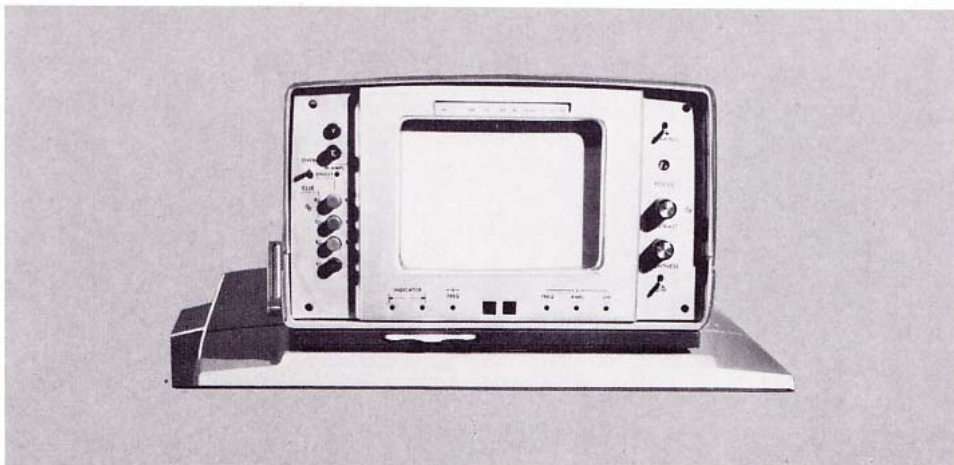Type no. of interconnection unit only:
8993 530 47021

LDK 4305/00
ELECTRONIC VIEWFINDER

The viewfinder for the LDK 5 colour camera is built into a magnesium alloy cast housing. It employs a picture tube, type M17-141W, of 7 inch screen diagonal. Display selection is provided for R, G, B, Y, EXT and TEST signals in single, overlay and CLUE modes. The viewfinder can be tilted over a range of 90°, rotated over 360°, and easily removed. A handgrip is incorporated in the viewfinder hood. A light strobe at the top of the picture screen indicates the zoom position of the camera lens. This viewfinder is used for the LDK 0025/01 multicore camera.

Technical data
Power consumption: 25 VA
High brightness: 250 ft Lambert
Linearity error: maximum 0·5%
Geometry error: maximum 1%
Weight: 8·5 kg (18·7 lb)

Technical data
Power consumption: 45 VA
Weight: 8·1 kg (18 lb)
Type no. for interconnection unit only: 8993 530 47011

LDK 4310/00
SURVEILLANCE UNIT OF LDK 5 BASE STATION

Self-contained unit of half 19 inch rack width, housing one module with the base station part of the digital control system. The camera operational controls are arranged on the module front panel. Remote operational control units for painting and iris and master black level adjustment can be connected to this unit.
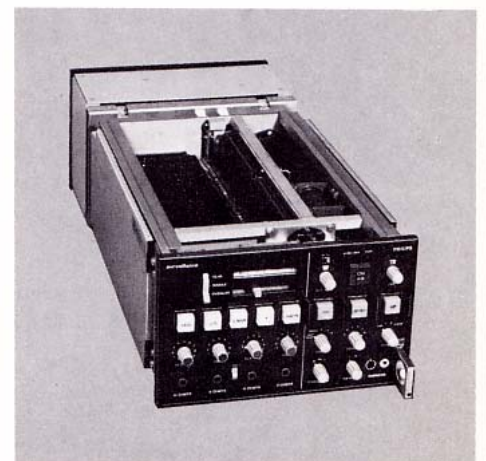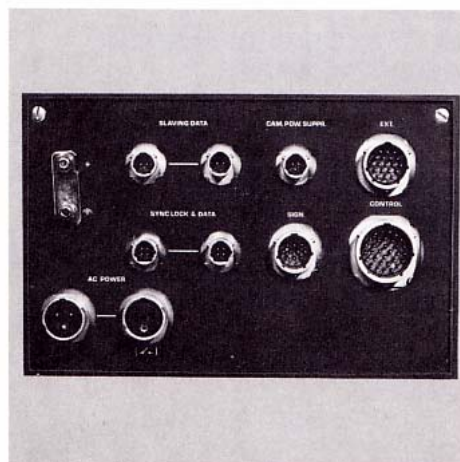
LDK 4315/00
CAMERA POWER SUPPLY UNIT OF
LDK 5 BASE STATION

Unit of half 19 inch rack width containing
two modules, one housing the driving
and control circuits, the other the a.c.
rectifying stage. It supplies a 100 V d.c.
line voltage, on which the camera and
viewfinder operate. The unit is arranged
in or near the base station position in the
triaxial and multicore cable modes of
operation, and near the camera position
in the coaxial and RF modes.

Technical data
Power consumption: 370 VA
Weight: 17 kg (37·5 lb)
Type no. for interconnection unit only:
8995 530 47031
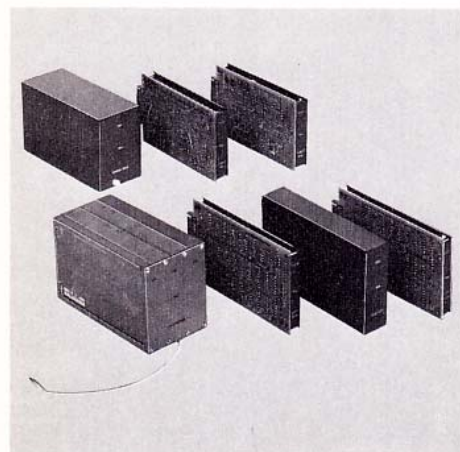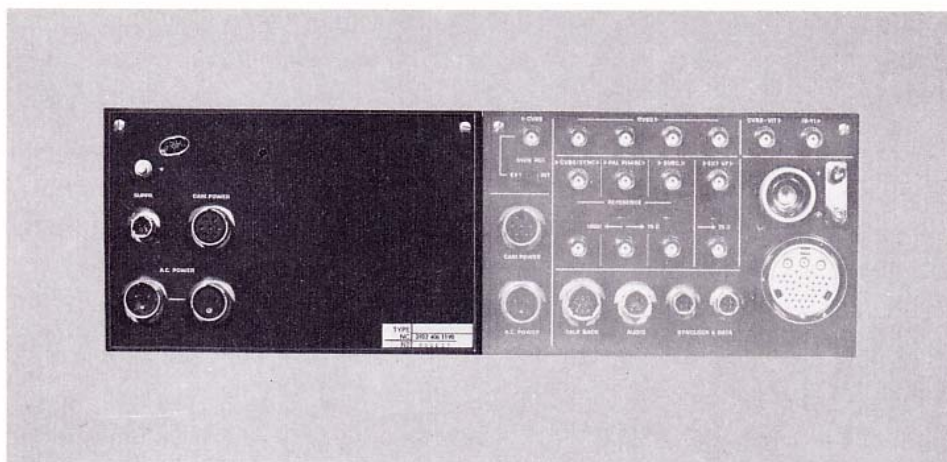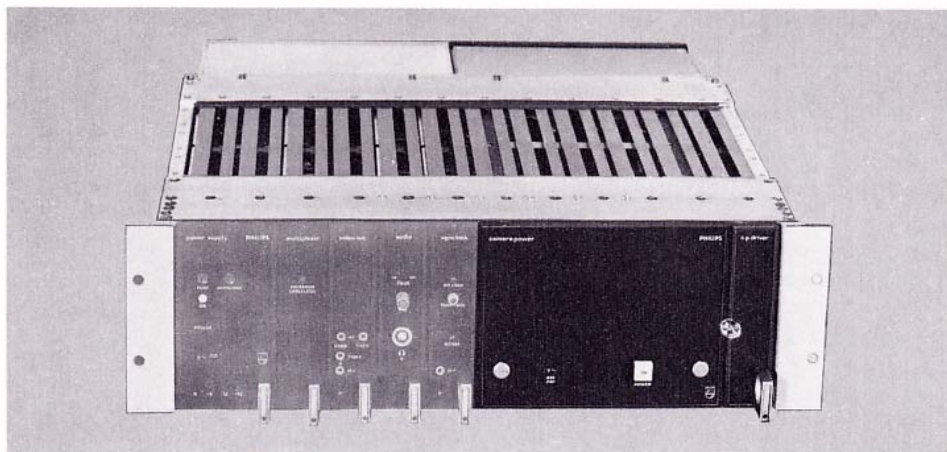
LDK 4320
SET OF SYSTEM-DEPENDENT
CAMERA MODULES

This set of seven modules, which is
available in the four versions below,
enables the operation of the LDK 5 colour
camera in accordance with the PAL,
NTSC, PAL M and SECAM systems. It
comprises the following modules:
'Contour delay', 'coder in', 'coder
modulator', 'colour bar subcarrier divider',
'oscillator', 'sync generator', and 'camera
multiplexer'.

Versions
LDK 4320/00 – set of system-dependent
camera modules for PAL/CCIR system
LDK 4320/50 – set of system-dependent
camera modules for NTSC/EIA system
LDK 4320/60 – set of system-dependent
camera modules for PAL M system
LDK 4320/70 – set of system-dependent
camera modules for SECAM system

LDK 4321
SET OF SYSTEM-DEPENDENT
RECEPTION UNIT MODULES

The 'multiplexer' and 'video out' modules
of the reception unit of the LDK 5 base
station are system dependent and have to
be exchanged to adapt the unit for
operation in accordance with either the
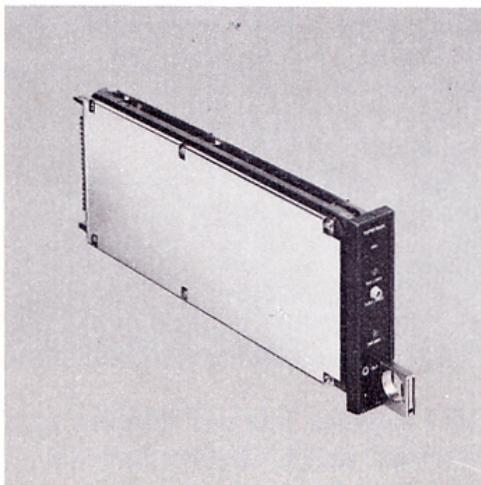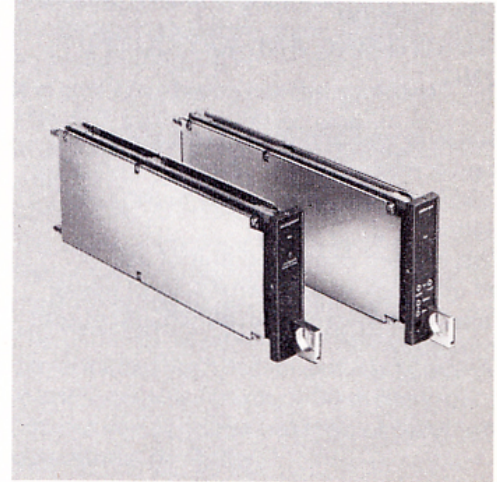PAL, NSTC, PAL M or the SECAM
system.

Versions
LDK 4321/00 – set of system-dependent
reception unit modules for PAL/CCIR
system
LDK 4321/50 – set of system-dependent
reception unit modules for NTSC/EIA
system
LDK 4321/60 – set of system-dependent
reception unit modules for PAL M system
LDK 4321/70 – set of system-dependent
reception unit modules for SECAM
system

LDK 4322
SYNC-LOCK UNIT OF LDK 5
BASE STATION

The sync-lock unit contains the circuits
for the timing and phasing comparison of
the camera output signal with the studio
reference. As studio reference, the unit
accepts a CVBS or 'colour black' signal,
or separate sync, subcarrier and for PAL
identification signals. On finding timing
or phasing differences, the sync-lock
circuits generate a correction signal that
is sent to the camera through the digital
control channel, to re-establish time
coincidence of the camera sync and
subcarrier generators with the studio
reference. The module can be plugged
into the reception unit LDK 4300 or
arranged together with the sync-lock
modules of up to four LDK 5 colour
camera systems in an optional module
holder with power supply module (see
LDK 6502/00). This permits the sync-
lock units to be sited together, for instance
near the vision mixer where time
coincidence of all picture signals is
required. The sync-lock unit is a system-
dependent design.

Versions
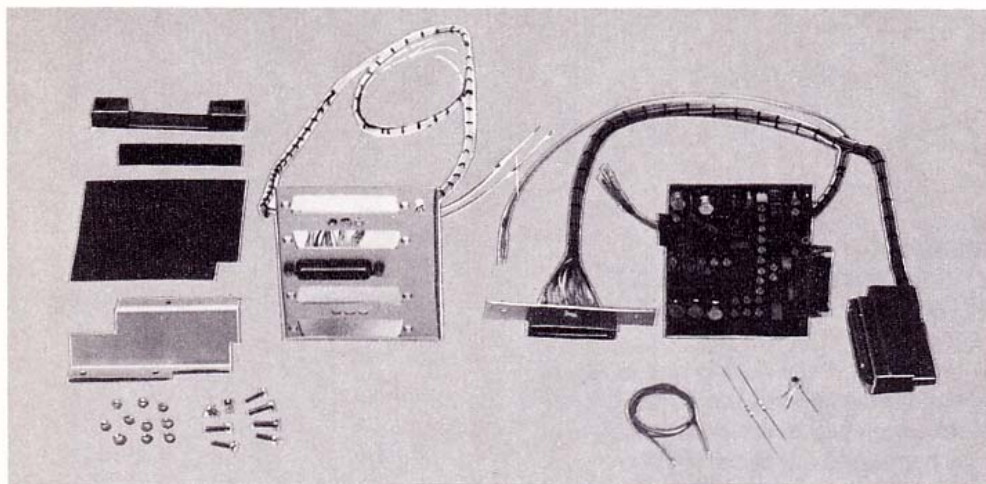LDK 4322/01 – sync-lock unit for
PAL/CCIR system
LDK 4322/51 – sync-lock unit for
NTSC/EIA system
LDK 4322/61 – sync-lock unit for
PAL M system
LDK 4322/70 – sync-lock unit for
SECAM system

Technical data
Connection to surveillance unit: wire pair
with maximum length of 500 m

LDK 4317/00
MONITORING AND CHROMA KEY SELECTOR UNIT

Printed circuit board containing circuitry for monitoring video, or chroma key signals.
Selection of the following signals is possible from the surveillance unit:
Single R, G, B, and Y, Overlay, CLUE, Sequential R, G, B or R, B, G
Super imposed R, G, B.
Chroma key signal derived from wide band R, G, B signals. Hue can be controlled from the base station or vision mixer.

LDK 4318/00
MONITORING AND KEY OUTPUT UNIT

Receiver unit and output amplifier for monitoring video and chroma key signals sent from the camera head to the base station.
This is a self contained unit of half 19 inch rack width, consisting of power supply, receiver, video switch and output amplifiers.
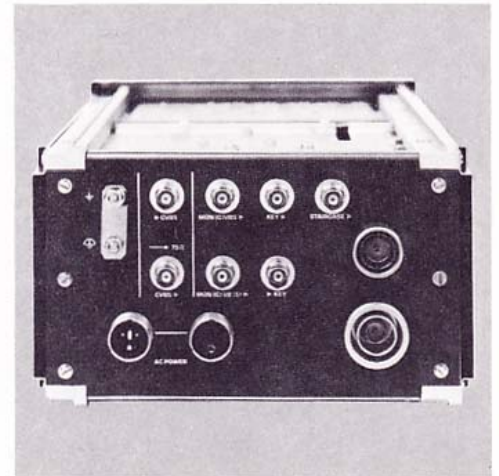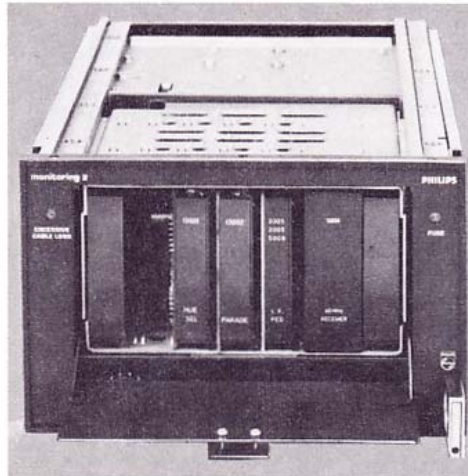
LDK 4319/00
60 MHZ MONITORING SIGNALS TRANSMITTER

Transmitter for sending monitoring-video and chroma key signals from camera head to LDK 4318/00 receiver at LDK 5 base station.

OPTIONAL EQUIPMENT FOR LDK 5 COLOUR CAMERA
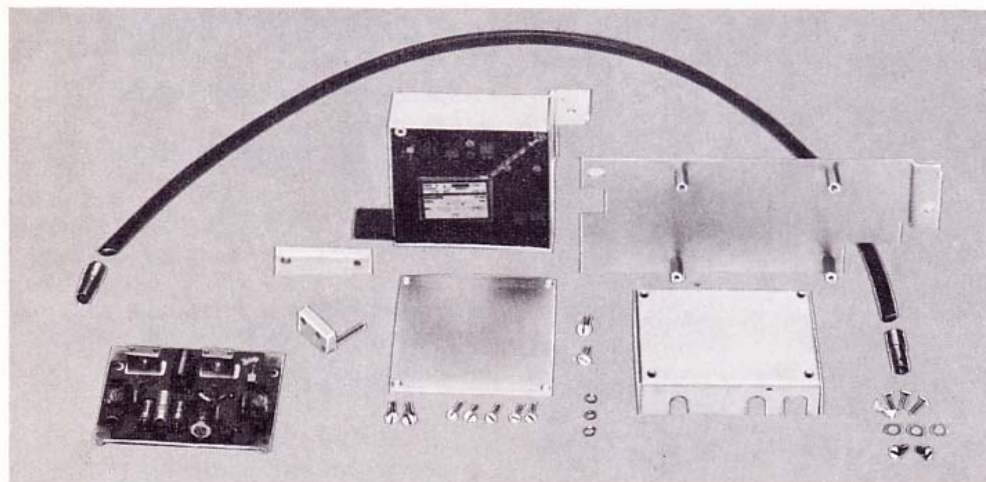
LDK 8550/04
RETROFIT SET FOR SURVEILLANCE UNIT

Text plate and two switches for the surveillance unit. The two switches allow selection of either the monitoring video or chroma key signal.

Note: The LDK 4300, LDK 4310, LDK 4315 and LDK 4318 must be mounted either in a 19 inch module holder or in a portable cabinet. These units are available under type number LDK 6500 (see Accessories section).

The LDK 4317/00 and LDK 8550/04 are required in the multicore cable mode.
The LDK 4318/00 and LDK 4319/00 are also required in the triaxial cable mode.

