SERVICE APRES-VENTE BOLEX
AFTER-SALES SERVICE
KUNDENDIENST

PIECES DE RECHANGE ET INSTRUCTIONS TECHNIQUES
ERSATZTEILE UND TECHNISCHE ANLEITUNGEN
SPARE PARTS AND SERVICE INSTRUCTIONS

CAMERAS  H16M-RX-SB  251 501
KAMERAS   H16EBM     300 401
CAMERAS

H3

EDITION 1971
PIECES DE RECHANGE ET INSTRUCTIONS TECHNIQUES
ERSATZTEILE UND TECHNISCHE ANLEITUNGEN
SPARE PARTS AND SERVICE INSTRUCTIONS

CAMERAS
H16M-RX-SB 251 501
H16EBM 300 401

EDITION 1971
You are requested to file in this service manual all the corresponding printed matters which you will receive henceforward and to check the information contained therein whenever you wish to compile a spare parts order.

All technical documentation is supplied to your service department on a loan basis and must by no means be handed over to third parties.

BOLEX INTERNATIONAL S.A.
After-Sales Service

CH-1450 Ste-Croix / Switzerland

Every document of this catalogue is composed of numbered "boxes" respectively "columns" containing the following information:

Box No. 1: The type of document, i.e.
- TM = index: white paper
- INTRODUCTION: white paper
- PD = spare parts sheet: white paper
- IT = technical instructions:
- PM = modification sheet:

Filing order:
IT are filed after the corresponding spare parts sheets. If there are several versions of the subject, additional PD may be issued. If no special IT are elaborated, the technical instructions belonging to the original PD are also valid for the additional PD.

PM are filed so as to face the corresponding PD or IT, according to the indication in box 9. **

Box No. 2: The name of the subject treated.
Box No. 3: The product to which the treated subject belongs.
Box No. 4: The serial number indicating the introduction of the subject treated. (Approx.)
Box No. 5: The trade mark of the manufacturer.
Box No. 6: The name of the catalogue (see also label on back of folder).
Box No. 7: The issuing date of the document.

Filing order:
- INTRODUCTION sheets: Of all the INTRODUCTION sheets bearing the same indications in boxes 1 - 6 - 11, only the sheet with the latest issuing date must be kept.
- TM, PD and IT : Of all the sheets bearing the same indication: in boxes: 1 - 6 - 10 - 11 (1 - 6 for TM), only the sheet with the latest issuing date must be kept.

ATTENTION : When discarding a superseded sheet, be sure that the corresponding FM are eliminated at the same time!

- FM : Of all the FM bearing the same indications in boxes 1 - 6 - 9 - 11, only the sheet with the latest issuing date must be kept.

Box No. 9 : The language in which the document is printed:
* = trilingual
F = French
D = German
E = English.

Box No. 9 : Space reserved for special indications.

On the FM, this space contains the specifications in box 1 - 10 - 11 - 7 of the PD or IT for which the FM is valid.

Box No. 10 : Letter of tab under which the PD and IT are filed.

On the IT this section is divided into two parts, the lower showing the page number of the PD whereafter the IT are filed.

Box No. 11 : The page number.

Filing order:

- TM, INTRODUCTION sheets, PD and FM : Arabic numerals in numerical order.
- IT : Roman numerals in numerical order.

Box No. 12 : On INTRODUCTION sheets : miscellaneous

- On PD : "exploded view" drawings with part numbers
- On IT : text.

Box No. 13 : Sketches illustrating the technical instructions.

Column No. 15 : The number of the respective modification.

Column No. 16 : The old parts, valid before the introduction of the modification.

Column No. 17 : The new parts, valid after the introduction of the modification.

Column No. 18 : Explanatory notes.

**) On receipt of a FM, you should rectify immediately the corresponding document.
As a rule, compound parts which have only one or no symbol at all, cannot be dismantled. Their components are, consequently, not available separately.

......
Design available.

(........+)
Part not available.