Portable Production Camera System LDK15L
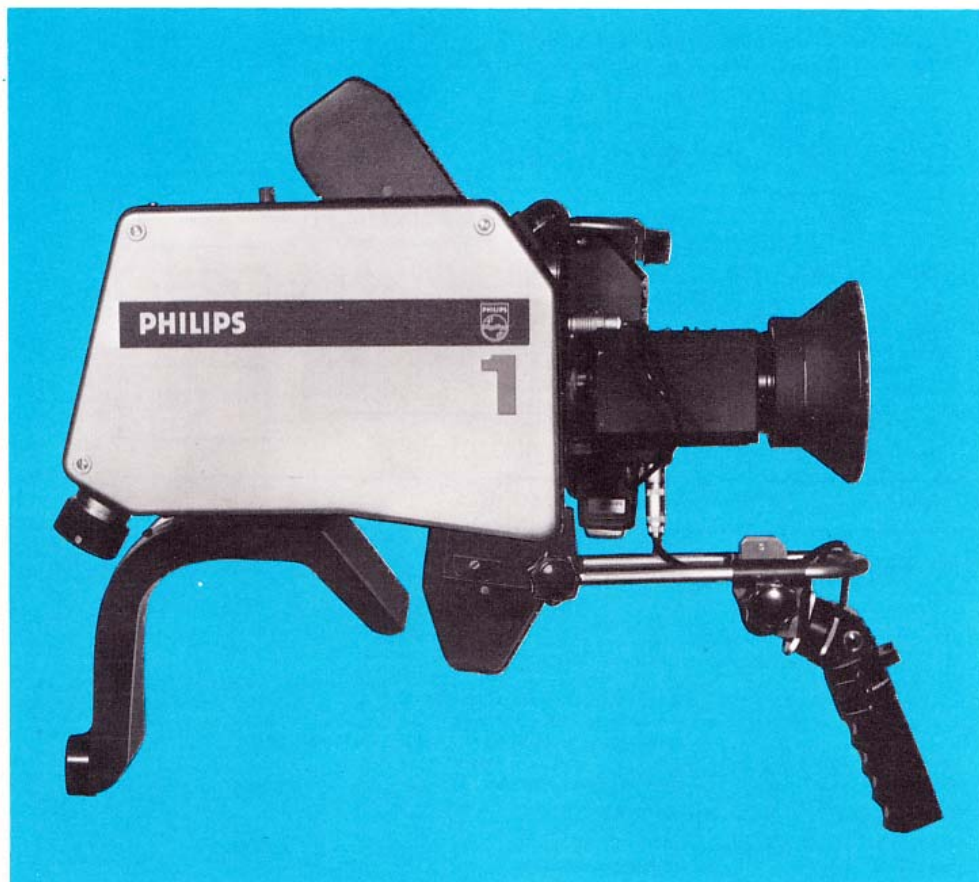
The camera head is equipped with an electronic viewfinder employing an 1 inch high-definition CRT.

It is also possible to use the standard LDK 5, 7 inch viewfinder, type LDK 4305/00. In that case the tripod adaptor for 7 inch viewfinder, LDK 6504/00 should be used.

The camera employs 1 inch ACT (anti-comet tail) Plumbicon tubes which are ideal for portable production cameras.

The LDK 15L equipment consists of a camera head with associated backpack. A maximum cable length of 50 m between camera head and the backpack allows full operational flexibility.

LDK 0015/01
PORTABLE PRODUCTION CAMERA

The LDK 15L is basically a portable version of the LDK 5 colour camera employing largely the same circuit modules. It also features the same studio picture quality and operational facilities. The scope of this high-quality portable member of the LDK 5 family will include both studio and outside broadcasting. In studio broadcasting, it will find application in taking the special shots for drama inserts in programme productions.

In outside broadcasting, where high picture quality is a requirement, the LDK 15L will be applied in televising actual events, and in making documentaries and drama on location
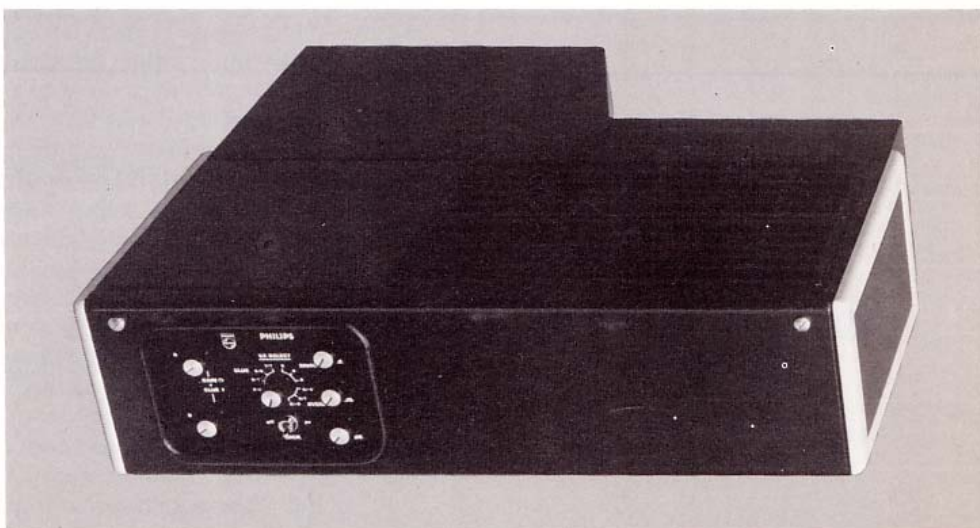
Various modes of operation are possible. The LDK 15L with its associated backpack can be connected to the CCU, type LDK 4350, of the LDK 25 studio camera. Through the PPU LDK 4355/00 the LDK 15L can be connected to the base stations of the LDK 5. In this way all the operational modes of the LDK 5 are possible with the LDK 15L as well. Backpack and harness: 7·5 kg (16·5 lb)
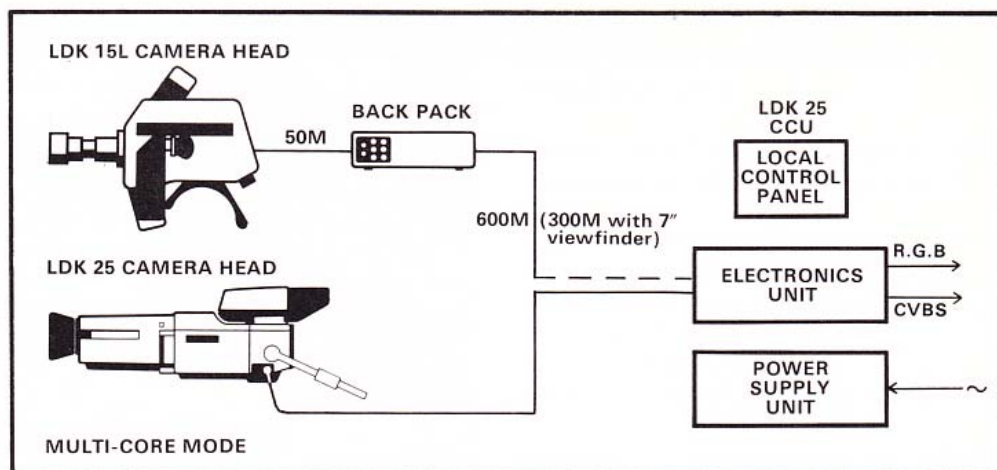
LDK 15L CAMERA HEAD

BACK PACK

50M

LDK 25 CAMERA HEAD

600M (300M with 7" viewfinder)

LDK 25 CCU

LOCAL CONTROL PANEL

ELECTRONICS UNIT

R.G.B

CVBS

POWER SUPPLY UNIT

~

MULTI-CORE MODE

Technical data

Scene illumination: 1000 lux for a signal-to-noise ratio of 45 dB (NTSC approx 48 dB) in the Y-channel; lens iris f/2·8, reflection factor 60%, gamma correction 0·5, measured at 40% of peak white, 5 MHz bandpass filter (NTSC 4·2 MHz)

Resolution: 50% modulation depth at 400 lines, without contours (XQ 1500 series Plumbicons)

Colour registration: deviations of red or blue in any direction with respect to green: zone 1 = 25 ns; zone 2 = 65 ns; zone 3 = 125 ns

Weight: camera with viewfinder, tubes, shoulder support approx. 8·9 kg (19·6 lb)

LDK 15L CAMERA HEAD

BACK PACK

50M

150M

PPU

LDK 5 CAMERA HEAD

2000M with 14mm
1000M with 11mm
500M with 8mm

LDK 5 BASE STATION

SURVEILLANCE UNIT

RECEPTION & SYNC-LOCK UNITS

CVBS

POWER SUPPLY UNIT

~

TRIAX MODE

LDK 15L CAMERA HEAD

VTR

PPU CONTROL PANEL

CAMERA POWER SUPPLY AND SURVEILLANCE UNITS

220V.

~

COMBINED CONTROL PANEL

DIRECT TAPING MODE

LDK 15L CAMERA HEAD

Rx Tx

PPU

CAMERA PSU (FROM BASE STATION)

MAINS

Rx Tx

RECEPTION, SYNC-LOCK AND SURVEILLANCE UNITS

RADIO MODE

LDK 4307/01
ELECTRONIC VIEWFINDER

The LDK 15L camera viewfinder is a separate unit for mounting on either side of the portable camera. It is linked to the camera by a flying lead with plug-and-socket connections. As the viewfinder is mounted in a vertical position, it is equipped with a 45° mirror deflecting the CRT image through a 2·5× magnifier into an adjustable eyepiece. The CRT used is a 1 inch high-definition tube displaying a sharp picture at high brightnesses. In addition to contrast and brightness controls, the viewfinder has a selector for peaking the video signal displayed.

Technical data
Power consumption: approx. 12 W
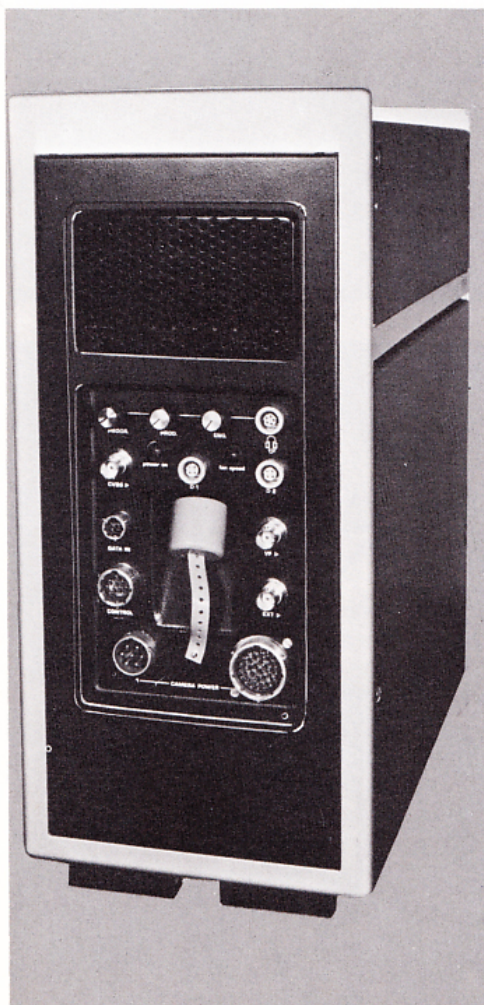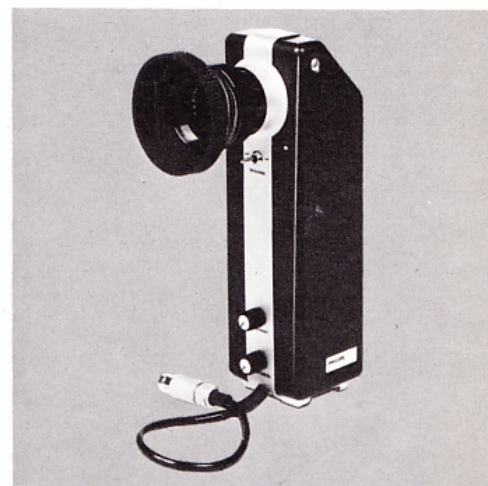High brightness: 250 ft Lambert
Linearity and geometry error (including magnifier): less than 3%
Dimensions: 245 × 71 × 68 mm
($9\frac{5}{8}$ × $2\frac{3}{4}$ × $2\frac{5}{8}$ inch) (h × w × d)
Weight: approx. 1 kg (2·2 lb)

LDK 4355/00
PORTABLE PROCESSING UNIT (PPU)

The PPU houses the main part of the colour camera electronics, and in fact contains the majority of the standard LDK 5 camera circuit modules. It is a compact unit weighing about 15 kg, and is connected to the LDK 15L backpack by a 13 mm diameter multicore cable up to 150 m in length. Apart from some preset controls on the modules, the PPU has no external camera controls, except for talkback facilities. There are, however, a number of cable connectors, which are needed mainly because of the various operating modes of the LDK 15L camera. In addition to the connectors for triaxial and multicore cable links to the base station, connectors are provided for the following purposes: headphone set; two audio inputs; inputs and outputs for an external viewfinder signal; camera CVBS output (to feed a VTR in the direct-taping mode); start/stop signal output for a VTR or an intercom transceiver (direct-taping or radio mode); input for a control data signal (connected to the data output of the receiver in the radio mode); duplicated 100 V power input, to connect the standard LDK 5 power supply unit in the direct-taping or radio mode.

The PPU is designed to be fitted with a set of system-dependent modules LDK 4320 so that the LDK 15L camera equipment can operate to different TV system standards after exchanging these modules.
Weight PPU; approx 15 kg (33 lb).

LDK 6505/01
CAMERA SUPPORT FOR
WEDGEPLATE MOUNTING

This standard LDK 15L camera support is designed for mounting the camera head on a tripod wedgeplate. Its use enables the LDK 15L camera to be operated as a special mobile tripod-mounted camera inside a studio, or can be used for televising interviews, sport and other topical events.
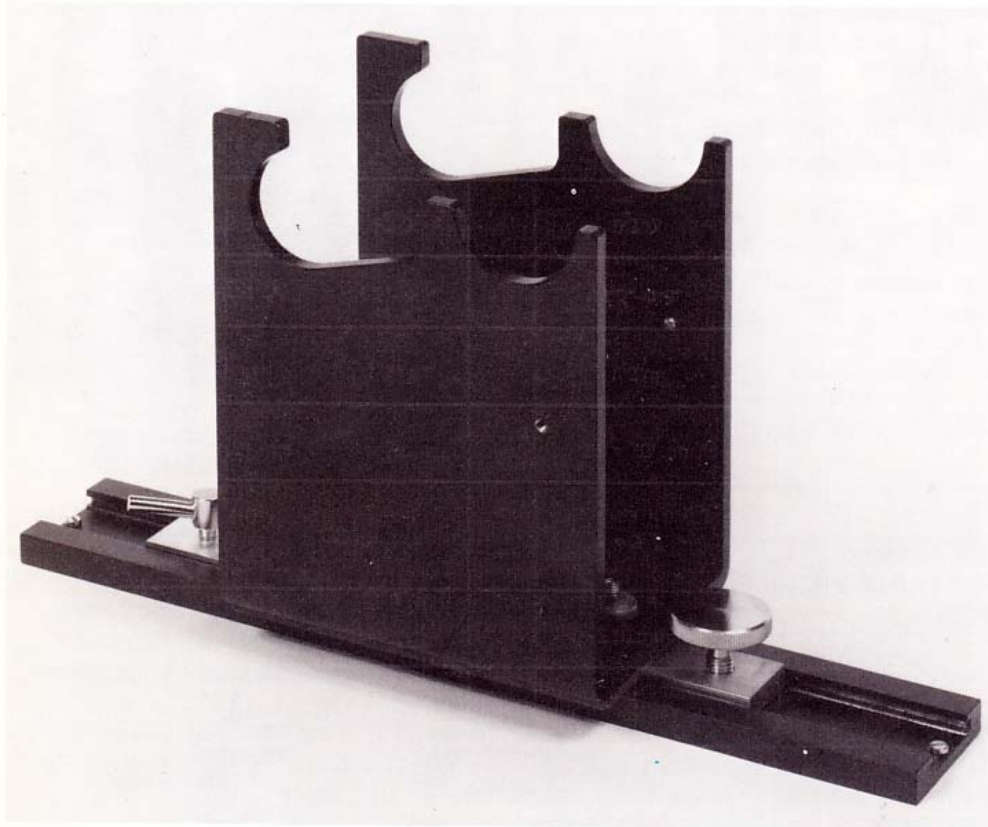
LDK 6504/00
TRIPOD ADAPTOR FOR 7 INCH
VIEWFINDER

With this adaptor, the LDK 15L can be mounted on a tripod wedgeplate (LDK 6503) together with the standard LDK 5 viewfinder (LDK 4305/00). The viewfinder remains tiltable, rotatable and can be quickly released. The switch functions on the viewfinder are controlled from the backpack.

Multicore Camera LDK25

LDK 0025
COLOUR CAMERA

This colour camera is the third member of the LDK 5 family. It is a multicore cable and CCU version of the LDK 5 colour camera, providing most of its operational facilities while retaining the same stability

System-dependent modules enable the camera to operate to different TV systems.
The electronics unit occupies four units of 19 inch rack width, the power supply unit three units. The local control panel is of half 19 inch rack width. A variable matrix unit of the same size is available as an

and picture quality. By replacing the digital control and multiplexing systems of the LDK 5 by conventional multicore camera cable techniques, and by simplifying the mechanical construction, cost savings have been achieved without sacrificing any essential technical qualities.

The LDK 25 is mainly intended to replace or extend the existing camera equipment in broadcast stations already equipped with a multicore cable network. It will also be applied in new broadcast stations where the more sophisticated triaxial cable techniques are not required.

The LDK 25 equipment consists of a low-profile camera and a small CCU. Camera and CCU are interconnected by 13 mm multicore cable, F & G type 753-5 or TV 81, with a length of up to 600 m. The CCU consists of three main assemblies: the electronics unit, the power supply unit and the local control panel.

option. It serves for matching the LDK 25 with other video signal sources or to achieve special colorimetric results. The LDK 25 camera head is compatible with the LDK 15L system, and can be connected to the LDK 15L PPU thus enabling the LDK 25 to operate in the triaxial mode to achieve a camera cable length of up to 2800 metres.
Conversely, the LDK 15L camera head and backpack can be connected to an LDK 25 CCU, to allow this portable camera to operate in a multicore mode. The LDK 25 facilities include electronic colour temperature control, contrast compression, and CLUE facility at both viewfinder and CCU. Optional items available are automatic correction circuitry for iris, white balance, centring and a variable matrix.
The LDK 0025 type number includes the colour camera head, without viewfinder, lens and tubes.

Versions
LDK 0025/01 – for F & G camera cable and intercom system 'A' (4-wire)
LDK 0025/50 – for TV 81 camera cable and intercom system (2-wire)

Technical data
Scene illumination: 1000 lux for a signal-to-noise ratio of 45 dB (NTSC approx. 48 dB) in the Y-channel; lens iris f/2·8, reflection factor 60%, gamma correction 0·5, measured at 40% of peak white, 5 MHz bandpass filter (NTSC 4·2 MHz)
Resolution: 50% modulation depth at 5 MHz, 400 lines without contours (XQ 1500 series Plumbicons)
Colour registration: deviations of red or blue in any direction with respect to green: zone 1 = 25 ns; zone 2 = 65 ns; zone 3 = 125 ns
Weight: camera with viewfinder approx. 40 kg (88·1 lb)

LDK 4306/00
ELECTRONIC VIEWFINDER FOR
LDK 0025/50

The viewfinder is built into a sturdy, lightweight cast aluminium housing. It uses a high-brightness 7 inch rectangular picture tube displaying a brilliant and sharply focused picture. The viewfinder is tiltable, rotatable and removable, and can


be operated remotely from the camera on an extension cable. For monitoring, alignment and set-up purposes, all the usual selections of individual signals and signal combinations of R, G, B, -G, Y and EXTERNAL video signals can be made for display. Additionally, signal combinations can be switched on in the CLUE mode (i.e. four lines of the green camera signal alternated with four lines of the red or blue camera signal), for setting up signal levels of black balance, white balance. An electronic zoom indicator is superimposed on the top of the viewfinder picture display. The viewfinder is also provided with a peaking on/off position to aid the cameraman in fine focusing. Tally and call lights are located below the viewfinder screen.

LDK 4305/00
ELECTRONIC VIEWFINDER FOR
LDK 0025/01

The LDK 0025/01 uses the same viewfinder as the LDK 0005. For description see p. 5.

Technical data viewfinder
Power consumption: 25 VA
High brightness: 250 ft Lambert
Linearity error: 0·5%
Geometry error: 1%
Weight: 9 kg (19·8 lb)
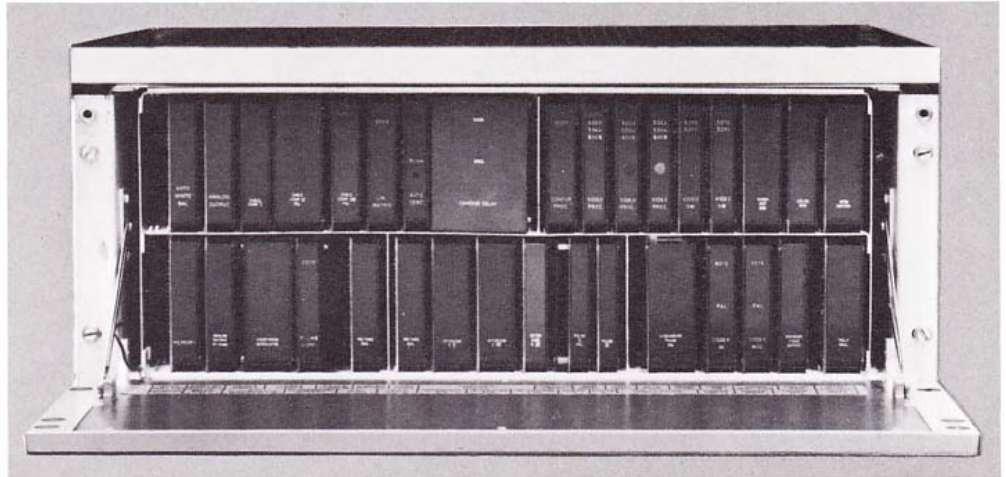
LDK 4350
CAMERA CONTROL UNIT
EQUIPMENT

The CCU equipment consists of three assemblies: the electronics unit, the power supply unit and the local control panel.
The electronics unit is designed for 19 inch rack mounting, and contains the circuits for signal processing and timing. It occupies four units of rack space. The power supply unit, also designed for 19 inch rack mounting, supplies power for the whole camera system. It occupies three units of rack space.
The local control panel is required for operational control. It is designed to be placed in a mounting frame accommodating two such panels in a standard 19 inch rack width.
Cover panels and carrying handles are available to allow a transportable version of the CCU to be made when required.

Versions
LDK 4350/00 – for LDK 0025/01 (F & G camera cable and intercom system 'A')
LDK 4350/50 – for LDK 0025/50 (TV 81 camera cable and intercom system 'US')

LDK 4360
ENCODER MODULES FOR LDK 4350

System-dependent encoder modules for the LDK 4350 electronics unit.

Versions
LDK 4360/00 – encoder module for PAL system
LDK 4360/50 – encoder module for NTSC system
LDK 4360/60 – encoder module for PAL M system
LDK 4360/70 – encoder module for SECAM system

LDK 4365
CONTOUR DELAY MODULE FOR
LDK 4350

System-dependent module for the LDK 4350 electronics unit which is designed to provide a clear, sharp, noise-free and properly timed contour-enhanced video signal from the camera.
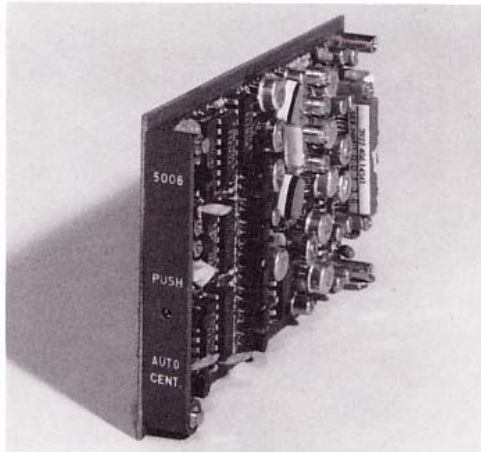
Versions
LDK 4365/00 – contour delay module for PAL/SECAM systems
LDK 4365/50 – contour delay module for NTSC/PAL M systems

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LDK 4615/00
VARIABLE MATRIX UNIT

The variable matrix unit is connected to the LDK 4350 electronics unit, and can be housed in the local control panel mounting frame next to the local control panel. The unit permits the LDK 25 output signal to be matched to other colour signal sources, and also allows a particular hue or colour range to be enhanced and emphasised.
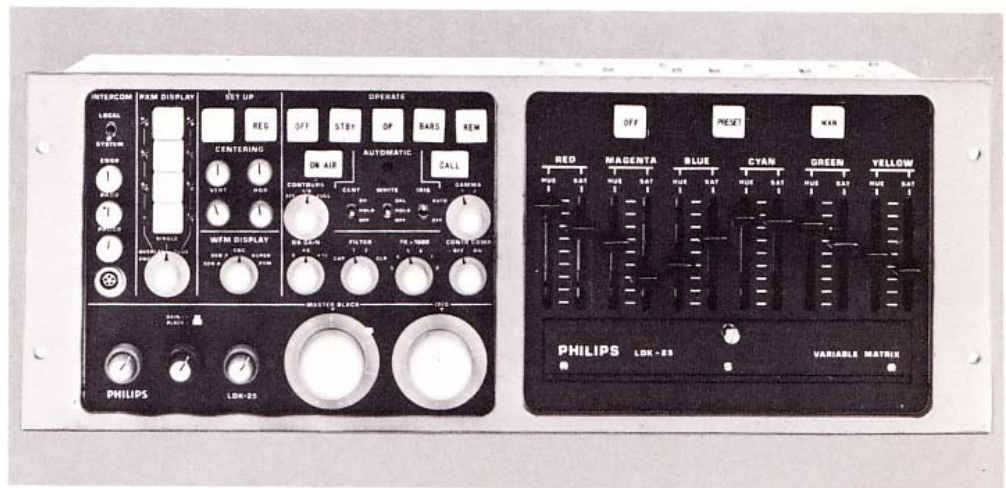
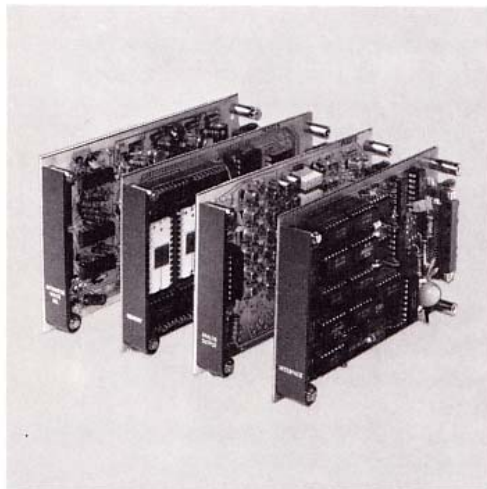# OPTIONAL EQUIPMENT FOR LDK 25 COLOUR CAMERA

LDK 4332
AUTO CENTRING MODULE

When focused on a test pattern the auto centring unit will, on command, centre the blue and red picture on top of the green picture.

Versions
LDK 4332/00 – for camera LDK 0005 or PPU LDK 4355
LDK 4332/01 – for CCU LDK 4350

LDK 4330/10
AUTOWHITE SYSTEM

The system consists of four modules: the autowhite module, the interface module, the memory module and the analogue output module. These modules can be inserted in the CCU, LDK 4350.

LDK 4333/10
AUTO IRIS MODULE

The automatic iris control module is housed in the camera head of the LDK 25. When automatic iris control is selected by a switch on the local control panel, the automatic iris control module replaces the iris control knob on the control panel and provides positive or negative d.c. voltages for the iris drive motor of the lens.
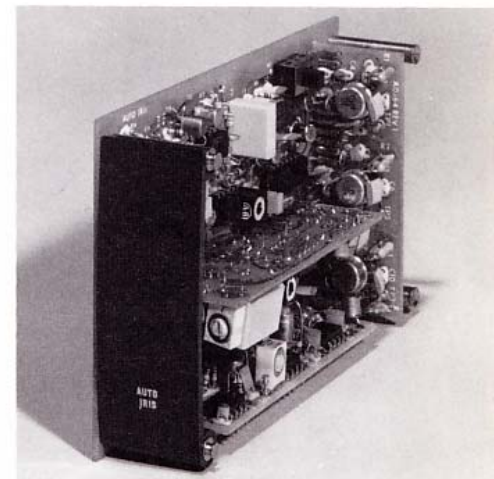
Telecine Camera LDK65
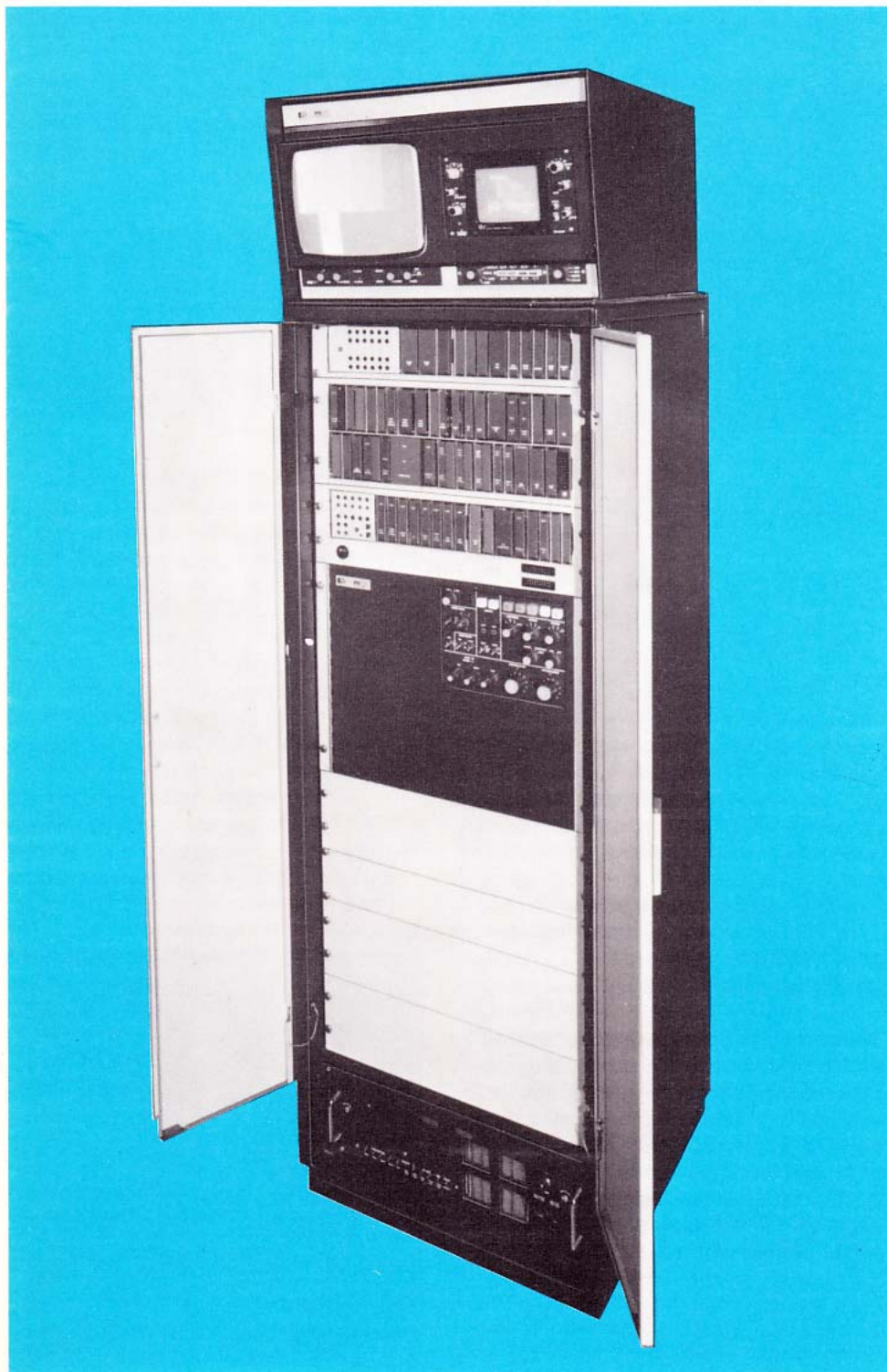
The basic design philosophy of this film camera chain is to provide excellent performance with no compromise in picture quality, and to provide maximum flexibility at an economical price. By the addition of certain automatics the Telecine system may be completely automated permitting fully hands-off operation.

The camera optical unit and processing electronics are all contained in one cabinet with a rotatable monitoring pod mounted on the top. The cabinet is designed to be integrated into a conventional 'island' configieration using a mirror multiplexer and a variety of different film and slide projectors. The LDK 65 is based on the system concepts of the LDK 5 family and therefore uses many modules and components common to the other members. It is designed for use with any of the international colour television standards.

Versions
LDK 0065/00 – Plumbicon tubes
LDK 0056/01 – Vidicon tubes

Technical data
Signal to noise: signal current 300 nA video bandwidth 5 MHz (4·2 MHz NTSC)
measured at 5% peak white without correction and linear gamma.
Any channel at least 48 dB (50 dB)
Y channel at least 47 dB (49 dB)
Signal to noise ratio normal operating conditions better than 44 dB (46 dB), weighted better than 55 dB (57 dB).
Each channel 600 lines
Colour Registration: deviations of Red or Blue in any direction with respect to Green: In an ellipse with axes 0·9 of the picture height and width deviations will be no more than the distance equal to a horizontal scanning time of 25 nanoseconds. Within a circle of a diameter equal to the picture width, deviations will be no more than 50 nanoseconds. Outside this circle, deviations will be no more than 100 nanoseconds

LDK 4540/00

Telecine Remote Control
Together with painting control and
mono-knob control panels, the telecine
remote control panel provides for the
selection of gamma, matrix and optional
automatic facilities.

Technical data
Dimensions: 219 × 102 × 000 mm)
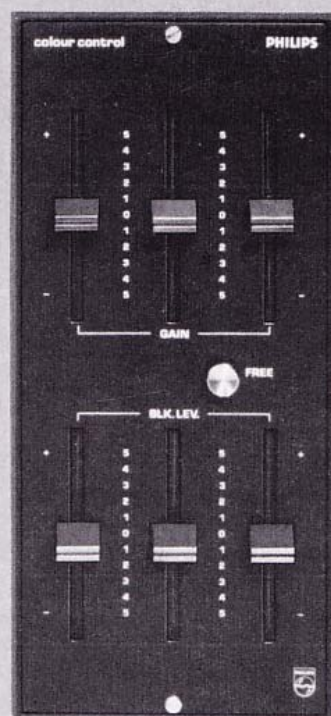($8\frac{3}{8}$ × 4 × 0 inch) (h × w × d)

LDK 4613/01

Monoknob slide control
This unit provides remote operational
control of master white and master black
level. It is normally operated in
conjunction with the LDK 4612/01
painting control when console mounted.

Technical data
Dimensions: 219 × 102 × 80 mm
($8\frac{3}{8}$ × 4 × $3\frac{1}{10}$inch) (h × w × d)

LDK 4612/01
PAINTING CONTROL

This unit permits remote control of the
individual channel gains and black levels.
It adjusts the red, green and blue channel
gains and black level. Details of the
telecine console for mounting the remote
control units are shown overleaf.

Technical data
Dimensions: 219 × 102 × 85 mm
($8\frac{3}{8}$ × 4 × $3\frac{3}{10}$inch) (h × w × d)

# Optional facilities for the LDK65 Telecine Camera
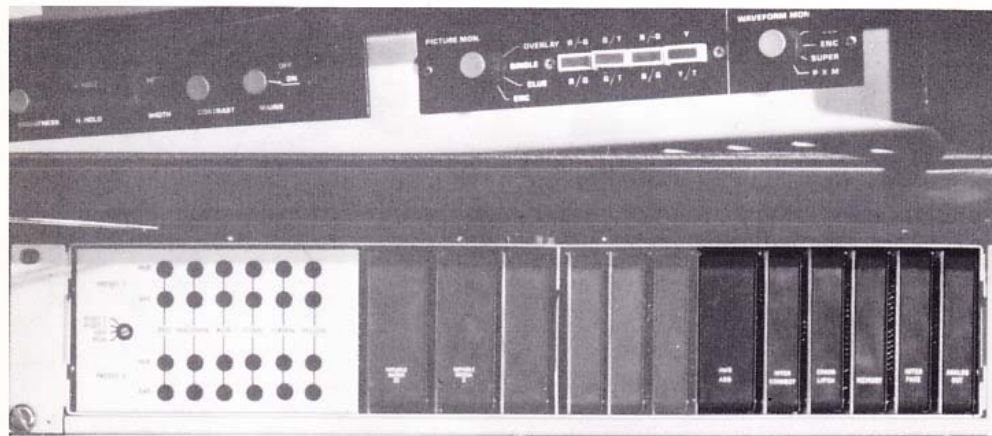
LDK 4590/00
OPTIONAL MODULE RACK

Installed in the LDK 65 camera cubicle, this rack houses all the automatic modules and the variable matrix unit.

AUTOMATIC CONTROL FACILITIES
LDK 4565/01
AUTOMATIC WHITE,
AUTO BLACK BALANCE
AND AUTO GAMMA

These functions are combined in a set of modules and automatically correct for errors in the film processing. The RGB signals are continuously sampled and compared with a reference. Error signals thus produced are stored digitally and applied as correction signals (at the end of each field) to the white and black balance circuits.
Auto gamma corrections being very small increments are applied almost instantaneously.
Switches on the control panel provide for manual control if required.
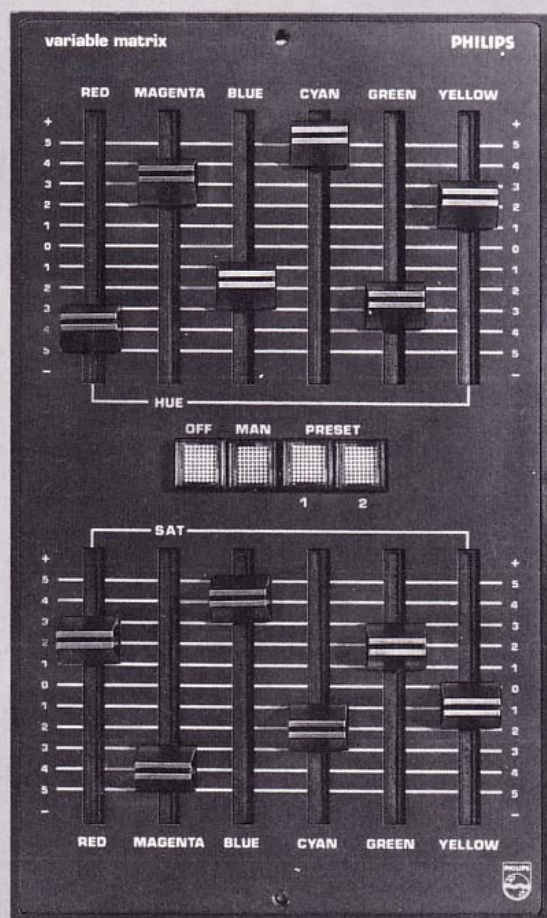
LDK 4615/10
VARIABLE MATRIX UNIT AND
**MODULE**

The variable matrix unit allows the operator to adjust the hue and saturation of the coloured areas of the picture without disturbing the white balance or the grey scale tracking.
The module is mounted in the optional module rack described above.
The variable matrix unit control panel can be located in the control console in conjunction with the other remote control facilities.

18

LDK 4555/0
CINEMASCOPE MODULE

This module provides reblanking circuits
to give a display of full height and 70%
width in the standard 'letterbox' format.
Trim registration controls are provided to
maintain correct registration when
selecting between normal or cinema-
scope operation.