(........+)
Superseded design. Available as stock lots.

(........+)
Faulty parts, to be returned for exchange. Cheap parts may be destroyed.

Moreover, this sign constrains the repairman to fit the new version on any apparatus equipped with the old one, no matter for which reason the apparatus is submitted to him.

(........+)
Available for fully equipped service stations.

Parts appearing in the dotted field are available as an assembly.
The respective reference is to be found in a corner of the field.

Quantity of identical parts going with the assembly.

= numbering of the design (to designate interchangeability).

......

I 2/1 & 3
Part interchangeable.
Design (2) may be fitted instead of (1) and (3).

NI 1/2
Part not interchangeable.
Design (1) cannot be mounted instead of (2).

NI 2/1: I 2/5
Design (2) is not interchangeable with (1) but with (3).

Mechanical characteristics (thickness, diameter, size, length, appearance, colour, etc...) enabling you to distinguish the old version from the new one.
The bracketed parts make the new version interchangeable with the former one.

Number of teeth of a gear.

Parts to be mounted according to need (for adjustment).

Design valid up to serial number.

Design valid from serial number.

Symbol of grease to be applied.

Symbol of oil to be applied.

Symbol of glue to be used.

Symbol of paint to be applied.

Symbol of mastic to be applied.

Symbol of thinner to be applied.

Symbol of solid lubricant to be applied.

Part shown on another page or in another catalogue.

Part not available.

If shown in a screened area it will be included in the corresponding assembly.

The above mentioned signs do not belong to the spare parts number and may, therefore, be omitted when placing an order.
F) Code de couleurs des fils électriques et gaines isolantes.
D) Farbcode für elektrische Drähte und Isolierhüllen.
E) Colour code for electric wires and insulating tubing.

<table>
<thead>
<tr>
<th>Code</th>
<th>Couleur / Farbe / Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Jaune / Gelb / Yellow</td>
</tr>
<tr>
<td>1</td>
<td>Noir / Schwarz / Black</td>
</tr>
<tr>
<td>2</td>
<td>Rouge / Rot / Red</td>
</tr>
<tr>
<td>3</td>
<td>Vert / Grün / Green</td>
</tr>
<tr>
<td>4</td>
<td>Blanc / Weiß / White</td>
</tr>
<tr>
<td>5</td>
<td>Bleu / Blau / Blue</td>
</tr>
<tr>
<td>6</td>
<td>Orange / Orange / Orange</td>
</tr>
<tr>
<td>7</td>
<td>Beige / Beige / Beige</td>
</tr>
<tr>
<td>8</td>
<td>Rose / Rosen / Pink</td>
</tr>
<tr>
<td>9</td>
<td>Violet / Violett / Purple</td>
</tr>
<tr>
<td>10</td>
<td>Braun / Braun / Brown</td>
</tr>
<tr>
<td>11</td>
<td>Gris / Grau / Grey</td>
</tr>
<tr>
<td>12</td>
<td>Non isolé</td>
</tr>
<tr>
<td>13</td>
<td>Nicht Isoliert</td>
</tr>
<tr>
<td>14</td>
<td>Aluminum (gaine transparent)</td>
</tr>
<tr>
<td>15</td>
<td>Aluminium (durchsichtige Isolation)</td>
</tr>
<tr>
<td>16</td>
<td>Aluminium (transparent Isolation)</td>
</tr>
<tr>
<td>17</td>
<td>Cuivre (gaine transparent)</td>
</tr>
<tr>
<td>18</td>
<td>Kupfer (durchsichtige Isolation)</td>
</tr>
<tr>
<td>19</td>
<td>Copper (transparent Isolation)</td>
</tr>
</tbody>
</table>