LDK 4575/00
NEGATIVE FILM MODULE

For negative film requirements, this
module, together with a corrective cyan
filter, introduced into the lightpath,
automatically upon selection, provides for
video inversion, reblanking and control
reversal. Thus the black level control
operates the disc and the white level
control operates the black level.
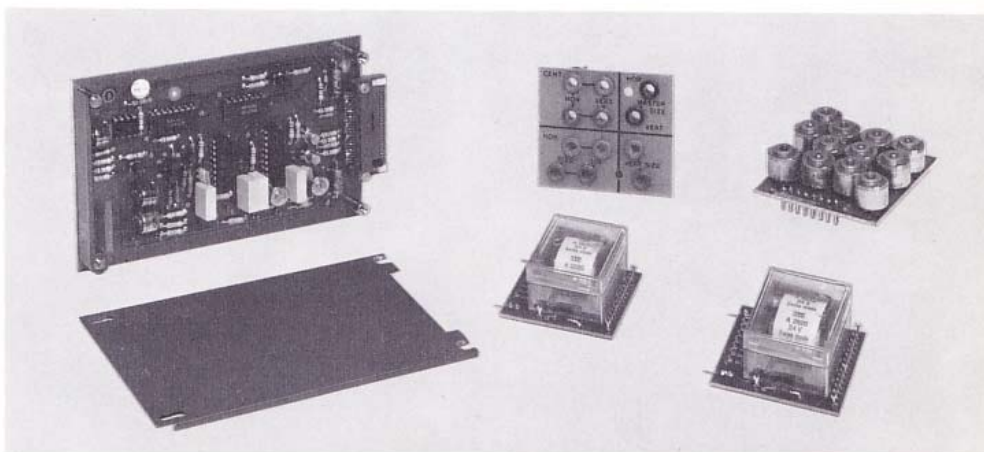
TELECINE CONTROL CONSOLE

This unit houses the remote control
facilities of the LDK 65 telecine camera
and projectors. Space is also provided for
optional facilities when required.

Economic Camera LDK2

LDK 0002
ECONOMIC CAMERA

The LDK is an economic camera providing studio-quality pictures. It is intended for use in local and regional television studios and for performing certain tasks, such as caption and telecine scanning, in the more sophisticated television broadcast centres. The camera transmits a standard PAL or NTSC composite colour signal and a set of R, G and B primary colour signals. It is a self-contained, modular camera using 1 inch Plumbicon tubes and a 7 inch electronic viewfinder. The camera includes a horizontal and vertical contour signal generator which ensures a clear, sharp,

noise-free and properly timed contour-enhanced video signal.
With additional cable correction maximum 300 m of camera cable can be used. A horizontal or vertical contour enhancer kit can be incorporated to ensure clear, sharp, noise free and properly timed contour-enhanced video signals.
In the USA this camera is known as the LDH 20S. Separate literature is available.

CAMERA TUBES AND LENSES

Camera tubes and lenses for the LDK 2 are listed under the general range of tubes and lenses and are described in later sections of this catalogue.

Versions
LDK 0002/10 – including horizontal and vertical contour enhancer interconnection unit LDM 1155, exposure control panel LDM 1156, colour balance panel LDM 1157. Contour enhancer has been built in
LDK 0002/55 – same as LDK 0002/10, however suitable for NTSC/EIA system
LDK 0002/65 – same as LDK 0002/10, however suitable for PAL-M system

Technical data
Scene illumination: 1250 lux for a signal-to-noise ratio of 43 dB in the CVBS output signal; lens iris f/2·8, gamma correction 0·6, reflection factor 60%, measured at 45% of nominal level.
250 lux for acceptable pictures, at lens iris f/2·8
Resolution: 30% modulation depth at 5 MHz (without contour correction)
Colour registration: deviations of red or blue in any direction with respect to green: zone 1 = 60 ns (optional 40 ns); zone 2 = 80 ns (optional 80 ns); zone 3 = 150 ns (optional 80 ns)
Weight: live camera without lens approx. 32 kg (70 lb)

LDK 8108
CAMERA CABLES FOR LDK 2

Versions
LDH 8108/00 – camera cable for
LDK 0002/00, length 15 m
LDH 8108/01 – camera cable for
LDK 0002/00, length 50 m
LDH 8108/51 – camera cable for
LDK 0002/50, length 50 m

LDK 6503/00
WEDGE PLATE

For description, please see p.37

LDK 6400/00
SET OF CAMERA INDICATING
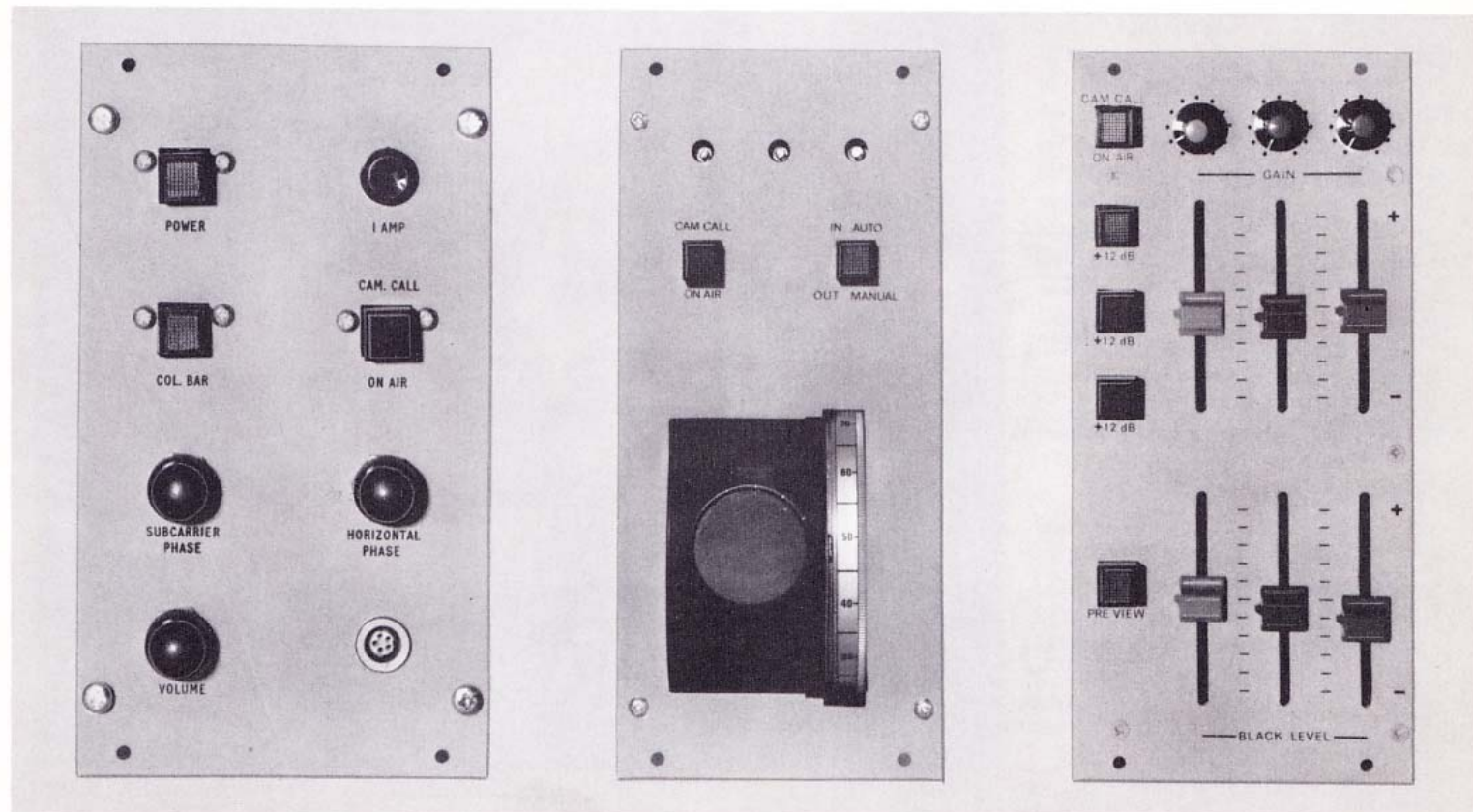**NUMBERS**

For description, please see p.35

LDK 81110/00
HEADPHONE

Headphone for LDK 0002/10,
LDK 0002/55 and LDK 0002/65
camera versions.
For description, please see p.39

LDH 6103/01
HANDCONTROLS AND FLEXIBLE
CABLES FOR MANUAL OPERATED
LENSES

Handcontrols and flexible cables for
manual operated lenses

LDM 1155/01
INTERCONNECTION UNIT

This unit, which is designed to fit into a
480 mm (19 inch) rack together with
three others, if required, provides the
following facilities: power on/off, colour
bar selection, on air/cam call, subcarrier
phase, horizontal phase and intercom
volume. On the rear of the unit are fitted
BNC connectors for the colour sync
(black burst) and external viewfinder
input signals, CVBS and RGB output
signals. Multiway connectors are also
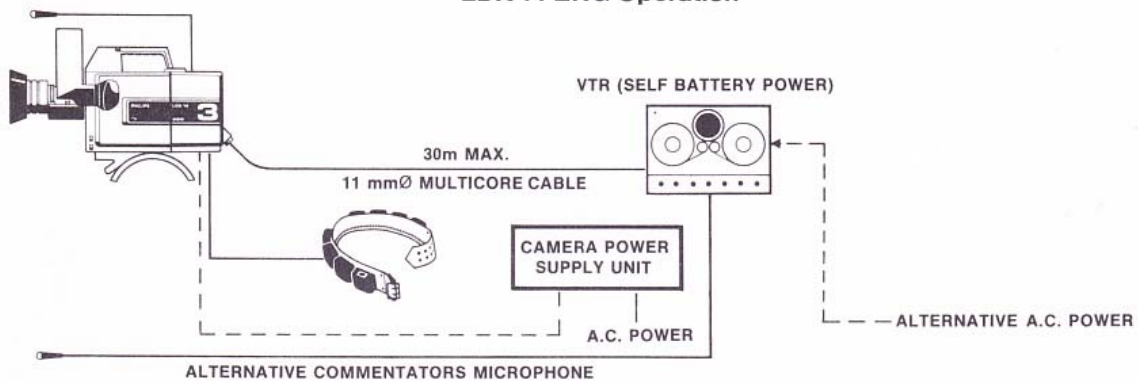provided for intercom, communications,
ac mains and remote control panels.

LDM 1156/01
EXPOSURE CONTROL PANEL

This is a monoknob joystick unit for the
control of camera iris and black level. It
also incorporates a preview override
switch, combined cam call/on air switch
and an iris auto/manual switch. Also
provided are RGB screwdriver preset gain
range controls.
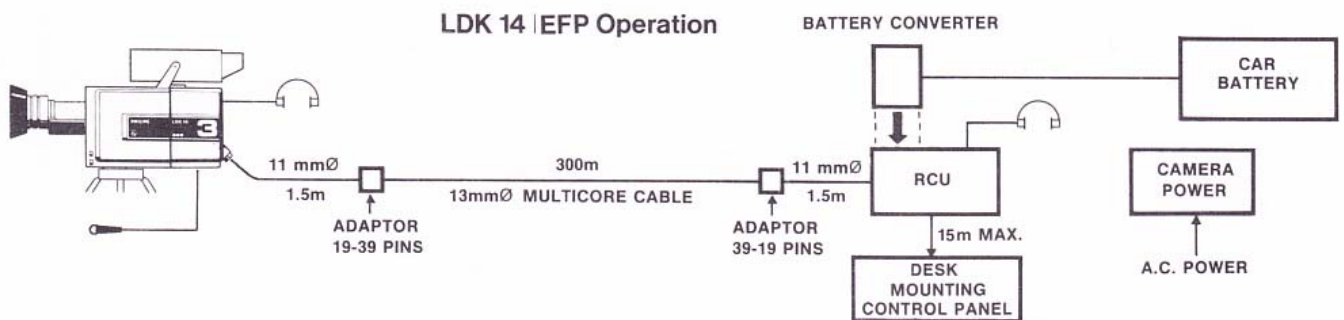
LDM 1157/01
COLOUR BALANCE PANEL

This unit is fitted with six sliders for the
fine adjustment of RGB black level and
gains, a coarse gain control and a
±12 dB switch is provided for each
channel. Combined cam call/on air
preview selector buttons are also
provided. If colour balancing facilities are
not required, a shorting plug must be
connected to the operational control
panel.

LDK 14 ENG Operation

VTR (SELF BATTERY POWER)

30m MAX.

11 mmØ MULTICORE CABLE

CAMERA POWER
SUPPLY UNIT

A.C. POWER

— — ALTERNATIVE A.C. POWER

ALTERNATIVE COMMENTATORS MICROPHONE

LDK 14 IEFP Operation

BATTERY CONVERTER

CAR
BATTERY

11 mmØ

1.5m

300m

13mmØ MULTICORE CABLE

11 mmØ

1.5m

RCU

CAMERA
POWER

ADAPTOR
19-39 PINS

ADAPTOR
39-19 PINS

15m MAX.

A.C. POWER

DESK
MOUNTING
CONTROL PANEL

ENG-EFP Camera LDK14

LDK 0014
ENG – EFP CAMERA

The LDK 14 is a one piece, fully self-contained, rugged shock-proof camera of minimal weight. The camera uses all magnetic $\frac{2}{3}$ inch Plumbicon tubes and a high transmission f/1·4 prism system with dual bias light injection, which together with linear matrixing, and two line contour correction provides broadcast quality pictures of optimal colorimetry. The LDK 14 can be handled like a 16 mm film camera, not only for Electronic News Gathering (ENG), but also for Electronic Field Production (EFP) and studio use. For EFP and studio applications a range of accessories are available including a Remote Control Unit (RCU) and a 5 inch high-quality viewfinder for use when the camera is tripod mounted. The distance between camera and RCU can be 100 m maximum using 11 mm diameter multicore cable (type LDK 8100) and 300 m maximum using 13 mm diameter multicore cable (type LDK 8106). For greater distances between camera and RCU coax cable, 7 mm diameter up to 1000 m maximum can be used when the camera is powered locally and triax cable up to 2000 m maximum (14 mm diameter) can be used when the camera is powered from the RCU.

The camera is provided with a full range of automatic facilities which include auto iris, auto colour balance and auto centring which operate on command. A special feature is Dynamic Beam Control for ease of highlight handling which provides for over stabilisation up to four lens stops above peak white.

With all these built-in features in a one piece camera, the use of integrated circuits and micro miniature components has enabled Philips to produce a broadcast quality camera of extremely low weight.

LDK 4370/00
REMOTE CONTROL UNIT (RCU)

Full operational remote control
(maximum 300 m) of the LDK 14 camera
is possible with the remote control unit.
The camera operational controls are
arranged on the module front panel. This
front panel can be removed and mounted
in a desk, if required. The output signals
of the unit are the composite video
camera signal, a chroma key signal,
intercom and audio. The input signals are
black burst for sync reference, external
viewfinder and intercom. The unit can be
connected to an a.c. supply, or to a d.c.
source (eg. car battery) via the battery
converter LDK 4374/00. The width of the
unit is half 19 inch rack. The height is
3 RUs.

LDK 4371/00
CAMERA REMOTE CONTROL
MODULE

If the LDK 14 camera is used in the
remote control mode (EFP, studio), this
module should be inserted in the camera
in place of the ENG module. The video
and audio signals are processed to
prevent decrease of quality when long
camera cables are used (maximum 300 m).
Control signals from the remote control
unit LDK 4370/00 are decoded and
applied to the various operational
control circuits.

LDK 4374/00
BATTERY CONVERTER

The unit converts a d.c. voltage between
10·5–15 V (eg. car battery) to 17 V d.c.
In this way the voltage drop over a long
power cable can be compensated if the
LDK 14 has to be supplied from a car
battery.
The unit can also be combined with the
remote control unit LDK 4370. In this
mode the complete remote controlled
LDK 14 can operate on a car battery.
(Small self-contained outside broadcast
vans.)

LDK 4373/00
A.C. SUPPLY UNIT

At locations where an a.c. supply is
available this unit can be used to supply
the LDK 14 camera with d.c. The
d.c. voltage is applied direct to the
camera, sensed and kept constant
independent of the length of the cable.
(The maximum distance depends on
cable type.) In such a mode of operation
the cameraman does not have to carry the
battery belt.
The unit can also be used in the remote
control mode of the LDK 14. It can be
mounted next to the LDK 4370 remote
control unit in a 19 inch rack. The
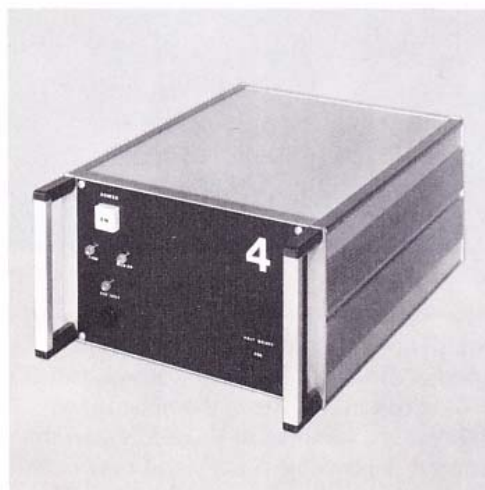dimensions are width: half 19 inch rack
height: 3 RUs.

LDK 4375/00
BATTERY BELT

The battery belt is mainly used in the self-contained ENG mode. The belt has a built-in overnight charger. It is also possible to charge the belt in about one hour using the LDK 4376 fast battery charger.
Power rating: 14·4 V 4 AH (1½–2 hours).
Weight: 3·2 kg (7 lb).

LDK 4376/00
FAST BATTERY CHARGER

The battery belt can be charged with this fast charger in one hour. The fast charger is equipped with selector push buttons for 'slow' or 'fast' charge. After the battery is fully charged the fast charge circuit is automatically cut off and the battery remains on trickle charge mode. A fast charge indicator goes off. A slow charge indicator stays on.
Weight about 1·5 kg (3 lb).

LDH 2101
1½ INCH VIEWFINDER

This type of viewfinder is used in ENG and EFP modes. It is provided with an adjustable eyepiece and a 2·5 × magnifier and can be positioned with respect to the eye of the cameraman for maximum comfort, and mounted on either side of the camera for left or right hand operation. Various indicators help the cameraman to obtain maximum picture performance.
Red LED: 'VTR RECORD' or 'ON AIR'
Yellow LED: 'WARNING LIGHT' for battery low voltage, camera non-operational or call (flashing).
Electronically generated (in the LDK 14 camera):
Two small squares for aiming at auto centring test chart.
Two small vertical bars for framing at white reference test object. Information is obtained when auto white procedure is started, finalised, out of range or a filter change is required.
Window for momentary iris setting.
Tape remaining indication.
In addition to contrast and brightness controls the viewfinder has a switch for peaking the video signal displayed.
Weight: 0·5 kg (about 1·1 lb)

Versions
LDH 2101/00 for 50 HZ
LDH 2101/10 for 60 Hz

LDK 4308/01
5 INCH VIEWFINDER

When the LDK 14 is used for EFP or studio applications and tripod mounted, a 5 inch viewfinder can be attached to the camera. It employs a picture tube 140 BEB 4. It is possible to mount the viewfinder on top or at the side of the camera. The viewfinder gives a studio quality picture with high brightness. All indicator functions as available in the 1½ inch viewfinder are maintained.
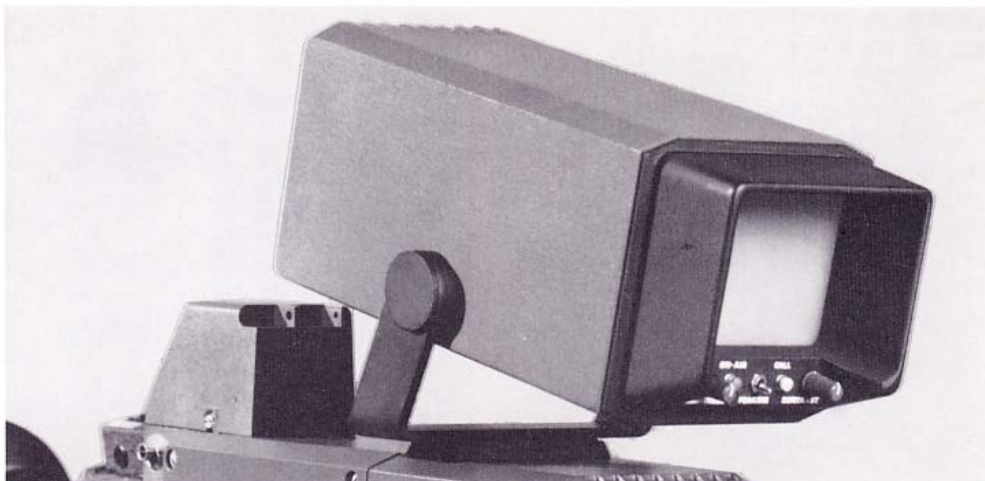
LDK 6990
CAMERA SUPPORTS

The LDK 14 has a flat base, and this means that it can be placed on the shoulder and balanced properly. However, for longer periods of operation it is recommended that use should be made of a special shoulder brace. The cables can be connected directly to the camera, however, if the camera operates in a portable mode with a long cable it is recommended to use a special belt with clip to fix the cables.