F) Afin d’en faciliter la lecture, nous vous recommandons de retracer sur les plans de câblage les fils avec leur couleur correspondante.
D) Wir empfehlen Ihnen, um bessere Lesbarkeit die Drähte auf den Verdrahtungsplänen mit den entsprechenden Farben nachzuschreiben.
E) For better intelligibility it is recommended to trace the wires on the wiring diagrams with their respective colours.
<table>
<thead>
<tr>
<th>French</th>
<th>German</th>
<th>English</th>
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<tr>
<td>Porte-objectif</td>
<td>Objektivhalter</td>
<td>Lens Holder</td>
</tr>
<tr>
<td>Viseur réflexe</td>
<td>Reflex Sucher</td>
<td>Reflex Viewfinder</td>
</tr>
<tr>
<td>Boîtier</td>
<td>Kameragehäuse</td>
<td>Camera body</td>
</tr>
<tr>
<td>Couvercle-Manivelles</td>
<td>Deckel-Aufzugskurbel</td>
<td>Lid-Rewinding handel</td>
</tr>
<tr>
<td>Platine supérieure</td>
<td>Obere Werkplatte</td>
<td>Upper base plate</td>
</tr>
<tr>
<td>Griffe-Volet presseur</td>
<td>Greifer-Filmandruckplatte</td>
<td>Claw Pressure pad</td>
</tr>
<tr>
<td>Mécanisme</td>
<td>Mechanismus</td>
<td>Mechanism</td>
</tr>
<tr>
<td>Platine inférieure</td>
<td>Untere Werkplatte</td>
<td>Lower base plate</td>
</tr>
<tr>
<td>Gainages</td>
<td>Belederung</td>
<td>Leathering</td>
</tr>
<tr>
<td>Accessoires</td>
<td>Zubehör</td>
<td>Accessories</td>
</tr>
<tr>
<td>Cotes</td>
<td>Masse</td>
<td>Dimensions</td>
</tr>
</tbody>
</table>
Anciennes pièces
Alte Teile
Former parts

Nouvelles pièces
Neue Teile
New parts

Observations
Bemerkungen
Remarks

1

BCO 3419x1
2x2,05 (K)

(F) Engraisage supplémentaire d'un tassel plus grand
(D) Zusätzliches Zahnrad mit größerer Zahnstange.
(E) Additional gear wheel with bigger tooth formation.

2

(F) Le trou de lumière sur la porte-prisme en (a) est
supprimé, retour à l'ancien prisme.
Introduction d'un réflecteur automatique (b) et d'un
réflecteur guido-lumière (c).
(D) Die Lichtöffnung auf der Priseneinfassung ist
gegenüber der alten Priseneinfassung verkleinert.
Einührung eines selbstklappenden Reflektors (b) sowie
eines Lichtführungs-Reflektors (c).
(E) The light aperture (a) on the prism mount is
eliminated, hence the use of the old prism.
Introduction of a self-sealing reflector (b) as well as a
light guiding reflector (c).

3

3x [110, 20, 121 KP] 3x [110, 20, 131 KP]

(F) Nouvelle clé modifiée
(G) Innenmaßänderung
(C) Part number modification

4

BC 2907 x1
(= 8x1)
(= 6x1)

BC 2907 F
(N) = 0,44
(G) = 0,46
(H) = 0,46

(F) Nouvelles variantes de caches et suppression
de 3 variantes
(D) Einführung von neuen Lichtfiltern und Einführung
von 3 Ausführungen.
(E) Introduction of new filter holders and suppression
of 3 versions.

5

BC 2925 x1
2x(100, 20, 170 Cx)

BC 2925 No2
2x [120, 20, 161 N]

(F) Fixation du support clochette modifiée pour
éviter un court-circuit avec les contacts.
Vis à tête conique remplace vis à tête plate.
(D) Änderung in der Gestaltung des Stauauflauf-
halter zur Verhütung eines Kurzschlusses mit
den Kontakten.
Die Flachkopfschraube wird durch eine Zylinder-
head cap screw.
(C) Modification of the chopper support fixing to avo-
11.71
<table>
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<tr>
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<td>New parts</td>
<td>Remarks</td>
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</tbody>
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**E)** Centering gauge BJ-1509 is no longer available. In order to position the film gate centering device BJ-837 on the lens holder, introduce the 2 cylindric guides BJ-1353 into the 2 holes of the film gate.
1. Lens holder

Use support B.J. 1569 for lifting the thin glass plate of the lens holder.

Important: All lens elements, the prism and their seating must be cleaned according to the instruction of dust or finger prints appear greatly magnified in the viewfinder.

1.1 Collecting lens (fig. 1)

Using B.J. 583, carefully lift up lenses (a) at their base and remove with B.J. 114. In case of lens replacement, calibre with B.J. 583 the diameter of the meter wedges to be used for a correct fastening in the seating.

1.2 Film gate (fig. 2)

For the mounting and the setting of both film gate and wedge onto the lens holder, use support B.J. 1569 with gauge B.J. 339 at the top. Film gate (c) is positioned through the 3 pins (g) and centered by the window in cylinder (f). Set wedge (d) on lens holder (b) guided by the side of gauge and support; tighten the 4 screws (h). The outer edges of wedge (d) must come flush with the bearing surface of the film gate.

1.3 Trans mirror prism (fig. 3)

Introduce prism (j) in its seating with the chamfered edge above and select wedges (k) and (l) which must provide no play at the fixing. If the thinnest wedges are still insufficient, stick a small piece of black self-adhesive tape at the place marked by the arrow. Use tool B.J. 114 for driving out the wedges.

1.4 Reflex prism (fig. 4)

The mounting and dismantling of the reflex prism (m) may be effected when the lower plate (n) has been removed, since the space available to carry out such work is very limited.

Lift up prism (m), engage the retaining wedge B.J. 581 and close the prism against B.J. 581. Carefully introduce prism assembly (m) without scratching same.

Put up prism (m) and remove B.J. 581.
Shift the lower plate (c) under the hinge plate (n) and screw the 4 screws (p) without tightening.
2. Optical flange focal distance

State of the lens holder as per fig. 5 with gate (a), a shim plate (b) of medium thickness (for instance e = 0.30 mm), a spacer (c) of medium thickness and the reflex prism (e) mounted.

2.1 Preparation as per fig. 6

Fit the lens holder onto support BJ 311 with the 2 screws and nuts BJ 471. Place mirror BJ 1597 opposite the gate window and retain it with spring (d). Switch on the autocollimator to position 1 (min. light intensity). Center the gate window with respect to the autocollimator axis. Slide the autocollimator lens to about 25 cm from the lens holder, adjusting the vernier scale to 0.

Horizontal adjustment: Adjust the angular position of support BJ 311 so that the luminous line appears symmetrically in the eyepiece, fig. 7.1, position A.

Vertical adjustment: Loosen screw (f) and turn screw (e) with a view to bringing the lens holder into its vertical plane.

2.2 Parallel adjustment of the prism

Put up the reflex prism and remove mirror BJ 1597. Loosen screw (h) and set the prism parallel with respect to the gate by acting on screw (i) and on the 2 screws (l). The position of the prism is correct once the luminous line is visible in the eyepiece as per position A, but positions B and C, fig. 7.2, are still acceptable.

These adjustments precede the adjustment of the flange focal distance and may be rectified while adjusting the flange focal distance of the ground glass screen of the prism.
2.3 Adjusting the optical flange focal distance

Preparation as per fig. 8.
Fit the calibration lens BJ 151 and the bayonet support BJ 1310 to the lens holder. Switch on the autocollimator to position 1 (min. light intensity). Slide the autocollimator tube so that the line seen in the eyepiece has the maximum of contrast, Illustration 0. Note the difference, with respect to the zero of the vernier, this figure, read in mm on the vernier, indicates the value in 0.01 mm by which the thickness of the shims previously used must be varied, so as to obtain the following readings on the vernier scale:

\[ \frac{0 \pm 2 \text{ divisions}}{} = \pm 0.02 \text{ mm} \]

2.4 Adjusting the flange focal distance of the ground glass prism

Remove mirror BJ 1597 and switch on the autocollimator to position 2 (max. light intensity).
Act in reverse order on screw (j) and on screws (l) so as to maintain the parallelism of the prism and to bring the flange focal distance of the ground glass to

\[ \frac{+2 \text{ divisions}}{} = \pm 0.02 \text{ mm} \]

of the reading noted under paragraph 2.3.