Versions
LDK 6990/14 belt plus clip
LDK 6990/15 shoulder brace ENG
LDK 6990/16 light-weight shoulder brace with chest or waist support

LDK 8604/00
SPARE COMPONENT KIT FOR LDK 14

LDK 4830
EXTENDERS FOR LDK 14 SYSTEM

Versions
LDK 4830/00 Extender for camera LDK 14
LDK 4830/01 Extender for RCU, LDK 4370

LDK 8614
SET OF SPARE CAMERA MODULES

LDK 8615
SET OF SPARE SYSTEM MODULES FOR LDK 14
Versions
LDK 8615/00 PAL
LDK 8615/50 NTSC
LDK 8615/60 PAL M
LDK 8615/70 SECAM

LDK 8616/00
SET OF SPARE MODULES FOR LDK 4370
(Remote Control Unit)

LDK 8111/13
HEADSET WITH TWO EARPHONES

This headset with a special ruggedized female connector can be used for communication between LDK 14 camera and VTR or RCU.

LDK 8111/14
HEADSET WITH ONE EARPHONE

This headset can be used in lieu of the LDK 8111/13. It gives the cameraman more freedom, if the camera LDK 14 is carried on the shoulder.

LDK 6992/02
VIEWFINDER HOOD
(See page 38).

LDK 6400
SET OF CAMERA INDICATING NUMBERS
(See page 35).

Multicore Cables and Connectors
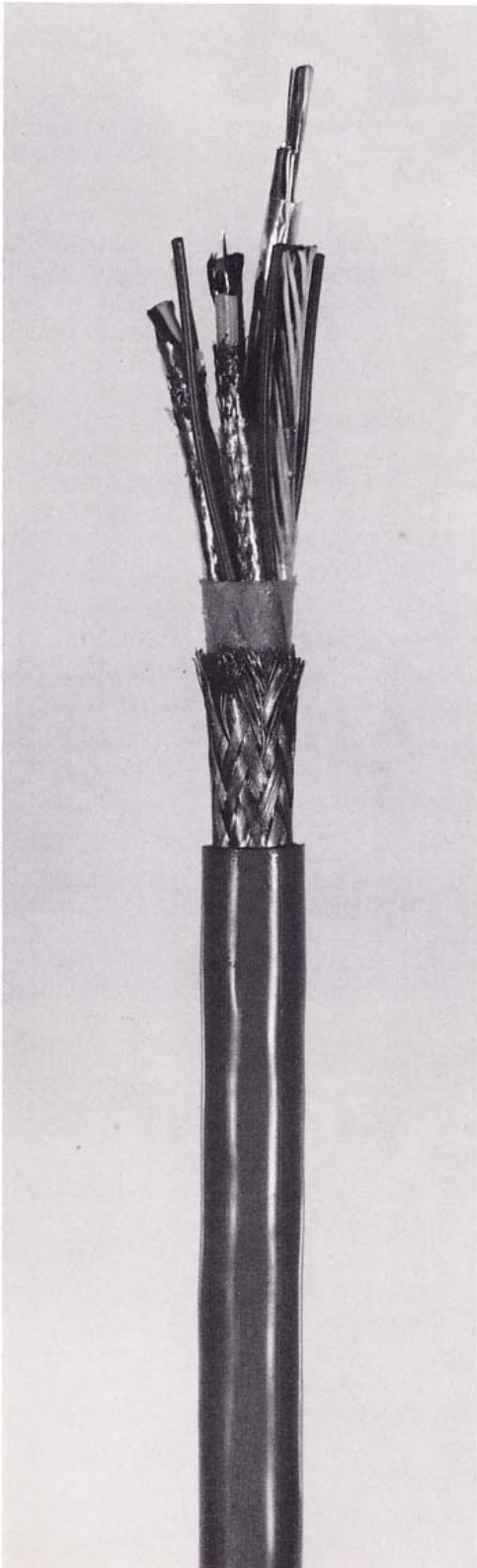
MULTICORE CAMERA CABLES

Three types of multicore cables are available fitted with connectors. The cables contain the following elements.
1. Coaxial cables (75 ohm)
2. Screened cores (e.g. for audio)
3. Unscreened cores (e.g. for tele-command)
The sheath for all cables is red PVC.

LDK 8100, DIAMETER 11 MM

VERSION	LENGTH (METRES)	CONNECTORS	APPLICATIONS
LDK 8100/00	2	19 pin ⎫	LDK 14
LDK 8100/01	10	19 pin ⎪	between camera-VTR
LDK 8100/05	50	19 pin ⎬	and
LDK 8100/10	100	19 pin ⎭	camera-RCU
LDK 8100/90	1·5	female 19 pin ⎫	LDK 14
		male 39 pin ⎪	To adapt LDK 8106
LDK 8100/91	1·5	female 19 pin ⎬	for LDK 14 remote
		male 39 pin ⎭	control (300 m)

LDK 8106, DIAMETER 13 MM

VERSION	LENGTH (METRES)	CONNECTORS	APPLICATIONS
LDK 8106/00	10	39 pin, straight ⎫	LDK 5 multicore mode
LDK 8106/01	100	39 pin, straight ⎬	LDK 25
LDK 8106/06	50	39 pin, straight ⎭	LDK 15 L
			between backpack and PPU
			or
			backpack and CCU

LDK 8130, DIAMETER 13 MM

VERSION	LENGTH (METRES)	CONNECTORS	APPLICATIONS
LDK 8130/00	2	61 pin, straight ⎫	LDK 15 L
LDK 8130/01	10	61 pin, straight ⎬	between camera and
LDK 8130/02	50	61 pin, straight ⎭	backpack

Triax Cables and Connectors
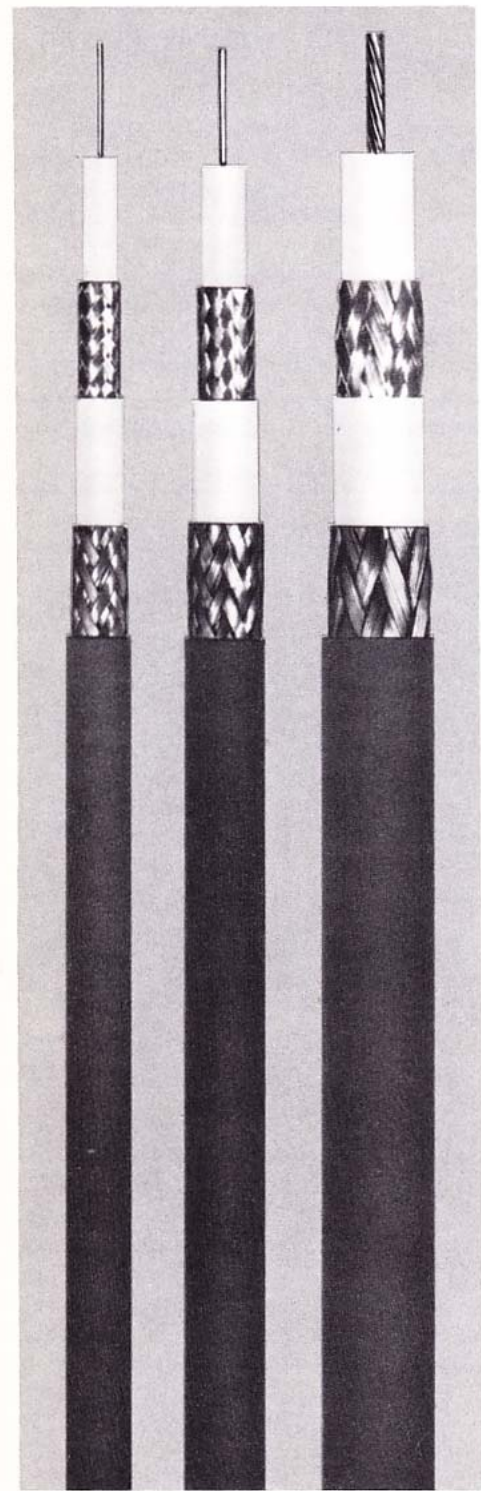
TRIAX CAMERA CABLES

Three diameters of triaxial camera cable can be delivered 8 mm ø, 11 mm ø and 14 mm ø. The sheath of all cables is red PVC.

Technical Data

	8 mm	11 mm	14 mm
Impedance	75 Ω ± 3%	75 Ω ± 3%	75 Ω ± 3%
Capacity	54 pF/m	54 pF/m	54 pF/m
D.C. resistance Inner conductor	25 Ω/km	12 Ω/km	6 Ω/km
D.C. resistance first screen	11 Ω/km	5·5 Ω/km	3 Ω/km
Attenuation at 40 MHz	5·6 dB/100 m	3·7 dB/100 m	2·4 dB/100 m
at 60 MHz	7·0 dB/100 m	7·0 dB/100 m	3·0 dB/100 m

STANDARD LENGTHS INCLUDING FITTED CONNECTORS

METRES	TYPE NUMBERS		
	8 mm ø	11 mm ø	14 mm ø
10	LDK 8107/01	LDK 8109/01	LDK 8112/01
50	LDK 8107/05	LDK 8109/05	LDK 8112/05
100	LDK 8107/10	LDK 8109/10	LDK 8112/10
150	LDK 8107/15	LDK 8109/15	LDK 8112/15
200	LDK 8107/20	LDK 8109/20	LDK 8112/20
300	LDK 8107/30	LDK 8109/30	LDK 8112/30

LDK 8200

Cable connector for triaxial cable.

Versions
LDK 8200/00 – male version for 8 mm ø
cable
LDK 8200/01 – female version for 8 mm
ø cable
LDK 8200/10 – male version for 11 mm
ø cable
LDK 8200/11 – female version for 11 mm
ø cable
LDK 8200/20 – male version for 14 mm
ø cable
LDK 8200/21 – female version for 14 mm
ø cable

LDK 8201

Straight adaptor, for connecting two
cable connectors of type number
LDK 8200.

Versions
LDK 8201/00 – male adaptor, for
connecting two female connectors
LDK 8201/01 – female adaptor, for
connecting two male connectors
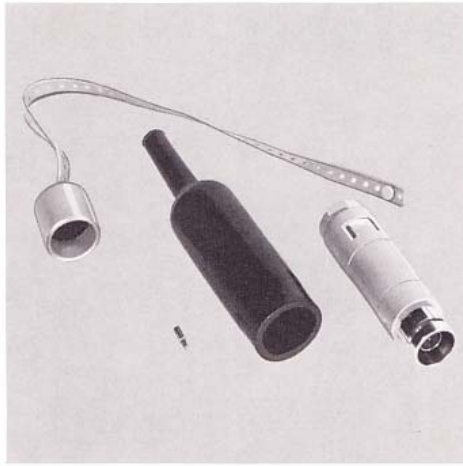
LDK 8202

Triaxial connector for panel mounting

Versions
LDK 8202/00 – male connector
LDK 8202/01 – female connector

Note: spare contact pins corresponding
to the above cables are available under
type numbers LDK 8203/00, 01, 10, 11,
20, 21.
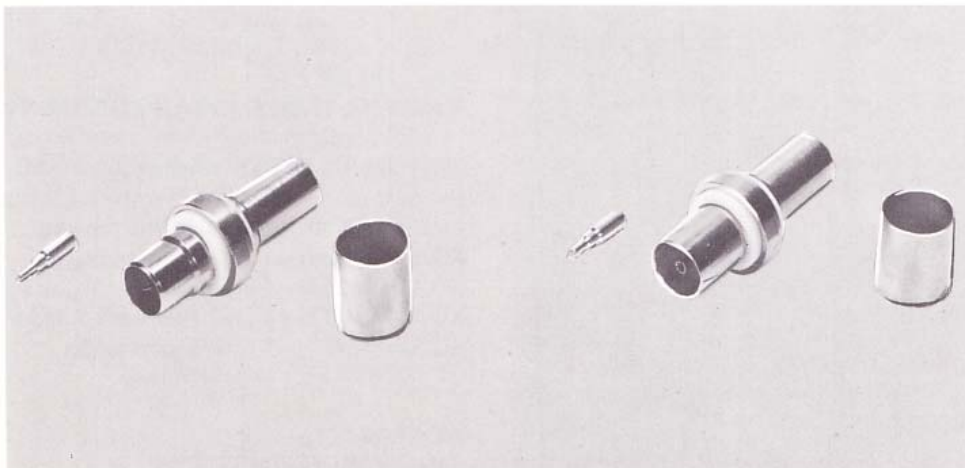
LDK 8203

Contact pin sets for triaxial connectors
(25 pieces).

Versions
LDK 8203/00 – contact pins ø1 mm, for
8 mm ø cable connectors
LDK 8203/10 – contact pins ø 1·5 mm,
for 11 mm ø cable connectors
LDK 8203/20 – service set for 14 mm
ø cable connectors, male (five pieces)
LDK 8203/21 – service set for 14 mm
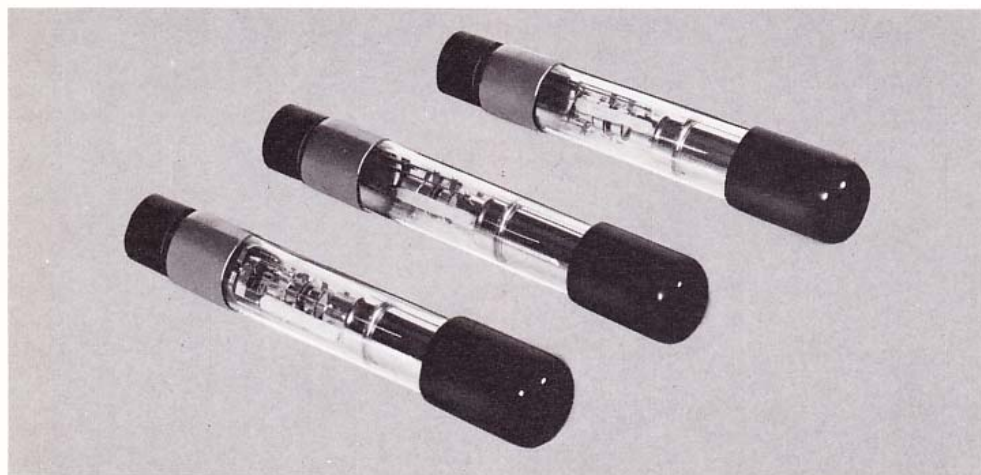ø cable connectors, female (five pieces)

LDK 8106

8993 997 49024

Hand crimping tool for triaxial cable
contact pins
Hand crimping tool for 14 mm ø cable
connectors
(Not available from PBEC in the USA)
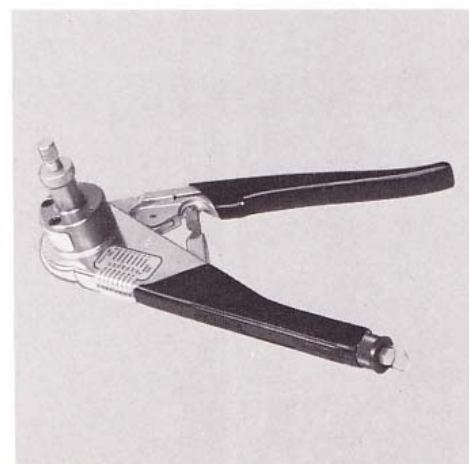
Plumbicon Camera Tubes

XQ 1080 R, G, B.
SET OF THREE 1 INCH ACT PLUMBICON CAMERA TUBES

These tubes, used in the LDK 5, LDK 15L, LDK 25, and LDK 65 cameras, are of the rear-loading type. Apart from their 1 inch diameter, these tubes have a number of important advantages over the conventional 30 mm types. First, owing to the anti-comet tail (ACT) electron gun design, which ensures perfect charge equalisation of the target, blooming and coloured comet tail effects no longer occur in picture areas with excessive brightnesses (up to 32 times the normal peak white level). Secondly, lag phenomena, ie. the blurring of quickly moving bright picture contours, are practically eliminated on account of the reduced target capacitance and the uniform bias lighting of the tube target. For bias lighting, the tube is equipped with an internal light pipe, which conducts the light from a small lamp at the tube socket. Thirdly, owing to the high degree of precision attained in the production methods of the tube and its deflection coil assembly, not only is an extremely accurate colour registration ensured, but also tube replacement without long resetting procedures is made possible.

XQ 1080 R 1 inch Plumbicon broadcast version with ACT gun and lightpipe, red.

XQ 1080 G 1 inch Plumbicon broadcast version with ACT gun and lightpipe, green.

XQ 1080 B 1 inch Plumbicon broadcast version with ACT gun and lightpipe, blue.

XQ 1085 1 inch Plumbicon broadcast version with ACT gun and lightpipe, extended red.

XQ 1500
PLUMBICON CAMERA TUBES

XQ 1500 RGB (XQ 1505)
1 inch ACT Plumbicon Camera Tubes

These tubes are the result of the latest developments of 1 inch ACT Plumbicon tubes. Externally the tubes do not differ from the XQ 1080's.
Electronically the XQ 1080 and the XQ 1500 are completely interchangeable, with the exception of the higher heater-current of the new tube.
All cameras of the LDK 5 family which will be delivered from the beginning of 1978 are adapted so that they can accept both tube types without any modifications. (Originally supplied cameras can be modified also, separate information is available.)
The XQ 1500/1505 series have a higher resolution (50% at 5 MHz for the green channel), a more uniform bias light and a longer average cathode life.

XQ 1070/00
CAMERA TUBES (FRONT LOADING)

XQ 1070 (Front Loading)
Set of three 1 inch RGB Plumbicon tubes for the LDK 2 colour camera
XQ 1070 R – 1 inch Plumbicon, red
XQ 1070 G – 1 inch Plumbicon, green
XQ 1070 B – 1 inch Plumbicon, blue
XQ 1075   – 1 inch Plumbicon, extended red

XQ 1070/02
## CAMERA TUBES (REAR LOADING)

XQ 1070/02 (Rear Loading)
Set of three 1 inch RGB Plumbicon tubes for the LDK 65 colour telecine camera
XQ 1070/02 R – 1 inch Plumbicon, red
XQ 1070/02 G – 1 inch Plumbicon, green
XQ 1070/02 B – 1 inch Plumbicon, blue
XQ 1075/02   – 1 inch Plumbicon, extended red.
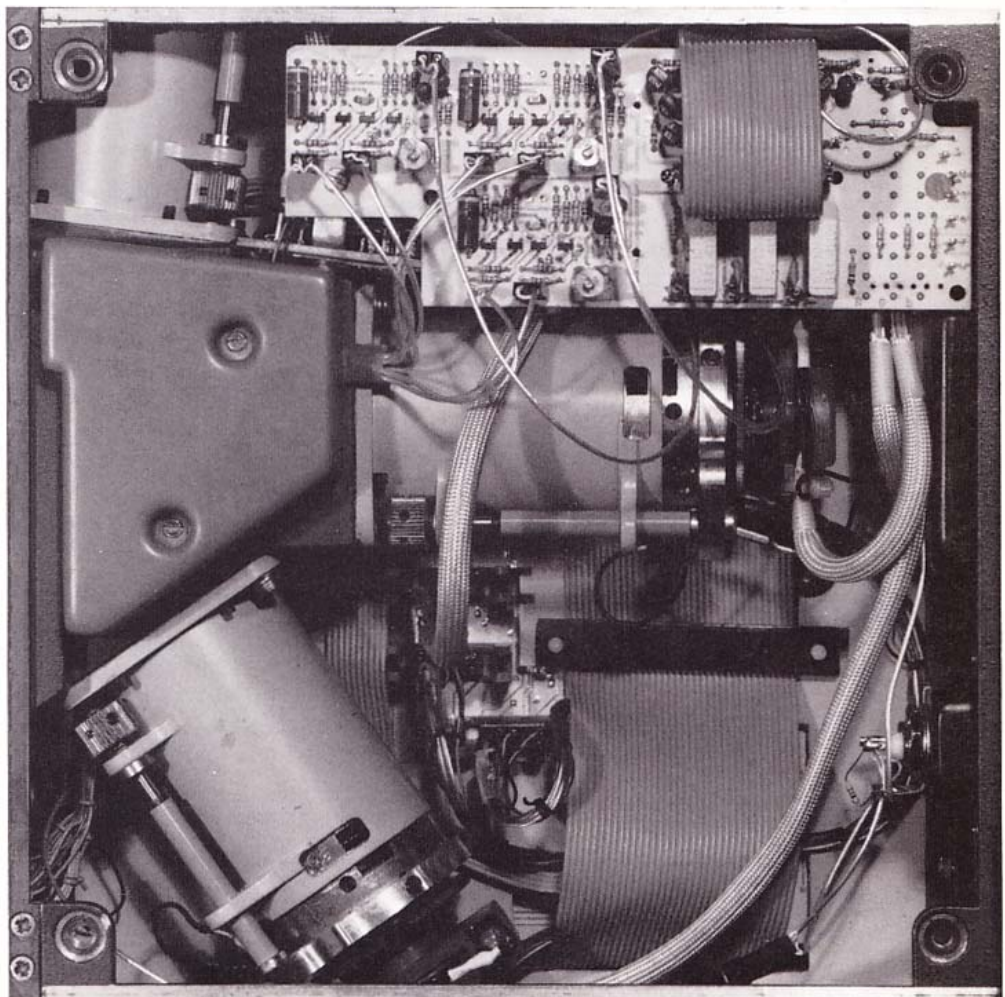
XQ 1240
1 INCH VIDICON TUBES

1 inch Vidicon Tubes
Set of three vidicon tubes for use as an alternative in the LDK 65 telecine camera.
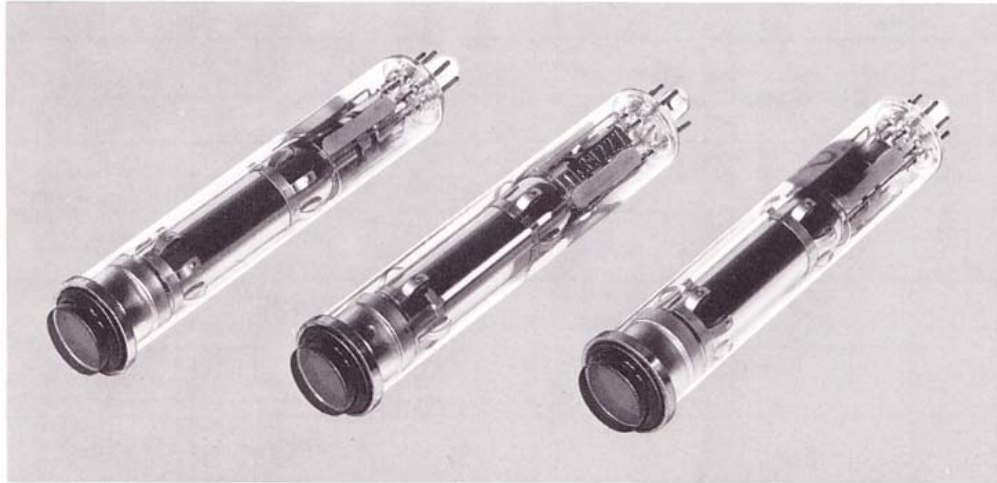
XQ 1427
⅔ INCH PLUMBICON TUBES

XQ 1427, RGB set of three ⅔ inch
Plumbicon camera tubes for use in the
LDK 14 portable camera.

COLOUR CAMERA LENSES

The various lenses for use with the Plumbicon colour television cameras types LDK 5, LDK 25, LDK 15L, LDK 2 and LDK 14, and their major lens properties, are given in the following tables.

TABLE OF ZOOM LENSES FOR PLUMBICON TELEVISION CAMERAS LDK 5 AND LDK 25

LENS PROPERTIES \ LENS TYPE	ANGÉNIEUX 15 × 14 E61		ANGÉNIEUX 42 ×		R.T.H. VAROTAL 30D		SCHNEIDER TV 70 VARIOGON		SCHNEIDER TV 30 × 16		SCHNEIDER TV 15 × 12·5		ANGÉNIEUX 42 × TELE	
LENS CONTROL	i)	ii)	i)	ii)	i)	ii)	i)	ii)	i)	ii)	i)	ii)	i)	ii)
FOCAL LENGTH	14–210 mm		12·5–525 mm		12–120 mm		14–150 rnm		16–480 mm		12·5–190 mm		24–1008 mm	
MAX. RELATIVE APERTURE	f/1·6		f/1·5		f/1·6		f/1·7		f/1·7		f/1·7		f/1·7	
HOR. ANGULAR FIELD OF VIEW	49°–3·5°		56°–1·5°		56°–6°		49°–5°		43°–1·5°		53°–3·9°		28·5°–0·5°	
MIN. OBJECT DISTANCE	0·64 m		0·64 m		0·45 m		0·7 m		0·85 m		0·4 m		4 m	
SMALLEST OBJECT FIELD	55 × 41 mm		17 × 22 mm		63 × 47 mm		80 × 60 mm		31 × 23 mm		38 × 29 mm		37 × 49 mm	
RANGE EXTENDERS	× 1·5, × 2, × 2·5		cont. zoom		× 2		× 1·5, × 2, × 2·5		no provision		× 1·7			
OVERALL LENGTH	480 mm				492 mm		390 mm		383 mm		475 mm			
PACKAGE WEIGHT	19 kg	19·5 kg	34 kg		20 kg		18 kg	20 kg	16 kg	18 kg	17 kg	19 kg	34 kg	

TABLE OF ZOOM LENSES FOR PLUMBICON PORTABLE TELEVISION CAMERA LDK 15L

LENS PROPERTIES \ LENS TYPE	ANGÉNIEUX 6 × 13 D2	ANGÉNIEUX 10 × 16 T11	CANON PV 10 × 12B	ANGÉNIEUX 15 × 12·5
LENS CONTROL	i)	ii)	iii)	iii)
FOCAL LENGTH	13–78 mm	16–160 mm	12–120 mm	12·5–188 mm
MAX. RELATIVE APERTURE	f/2·2	f/2·0	f/2·0	f/2·5
HOR. ANGULAR FIELD OF VIEW	52·5°–9·7°	43·5°–4·5°	56°–6°	54°–6°
MIN. OBJECT DISTANCE	0·4 m	1·4 m	0·45 m	0·6 m
SMALLEST OBJECT FIELD			57 × 43 mm	27 × 35 mm
RANGE EXTENDERS	—	—	—	× 1·6 + Retro Zoom and Tele Attachment
OVERALL LENGTH	248 mm	266 mm	213 mm	173 mm
PACKAGE WEIGHT	1·25 kg	2·95 kg	2·6 kg	2·5 kg

Note: i) = servo iris and manual focus and zoom
ii) = 3-function servo with or without shotbox
iii) = servo iris and servo zoom and manual focus

ZOOM LENSES FOR LDK 2 CAMERA

CAMERA TYPE LDK 2

LENS PROPERTIES / LENS TYPE	SCHNEIDER TV VARIOGON 5 × 25 LDH 6002/50 & 51		SCHNEIDER TV VARIOGON 10 × 17 LDH 6002/52 & 53 & 56			CANON TV 10 × 15 LDH 6002/54		R.T.H. VAROTAL XXIII-A
LENS CONTROL	LDH 6002/50 motorised iris and manual focus and zoom	LDH 6002/51 3-function motorised	LDH 6002/52 motorised iris and manual focus and zoom	LDH 6002/53 3-function motorised	LDH 6002/56 3-function servo	either motorised iris and manual focus and zoom	or 3-function motorised	motorised iris and manual focus and zoom
FOCAL LENGTH	25–125 mm		17–170 mm			15–150 mm		16–160 mm
MAX. RELATIVE APERTURE	f/1·7		f/2·0			f/2·0		f/2·2
HOR. ANGULAR FIELD OF VIEW	29°–6°		40·6°–4·4°			44·2°–4·9°		45°–4·5°
MIN. OBJECT DISTANCE	1·5 m		1·5 m			1·2 m		1·2 m
SMALLEST OBJECT FIELD	150 × 110 mm		108 × 81 mm			96 × 72 mm		89 × 67 mm
RANGE EXTENDERS	no provision		× 1·5 × 2 × 2·5			× 1·5 × 2		× 1·5
OVERALL LENGTH	276 mm		263 mm			216 mm		293 mm
PACKAGE WEIGHT	4·5 kg	5·5 kg	4 kg	5 kg	5 kg	6 kg	7 kg	6 kg

TABLE OF ZOOM LENS FOR PLUMBICON PORTABLE TELEVISION CAMERA LDK 14

LENS PROPERTIES / LENS TYPE	ANGÉNIEUX 15 × 9·5
LENS CONTROL	iii)
FOCAL LENGTH	9·5–142 mm
MAX. RELATIVE APERTURE	f/1·8
HOR. ANGULAR FIELD OF VIEW	54°–4°
MIN. OBJECT DISTANCE	0·60 m
SMALLEST OBJECT FIELD	27 × 35 mm
RANGE EXTENDERS	× 1·6/Retro Zoom/Tele. Att.
OVERALL LENGTH	164 mm
PACKAGE WEIGHT	2·5 kg

Lenses will be available from
Canon, Fuji, Rank Optics and Schneider Optics

LDK 4612
### PAINTING CONTROL UNIT FOR WHITE AND BLACK LEVEL ADJUSTMENT

This optional unit permits remote control of the individual channel gains and black levels from the vision control desk during programme shooting. It adjusts the red and blue channel gains and black levels with respect to those in the green channel. The unit includes a push-button switch to interrupt the control transmission path for enlargement of the control range.
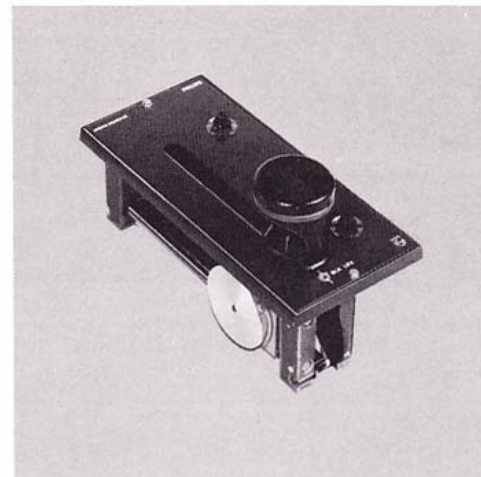
Versions
LDK 4612/00 – remote control unit for black and white painting with joysticks
LDK 4612/01 – remote control unit for black and white painting with slide controls

Technical data
Dimensions: 219 × 102 × 85 mm
(8½ × 4 × 3½ inch) (h × w × d)
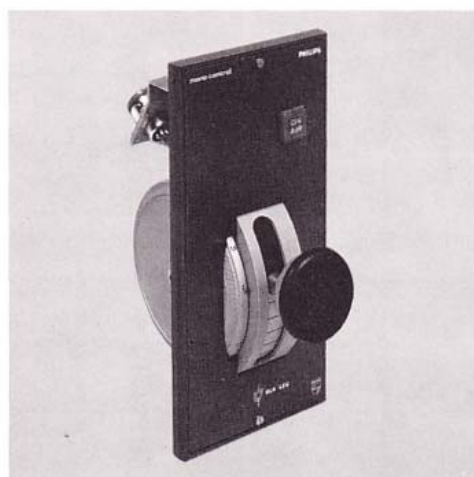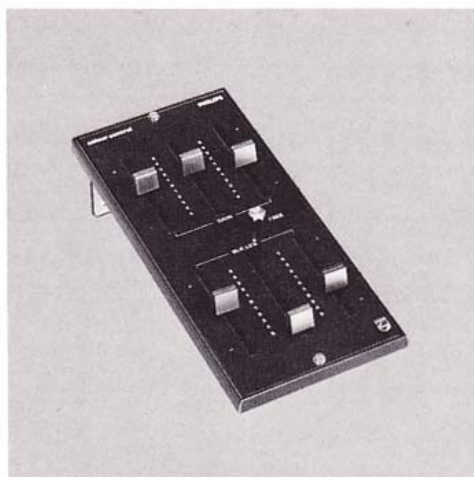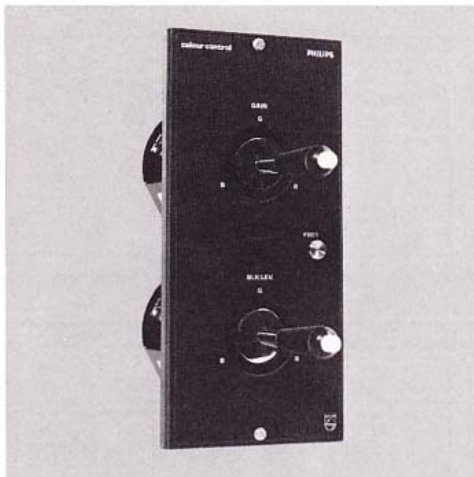
LDK 4613
MONOKNOB CONTROL UNIT FOR IRIS AND MASTER BLACK LEVEL ADJUSTMENT

The monoknob control unit is used for the remote operational control of lens iris and master black level. It is normally arranged together with the above-mentioned painting control unit in the vision control desk. The unit is available in versions with monoknob quadrant control and monoknob slide control. The number of iris stops controlled by the quadrant version can be preset by a thumbwheel alongside the control knob. That of the slide version by trimming potentiometers at either end of the slide control limits. By pushing down the monoknob, a microswitch is activated that switches the picture signal controlled on to the preview rail for display on picture and waveform monitors.

Versions
LDK 4613/00 – monoknob quadrant control unit for iris and master black level adjustment
LDK 4613/01 – monoknob slide control unit for iris and master black level adjustment
LDK 4613/02 – monoknob slide control plus: gain, filterwheel, colour temp. control, contrast compression, on/off

Technical Data
Dimensions: 219 × 102 × 80 mm
(h × w × d)

34
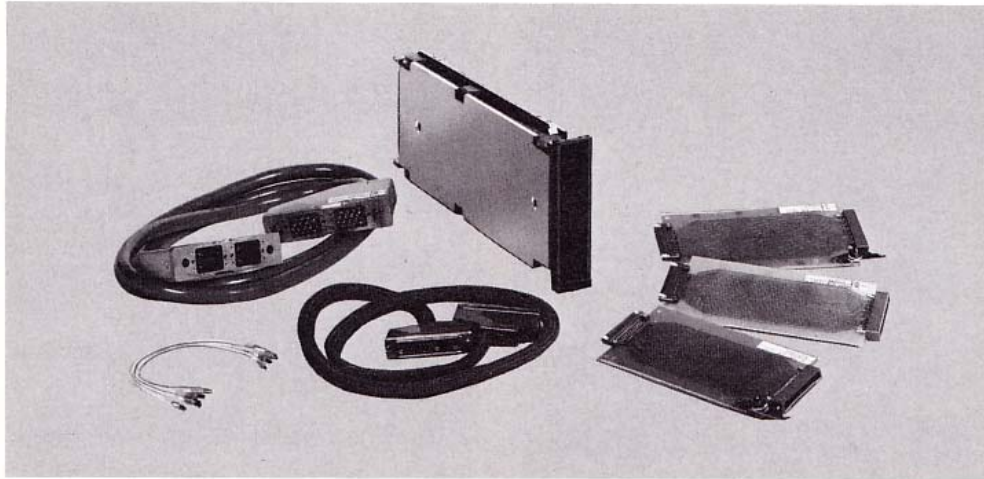
LDK 4850
SET OF MODULE EXTENDERS

The set facilitates servicing of the colour camera system by enabling electronic measurements of the modular circuits to be carried out during normal operation. It consists of the following 12 items: two card extenders for the camera modules; one card extender for the camera multiplexer boards; six coaxial extension cables for the camera multiplexer boards; one extension cable for the camera audio drawer; one module extender for the base station modules; one extension cable for the base station camera power module.

Versions
LDK 4850/00 – set of module extenders for LDK 0005, LDK 4300, LDK 4310, LDK 4315, LDK 6502, LDK 0015, LDK 4355, LDK 0025, LDK 4350
LDK 4850/01 – as LDK 4850/00, but including special extender for viewer module of LDK 4355

LDK 6400
SET OF CAMERA INDICATING NUMBERS

To identify cameras in studio or outside broadcast use, cameras are numbered. A set of indicating numbers consists of the numbers one to nine in pairs. The numbers are made of yellow polystyrene and are available in various sizes.

Versions
LDK 6400/00 Large for LDK 5, LDK 25 studio cameras
LDK 6400/01 Medium for portable cameras
LDK 6400/02 Small for RCUs of portable cameras

LDK 4614/00
COMBINED REMOTE CONTROL UNIT FOR IRIS MASTER-BLACK AND R G B PAINTING CONTROLS

Remote control unit for lens iris, master black level and the individual channel gains and black levels.
The unit includes a push button switch to interrupt the control transmission path for enlargement or resetting the control range and a push button to switch the call lamp on the camera viewfinder.