Screws (l) to be screwed and (j) blocked through tightening of screw (h).

2.5 Framing

Preparation as per fig. 9, light source at (a).
Focus the magnifying glass BJ 810 on the edges of the prism aperture.
Center the white rectangle in the red one.
To carry out the horizontal adjustment, slightly loosen screws (p) and act with the eccentric screwdriver BJ 1594 in (a).
To carry out the vertical adjustment, slightly loosen screws (p) and act with BJ 1594 in (e). Afterwards tighten (n) and (p).
Should a small parallel defect appear between the 2 apertures, slightly loosen screw (s) and align the ground glass neck (t).

2.6 Film guide (fig. 10)

Gauge BJ 1500x1 must slide in the film guide, but without play. The pressure exerted by spring leaf (u) must be:

\[ \frac{50 \pm 5 \text{ g}}{} \]
3. Variable shutter (fig. 11)

Mount the variable shutter assembly (a) on the lens holder.
Select the necessary shims and spacers so that:
1) lever (b) slides freely and smoothly
2) the pile does not protrude in (c).

3.1 Adjustments

Put control lever (b) in open shutter position (red mark).
On point (x) bring the 2 shutter blades in superposition, however so that the fixed sector is retracted by 1 mm under the upper movable sector. Maintain both sectors and catch the play of the shutter control mechanism by turning the axle in the direction of the arrow. With the 4 screws, fasten the fixed shutter blade in its axle.

3.2 Adjusting the lens holder on the housing

Place pinion (d) on the V5 axle as shown in fig. 12. Fasten pinion very slightly on its axle by means of one single screw.
Round lens holder on camera, the mechanism of which being stopped as per fig. 13.
The pinion (d) to be used must allow a slight play in the transmission.
Then operating the camera frame by frame in position 1 and by maintaining the button on P, the shutter must stop as per fig. 14.
Remove the lens holder and tighten the 3 screws of pinion (d).

After mounting the lens holder definitely as previously described, bring the shutter in the position shown in fig. 15. Pinion (d) turns the shutter automatically in the right position as per fig. 16. Check the free movement of the mechanism by means of the hand crank for the backward motion.

Make sure that the shutter is adequately fastened as per fig. 14, the mechanism being stopped according to fig. 13.
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<th>Nouvelles pièces</th>
<th>Observations</th>
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<tr>
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<td>Bemerkungen</td>
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<tr>
<td></td>
<td></td>
<td>Remarks</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC 2507 6x1</td>
<td>BC 2507 F</td>
<td>(F) Nouvelles variantes de caches et suppression de</td>
</tr>
<tr>
<td>+</td>
<td>(N)</td>
<td>3 variantes.</td>
</tr>
<tr>
<td>+</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>0,44</td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>0,46</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(D) Einführung von neuen Bleifiltern und Wegfall</td>
</tr>
<tr>
<td></td>
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<td>von 3 Ausführungen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(E) Introduction of new filter holders and suppression</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of 3 versions.</td>
</tr>
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</table>

| 2                |                  |              |
| BCE 2925        | BCE 2925 M2     |              |
| +                | 2X 20,20,161    |              |
| +                | 100,20,171      |              |
|                  |                  | (F) Fixation du support claquetté modifiée pour éviter |
|                  |                  | un court-circuit avec les contacts. |
|                  |                  | Vis à tête plateur remplace vis à tête plate. |
|                  |                  | (D) Aenderung in der Befestigung des Startmarkierungshalters |
|                  |                  | zum Vermeidung eines Kerschlusses |
|                  |                  | den Kontakten. |
|                  |                  | Die Flaschenkopschraube wird durch eine Zylinder- |
|                  |                  | schraube ersetzt. |
|                  |                  | (E) Modification of the clapper support fixing to |
|                  |                  | avoid a short-circuit with the contacts. |
|                  |                  | The flat head screw is replaced by another one |
|                  |                  | with cylinder head. |