Technical data
Dimensions: 219 × 102 × 40 mm
($8\frac{5}{8}$ × 4 × $1\frac{1}{2}$ inch) (h × w × d)
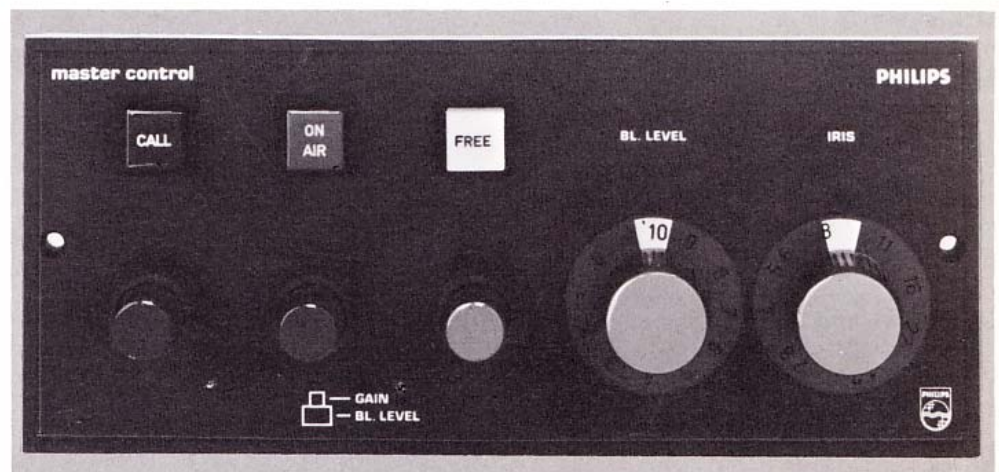
LDK 6500/00
19 INCH MODULE HOLDER FOR RACK MOUNTING

This universal module holder will accommodate two LDK 5 base station units, eg. the reception and camera power supply units, or two interconnection units type LDK 6502 (see below). The holder is fitted into a 19 inch rack by means of four screws. Height: 3 RUs ($5\frac{1}{4}$ inch).
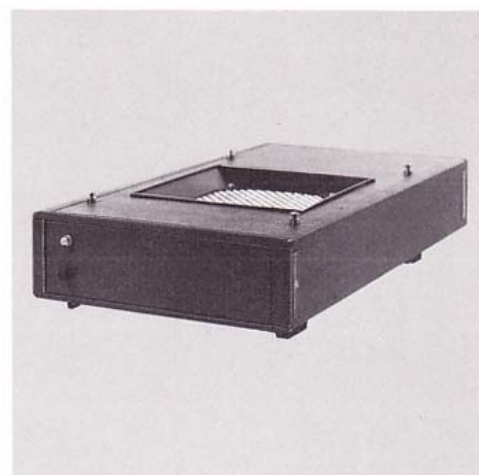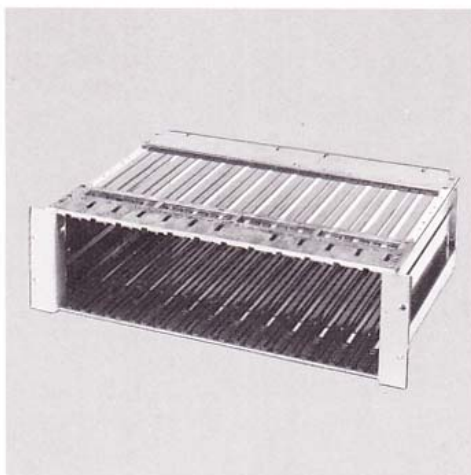
LDK 6500/01
PORTABLE CABINET OF HALF 19 INCH RACK WIDTH

Designed for mobile applications of the LDK 5 camera in outside broadcast work, this portable cabinet will accommodate one base station unit or one inter-connection unit type LDK 6502/00. It can be used in a travelling eye, boat or helicopter employed in on-the-spot television reporting. Height: 3 RUs ($5\frac{1}{4}$ inch).
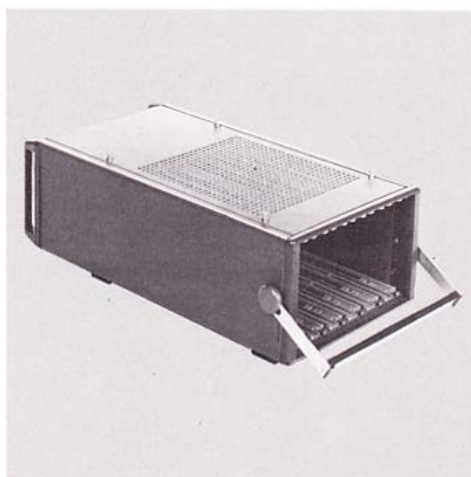
LDK 6501
VENTILATOR UNIT

Ventilator units designed for use in conjunction with the LDK 6500/01 portable cabinet and LDK 6500/00 and 6500/02 module holders. The ventilator is fitted against the bottom of the cabinet or module holder and provides efficient cooling for the base station unit housed in the cabinet or module holder.
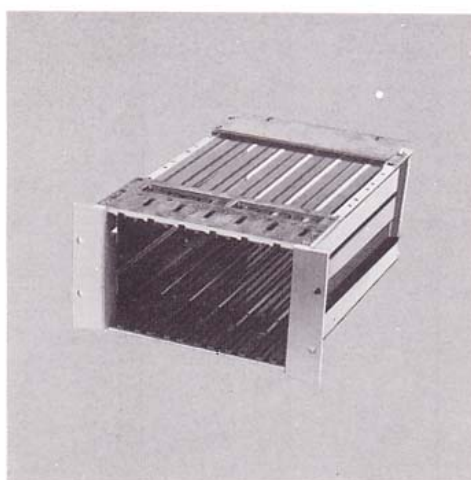
Versions
LDK 6501/01 – ventilator unit of half 19 inch rack width for use with portable cabinet LDK 6500/01

Note: When the base station is housed in three portable cabinets LDK 6500/01, only 1 ventilation unit LDK 6501/01 is required
LDK 6501/02 – ventilator unit for use with module holders LDK 6500/00 and LDK 6501/00

Note: two ventilation units LDK 6501/02 to be used with module holder LDK 6500/00

LDK 6500/02
HALF 19 INCH MODULE HOLDER FOR RACK MOUNTING

Particularly suitable for use in outside broadcast vans, this special module holder of half 19 inch width can accommodate one LDK 5 base station unit. Height: 3 RUs ($5\frac{1}{4}$ inch).
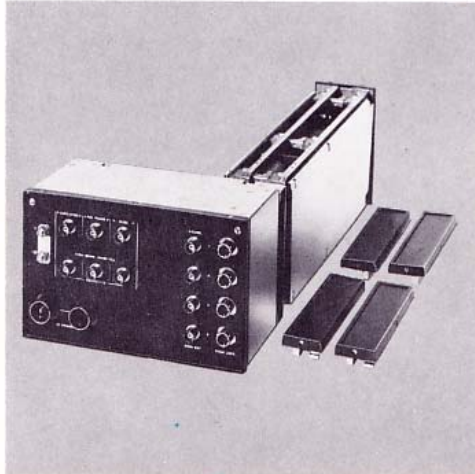
Technical data
Height: $1\frac{1}{2}$ RUs ($2\frac{5}{8}$ inch)
Power supply: 110/220 V a.c. consumption 19 VA

LDK 6502
INTERCONNECTION UNIT WITH POWER SUPPLY MODULE AND FOUR BLANK PANELS

Intended for use in broadcast studios to enable the centralised sync-locking of up to four LDK 5 colour cameras, the interconnection unit will accommodate up to four sync-lock units type LDK 4322. The power supply unit can feed two sync-lock modules LDK 4322. A connector is available at the inter-connection unit for an external power source eg. PE 1221 and PE 1386, front panel, when four sync-lock units are powered. The unit is of half 19 inch rack width and can be mounted into a rack or cabinet. Height: 3 RUs ($5\frac{1}{4}$ inch).

LDK 6503
WEDGE ADAPTOR PLATE

The wedge adaptor plate enables mounting of the LDK 5 and LDK 2 colour cameras on Vinten, Debrie and Killy type heads. The plate is fitted to the camera bottom or camera support by means of four 6 mm screws, two each at the front and rear.
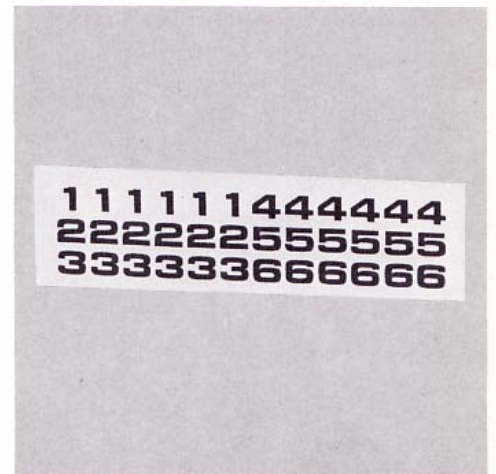
LDK 6991/02
INDICATING NUMBERS 0 TO 9 INCLUSIVE

The numbers serve to distinguish between the same units of two or more base stations arranged together. The sets consist of yellow stickers 18 mm × 18 mm in size, with the numbers 0 to 9 printed in black.
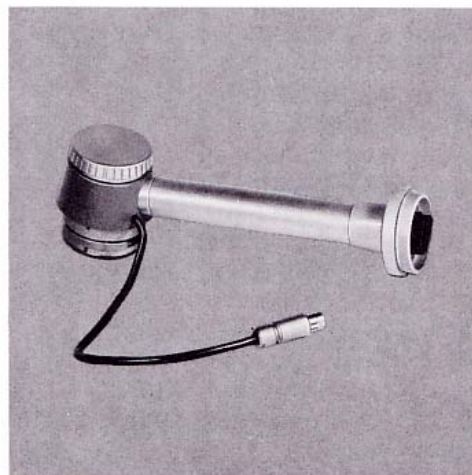

LDK 6511
ZOOM CONTROL ADAPTOR FOR LDK 5 FOR SERVO-CONTROLLED CAMERA LENS

For servo control of the lens function the lens manufacturers supply zoom and focus demand units with or without shot box.
Focus demand unit and shot box are fitted into the camera side by means of a quick loading device.
To fit the zoom demand unit into the camera side, this adaptor piece is necessary.
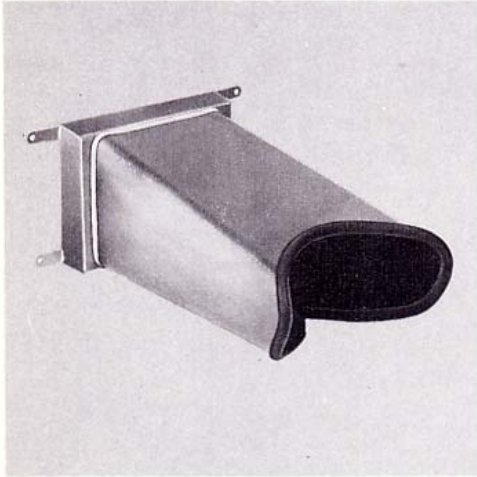
LDK 6992
VIEWFINDER HOOD

For outside broadcast work, it may be
necessary to replace the standard
viewfinder hood with one providing full
screening. The LDK 6992/00 hood is
particularly suitable for use in outside
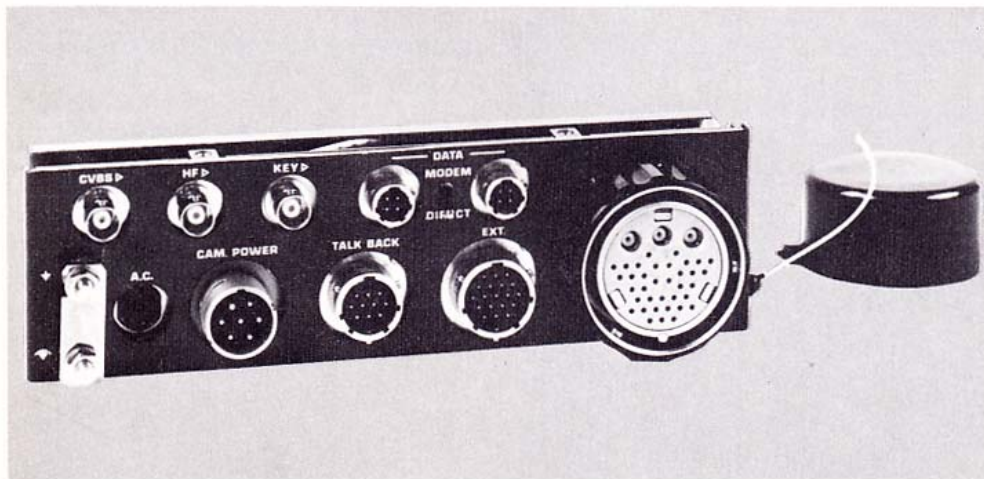broadcasting because it fully encloses the
viewfinder picture screen.

Versions
LDK 6992/00 for viewfinder
LDK 4305/00
LDK 6992/02 for viewfinder 4308/01
LDK 4306/00

LDK 8108
CAMERA CABLE ADAPTOR BOX

The camera cable adaptor box is required
for operating the LDK 5 colour camera
system in the coaxial cable and RF
modes. These modes involve the transfer
of the camera power supply unit
LDK 4315 from base station to camera
position, because the camera cannot be
powered from the base station over the
coaxial or RF link. The adaptor box is a
passive element interconnecting a
multicore camera cable with a coaxial
cable and a two-wire power supply cable.
It can be mounted into an LDK 6501/01

ventilator unit or, using the special
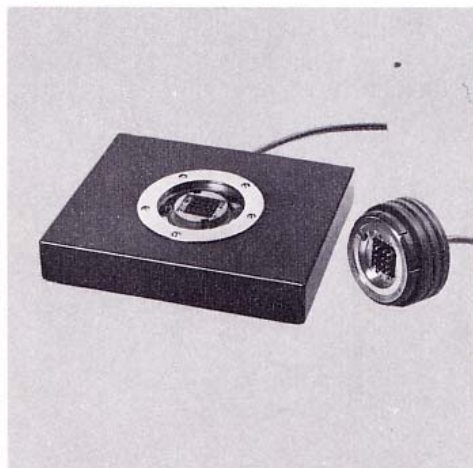adaptor plate included in LDK 8108, into
an LDK 6500/00 module holder.

Note: The LDK 8108 can be housed
either in a 19 inch rack by means of rack
mount LDK 8115 or in the ventilation unit
LDK 6501/01.
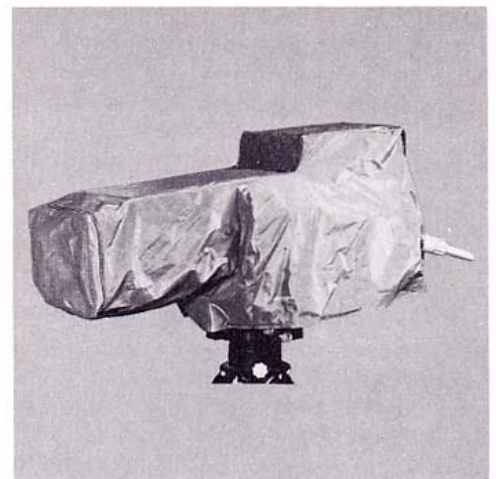
LDK 6993/01
CAMERA RAIN AND OFF-USE
COVER FOR LDK 5 OR LDK 25

Made of plastified canvas, and provided
with flaps and zippers for access to the
camera lens, lens controls and viewfinder,
this cover is equally suitable for
protecting the camera and its lens against
dust and scratching when off-use for
longer periods, and against rain during
outside broadcast operation. The cover is
drawn over the lens and camera and
fastened in position by a string running
through eyelets in the hem.

LDK 8110
EXTENSION CABLE FOR CAMERA ELECTRONIC VIEWFINDER MONITOR

LDK 8111
HEADSET WITH CONNECTOR

For various applications a range of headsets are available (one earphone or two earphones) depending on standardisation in the studio the headphones can be delivered with special connectors.

This extension cable with a length of 10 m enables the camera viewfinder to be removed from the camera and used up to that distance away from it when, for instance, the camera is mounted on a boom or crane and remotely operated. The extension cable terminates at one end in a connector mounted in a base plate, designed to take the viewfinder.

Versions
LDK 8110/00 – extension cable for
LDK 5 camera viewfinder LDK 4305
LDK 8110/01 – extension cable for
LDK 25 camera viewfinder LDK 4306

Versions
LDK 8111/00 – two earphones, AKG male Fischer plug
LDK 8111/01 – two earphones, AKG, Western Electric plug
LDK 8111/10 – two earphones, Amplivox, male Fischer plug
LDK 8111/11 – one earphone, Amplivox, built in amplifier, male Fischer plug
LDK 8111/12 – one earphone, Amplivox, without amplifier, male Fischer plug
LDK 8111/13 – two earphones, Amplivox, female Fischer plug
LDK 8111/14 – one earphone, Amplivox, female Fischer plug
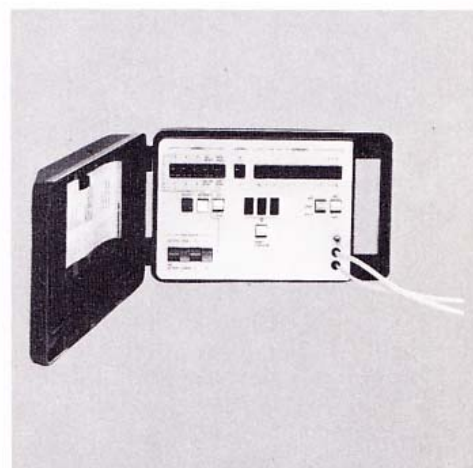
8993 522 80001
DATA TEST UNIT FOR LDK 5, LDK 15L

Test unit for the digital control system of LDK 5 and LDK 15L. With this unit connected to the surveillance unit it is possible to simulate changes in settings of all control functions of the surveillance unit and all sync-lock functions either manually or automatically. This facilitates checking and measuring of the digital system in the camera head or PPU and of a large number of functions in the surveillance unit.
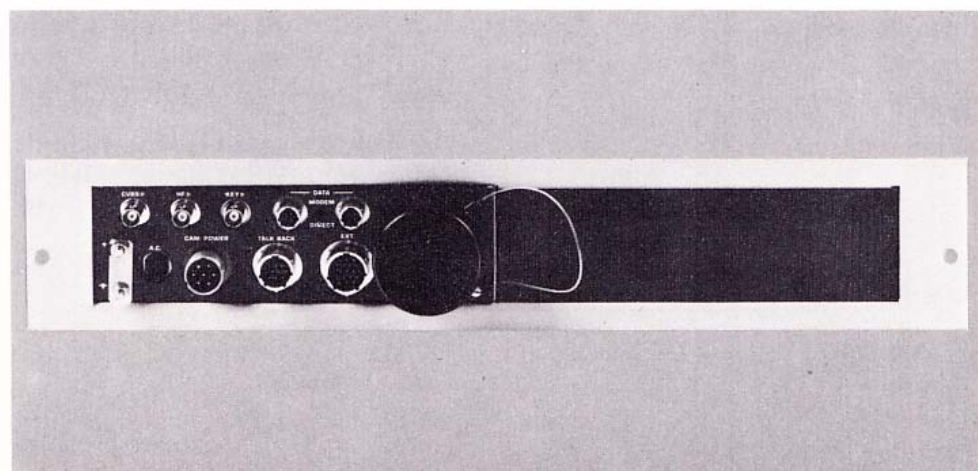
LDK 8115
19 INCH RACK MOUNTING UNIT

Metal 19 inch rack mounting unit to accept two LDK 8108 camera cable adaptor boxes, each of half 19 inch width.
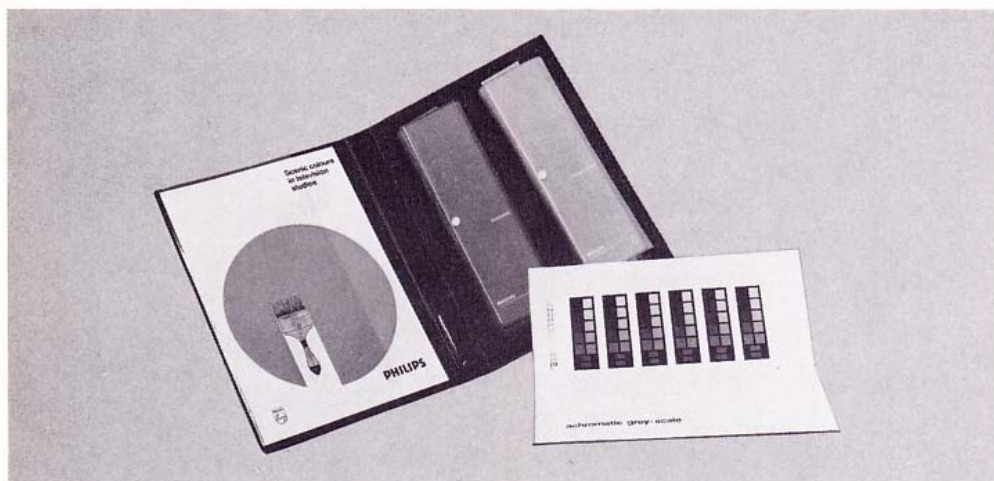
LDK 8501
SCENIC COLOUR PAINT SCHEME

The scheme provides a reliable working
method for the colour television scenery
designer, and ensures true reproduction
of the colours selected for a particular
scene. The scheme consists of a folder
containing two sachets with saturated
and desaturated graded colour scales, 12
achromatic grey scale test charts for use
in camera line-up, and a brochure giving
a detailed description of the scheme.
Basically, the scheme uses scenic colours
which, after reproduction by the colour
television medium, have a well-defined
phase angle (or colour tone) and vectoral
length (or combination of luminance and
saturation) when displayed on a colour
television vectorscope. The scheme
provides 372 different colour tones,
which can all be made from 29 stock
paints. Additional graded colour scales
and grey scale test charts may be ordered
separately, as listed below.