11.71
1. Reflex viewfinder (fig. 1)

1.1 While adjusting the reflex viewfinder onto the camera housing, pin (1) must engage in the slot (a) of the eyepiece. Introduce the head of screw (c) in the helicoidal slot of the eyepiece (a) and screw without tightening.

Center the mask inside eyepiece (e) with tool BJ 1043. Align front prism (d) (fig. 2) by acting on the 3 screws (c) until the image reflected by the prism coincides with the mask of the eyepiece, still by maintaining a distance of 9 mm.

Mount the lid.

1.2 Adjusting the eyepiece (fig. 1)

Equip the camera with a standard lens and project a beam of parallel light rays through the lens (e.g. via a projector). Sight the eyepiece with a dioptric tube BJ 7015 which must be adequately aligned and set to infinity. Subsequently turn adjusting ring (h) until the grain of the ground glass screen appears perfectly sharp. Turn the graduated collar (g) until the line 41 coincides with the mark of adjusting ring (h). Tighten screws (j).
<table>
<thead>
<tr>
<th>Anciennes pièces</th>
<th>Nouvelles pièces</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alle Teile</td>
<td>Neum Teile</td>
<td>Bemerkungen</td>
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<tr>
<td>Former parts</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>F) Erreur d'impression</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OCE 1900 B</td>
<td>G) Druckfehler</td>
</tr>
<tr>
<td></td>
<td>LCE 1000 B</td>
<td>H) Wiesprint</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>F) Nomenclature modified</th>
</tr>
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<tbody>
<tr>
<td>2</td>
<td>2x (110.35.161 N1+)</td>
<td>G) Teilnummernänderung</td>
</tr>
<tr>
<td></td>
<td>2x 109.35.1009 N1</td>
<td>H) Part-number modification</td>
</tr>
</tbody>
</table>

03.72
1. Reflex Viewfinder (Fig. 1)

1.1 While adjusting the reflex viewfinder on to the camera housing, pin (b) must engage in the slot (a) of the eyepiece. Center the mask inside eyepiece (a). Align front prism (d) (Fig. 2) by acting on the 3 screws (c) until the image reflected by the prism coincides with the mask of the eyepiece, whereby a distance of 5,8 mm must be maintained.

1.2 Adjusting the eyepiece (Fig. 1)

Equip the camera with a standard lens and project a beam of parallel light rays through the lens (e.g., via a projector). Sight the eyepiece with a dioptric tube BJ 1016 which must be adequately aligned and set to infinity. Subsequently, turn optical assembly 2 until the grain of the ground glass screw appears perfectly sharp, when line 1 of the graduated ring is opposite the mark.

Tighten screw (j).

Mount the lid.
| 1 | Anciennes pièces | 3x (121.26.16 CX†) | 3x 129.26.1003 CX | Observations | Bemerkungen | Remarks |
|   | Former parts    |                    |                    | F/ Nomenclature modifiée | D/ Tellnummernänderung | E/ Part-number modification |
|   | Nouvelles pièces |                    |                    |                          |                        | 09.71 |
|   | New parts       |                    |                    |                          |                        |                  |
| 2 | 1              | (BC 2696†)         | 2                  | H16 RX 5 - 253 020 →    | H16 SBM - 302.110 →   | F/ L'introduction du nouveau viseur reflex nécessite une plaque modifiée. |
|   |                | M 1/2              |                    |                           |                        | D/ Die Einführung des neuen Reflex-Suchers erfordert eine abgeänderte Platte. |
|   |                |                    |                    |                           |                        | E/ Modified plate further to the introduction of the new reflex viewfinder. |
|   |                |                    | 1 2/1              |                           |                        | 09.7 |
| 3 | 116.16.14 R5    |                    | 106.70.1003        |                           |                        | F/ Nomenclature modifiée. |
|   | 36              | 129.70.1003        | 170.75.1003 CX     |                           |                        | D/ Tellnummernänderung. |
|   | 121.26.1601 B3 |                    | 129.75.1001 B3     |                           |                        | E/ Part-number modification. |
|   | 136.36.711 B3  |                    | 120.70.1003        |                           |                        |                  |
|   | 36              |                    | 230.70.1003        |                           |                        |                  |