Versions
LDK 8501/00 – complete scenic colour
paint scheme with colour and grey scale
cards
LDK 8501/01 – saturated and de-
saturated colour scale cards
LDK 8501/02 – set of 12 achromatic grey
scale test charts
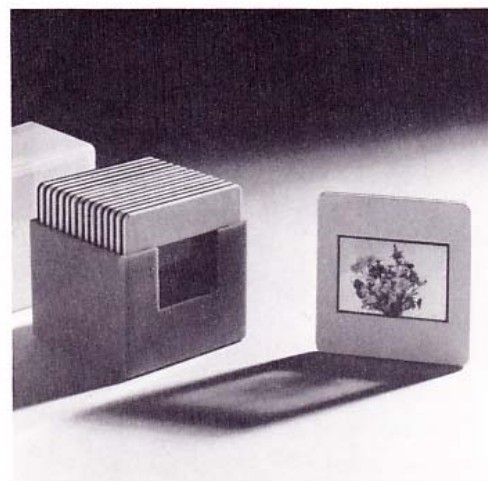
LDK 8676
SET OF 15 COLOUR TEST SLIDES

These standard test slides are used in
visual colour performance tests or as test
pictures during intervals in television
programmes. They can be inserted in slide
adaptors in front of the television camera
lenses to test the overall performance of
the camera chain and transmission system
before takes, or in slide scanners to test
the adjustment of display systems. The
slides will show specific defects in colour
performance, and will facilitate diagnosis
without resort to a colour bar generator,
waveform monitor or vectorscope.

Camera Spares

SPARES FOR LDK 5 AND LDK 15L CAMERAS
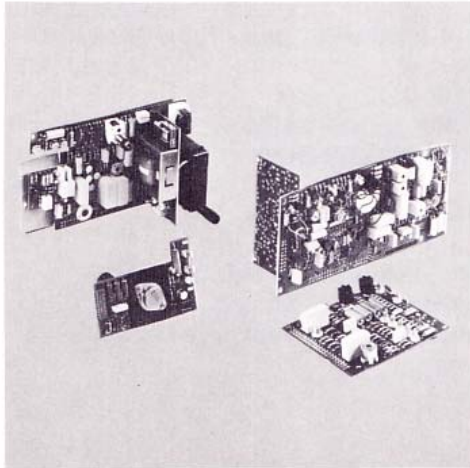
LDK 8605/00
SET OF SPARE PC BOARDS FOR VIEWFINDER LDK 4305/00

A complete set of all PC boards for viewfinder LDK 4305/00

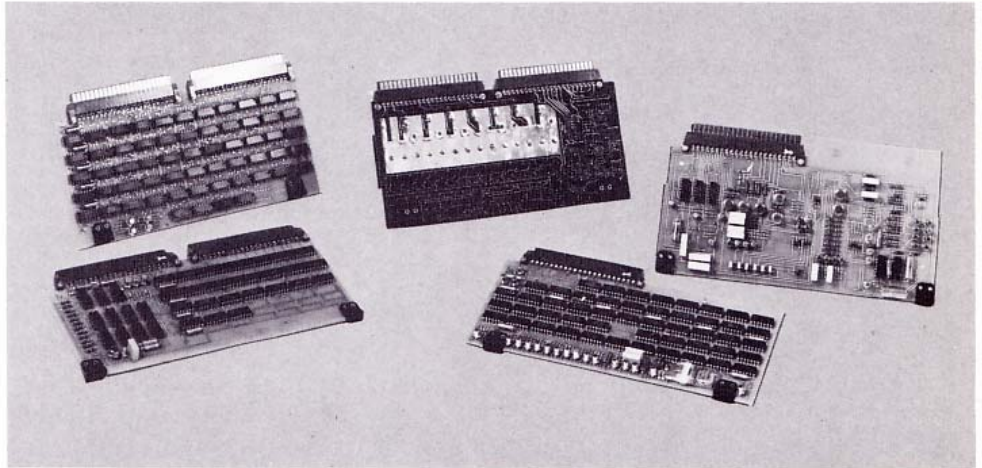**SET OF SPARE PC BOARDS FOR LDK 5 CAMERA HEAD**

A complete set of spares for the LDK 5 camera head excluding viewfinder and base station consists of:
LDK 4320/ depending on TV system
LDK 8602/00
LDK 8602/05
LDK 8602/10

SET OF SPARE PC BOARDS FOR LDK 15 L CAMERA HEAD AND BACKPACK

A complete set of spares for the LDK 15L camera head and backpack excluding viewfinder, PPU and base station consists of:
LDK 8602/00
LDK 8602/16

SET OF SPARE PC BOARDS FOR LDK 15L PPU

A complete set of spares for the LDK 4355 portable processing unit consists of:
LDK 4320/ depending on TV system
LDK 8602/05
LDK 8602/20

LDK 8601/00
SET OF SPARE PC BOARDS FOR SURVEILLANCE UNIT LDK 4310

The set serves for the replacement of a surveillance unit board that has been put out of order by a circuit failure or a mechanical breakdown. It consists of the following five PC boards: 'control', 'analogue-to-digital convertor', 'data multiplexer', 'modulator' and 'surveillance timing'.

**LDK 4300/00
RECEPTION UNIT**

For description, please see p. 4.

**LDK 4315/00
POWER SUPPLY UNIT**

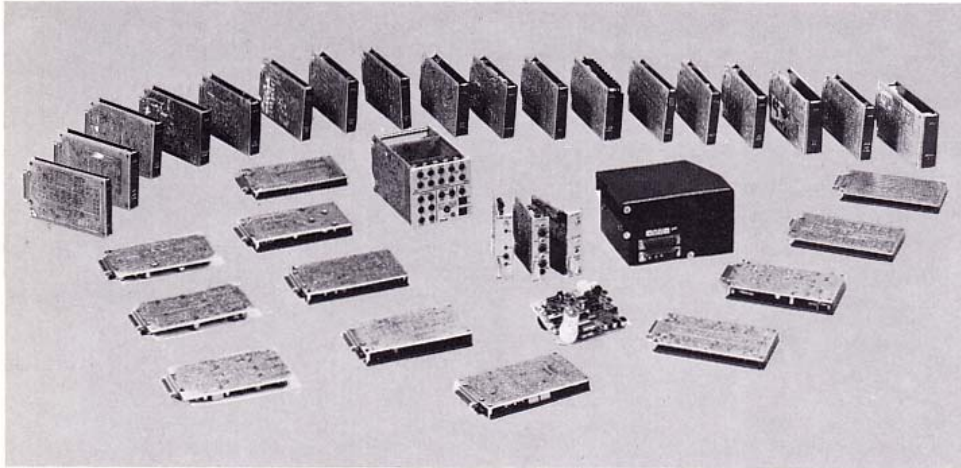For description, plesase see p. 5.

**LDK 4321
SET OF SYSTEM-DEPENDENT
RECEPTION UNIT MODULES**

For description, please see p. 6.

**LDK 4322
SYNC-LOCK MODULE FOR
RECEPTION UNIT**

For description, please see p. 7.

These units can be ordered without
interconnecting unit when the
interconnecting units are not required as
spare.

**LDK 8602/00
SPARE SYSTEM-INDEPENDENT
MODULES COMMON TO LDK 5
AND LDK 15L**

Set of four modules.

**LDK 8602/05
SPARE SYSTEM-INDEPENDENT
MODULES COMMON TO LDK 5
AND LDK 4355 PPU**

Set of 23 modules.

**LDK 8602/10
SPARE SYSTEM-INDEPENDENT
MODULES SPECIFIC TO LDK 5**

Set of 11 modules.

**LDK 8602/16
SPARE SYSTEM-INDEPENDENT
MODULES SPECIFIC TO LDK 15L**

Set of 17 modules.

**LDK 8602/20
SPARE SYSTEM-INDEPENDENT
MODULES SPECIFIC TO LDK 4355
PPU**

Set of six modules.

**LDK 4320
SET OF SYSTEM-DEPENDENT
CAMERA MODULES**

This set of seven modules, which is
available in four versions, enables the
operation of the LDK 5 and LDK 15L
colour cameras in accordance with the
different TV systems.
For full description, see p.6

**LDK 4360
ENCODER MODULES FOR LDK 4350**

(see p.14)

**LDK 4330/10
AUTOWHITE SYSTEM**

(see p.15)

**LDK 4332
AUTOMATIC CENTRING MODULE**

(see p.15·)

**LDK 4333/10
AUTO IRIS MODULE**

(see p.15)

**LDK 4365
CONTOUR DELAY MODULE**

(see p.14)

**SPARES FOR CAMERA
LDK 25**

**LDK 8610
SET OF SPARE MODULES FOR
LDK 25 CAMERA AND LDK 4350
CAMERA CONTROL UNIT**

Versions
LDK 8610/00 – set of spare modules for
camera LDK 0025/00
(F & G camera cable and intercom system
'A')

LDK 8610/10 – set of spare modules for
LDK 4350/00 camera control unit
(F & G camera cable and intercom system
'A')
LDK 8610/50 – set of spare modules for
camera LDK 0025/50
(TV 81 camera cable and intercom system)
LDK 8610/60 – set of spare modules for
LDK 4350/50 camera control unit
(TV 81 camera cable and intercom system
LDK 8605/00 – set of spare PC boards for
LDK 25 viewfinder LDK 4306/00

Retrofit Sets

LDK 8550/00
VARIABLE FAN SPEED CONTROL FOR LDK 5

Fan cooling system with automatic control of fan speed according to the ambient temperature.
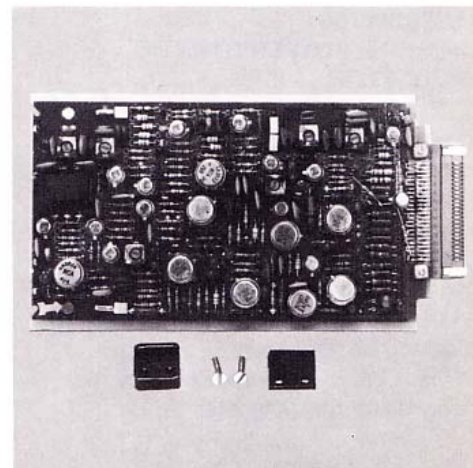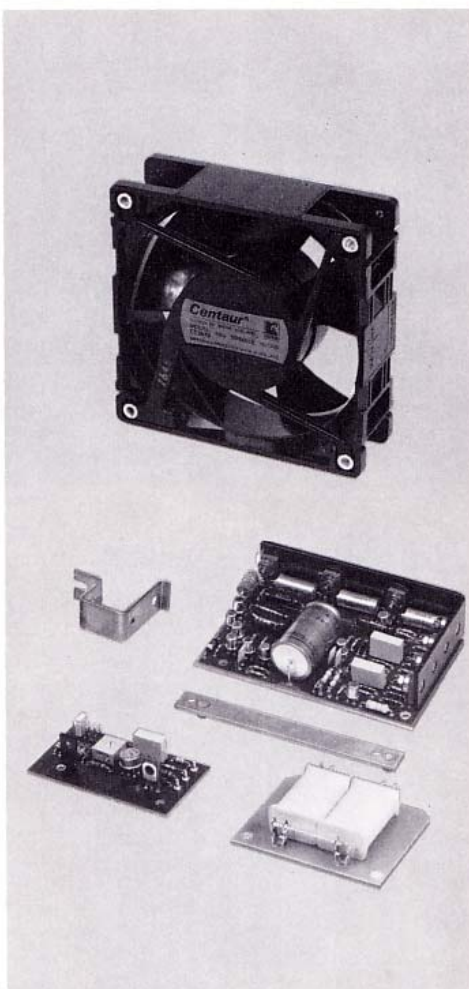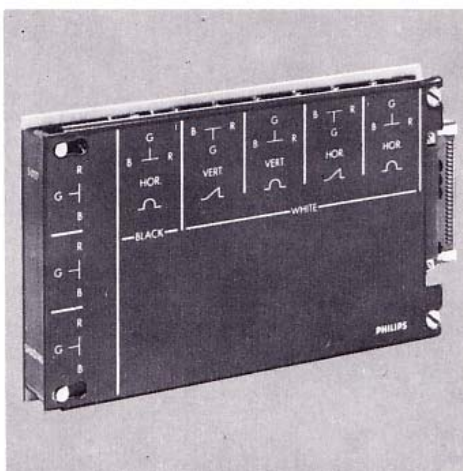
LDK 8550/01
SHADING UNIT FOR LDK 5, 15, 25

The shading unit contains the circuits which produce the black and white shading signals, as well as the associated potentiometers.

The following functions can be controlled:
With shading: horizontal and vertical R, G and B parabola and sawtooth
Black shading: horizontal and vertical R, G and B parabola and sawtooth

LDK 8550/02
VIDEO PROCESSOR WITH GAMMA BOARD FOR LDK 5, 15, 25

The video processor contains two separate gamma circuits, of which one is located on a separate board plugged to the main processor board.

LDK 8550/03
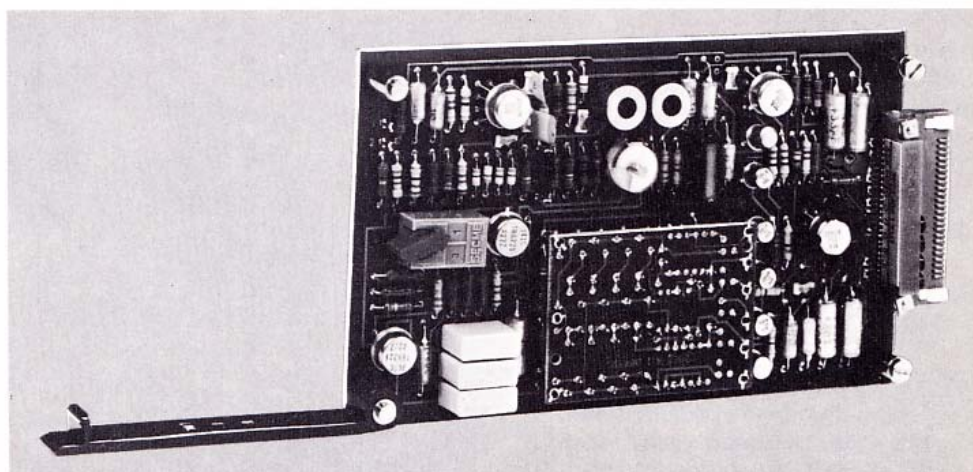## MULTIPLEXER TRANSMITTER FOR LDK 5 AND LDK 15

The transmitter sends the main video signal from the camera head to the base station and provides the facility to retain transmission of the burst during monitoring as well as during normal transmission.

LDK 8550/04
RETROFIT SET FOR SURVEILLANCE UNIT

LDK 8550/05
VIEWFINDER PUSHBUTTONS

To reduce the 'click'-noise caused by the latch of the RGB and Y pushbuttons, electronically interlocked low noise pushbuttons can be delivered. Indicator lamps indicate which video channel is switched on.
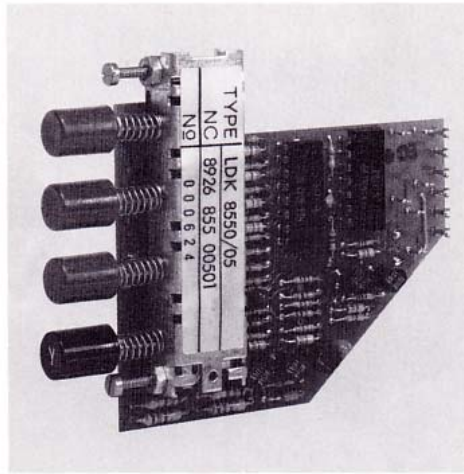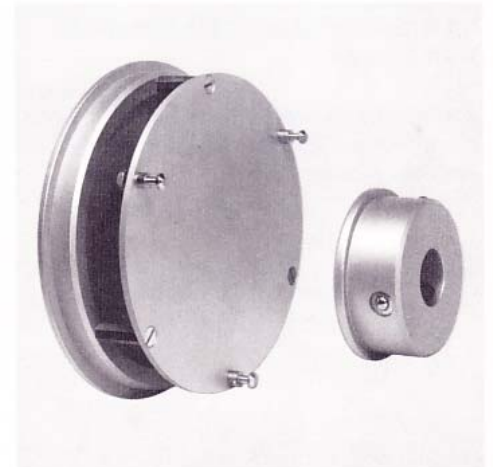
LDK 8550/06
CAMERA POWER STATUS INDICATOR

Indicator lamps on the camera power driver module help in case of a fault in the power system to allocate the defective circuit.
RED LED: short in camera cable, connector or camera input.
AMBER LED: starting voltage available (approx. 30 V).
GREEN LED: 100 V available, return information from camera.

LDK 8550/08
MEMORY MODULE

This memory module has a low power consumption memory and associated circuitry. With a fully charged battery the memory will be kept alive more than 700 hours. A 15 minutes charge of an empty battery will be sufficient for more than 10 hours.
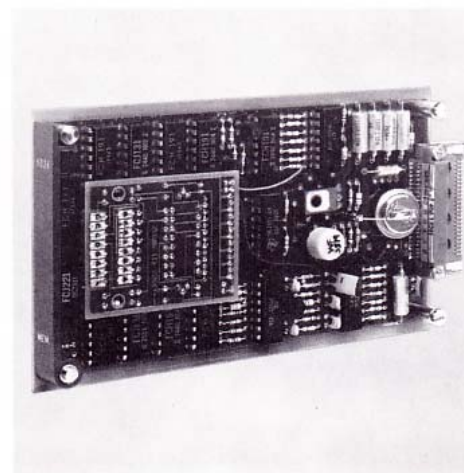
LDK 8560/02
CAMERA HOUSING BLANKING PLATES

These plates are used on the LDK 5 and LDK 25/01 cameras to cover the lens control interface holes on the camera body.
The plates are used when the camera lens is controlled externally (servo control or manual control).

LDK 8550/09
CONTOUR PROCESSOR WITH EDGE OF BAND CONTOURS

Using this contour processor edge of band horizontal, colours are produced at approximately 5 MHz giving extra crispness to the pictures. Also gamma positions are incorporated (Lin, Gamma 1 and Gamma 2).

LDK 8560/01
CAMERA TUBE ALIGNMENT SET

Set of three clamping units for positioning Plumbicon camera tubes accurately into the camera yoke for LDK 5, 15L and 25 cameras.

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