PD - C - 1 - 01.71
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<td>3x (121.26.15 OK)</td>
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<td>E/ Modified plate further to the introduction of the new reflex viewfinder.</td>
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09.71
**Couvercle - Manivelle**

**Deckel - Aufzugskurbel**

**Lid - Rewinding handle**

---

**H3 01.71**

*For camera with support for magazine 120 m*

*For cameras with support for the 400 ft magazine*
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<td>2</td>
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<td>x/4</td>
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<td>3</td>
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<td>0.2</td>
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<td>4</td>
<td>0.5x 303.35.16 D5</td>
<td>x/4</td>
<td>0.2</td>
<td>f)</td>
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f) La colonne (a) butée de la griffe marche avant comporte un cordon amovible.

D) Die Hülse des Anschlagbüffles (a) des vorderen Greifens kann abgenommen werden.

E) Suspendable sleeve on the stop (a) of the forward motion claw.

05.72
1. Upper working plate

1.1 Sprockets (fig. 1)
Place sprocket (a) in raised position by means of tool BJ 1503 and slightly tighten one screw (b) in view of the adjustment of the automatic loading.

1.2 Loop formers (fig. 1)
Loosen the 2 screws (d) and bring lever (c) in open position of the loop formers.
Position and let the lower loop former (e) rest against the film gate and place the upper loop former (a) at short distance of the inclined plane of the film gate. Tighten screws (d).

1.3 Automatic loading (fig. 2)
Preparation as per fig. 2, camera mounted.
Disengage the motor clutch, set the lateral release button on H.
Operate the mechanism with the hand crank.
Load on a length of film previously cut with the built-in cutter.
The film must be guided by the loop former into a longitudinal position, so that the claw easily enters the film perforation. Adjust if necessary by modifying the angular position of the upper sprocket.
When guided by the lower loop former, the film must engage freely with the sprocket teeth without displacing the sprocket guide. Adjust if necessary by modifying the angular position of the lower sprocket.
Carry out several test loadings at a speed of 18 f.s. The film must feed through the camera freely without jamming nor catching.
When the loop formers are open, the loops must keep their original shape, no matter whether the camera is operated in forward or reverse motion.

1.4 Sprocket guides (fig. 3)
Act with tool BJ 824 on the column of each sprocket guide so as to obtain a space of 2 film plies from the sprocket.

1.5 Spool axle (fig. 4)
The torque at the lower spool take-up spindle measured in forward motion at 18 f.s and of the upper spool axle measured in reverse motion on pulley BJ 1703 must be of:

\[
100 \pm 20 \text{ g}
\]
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1. (BEE 1186 X6 W4 t) → (BCC 1186 X5 M5) 12/1 [BC 1566]
   - F) La colonne (a) butée de la griffe s’arche avant
     comme un canon mouvable.
   - G) Die Höhe des Anschlagstiftes (a) des vorderen
     Greifers kann abgenommen werden.
   - H) Separable sleeve on the step (a) of the forward
     anton claw.
   - 05.72

2. 4x 303.35.16 OX 14 OX (N)=0.2 e=0.3
   - F) Rondelle supplémentaire à chocs.
   - G) Zuzätzliche Scheibe.
   - H) Supplementary washer.
   - 05.72

3. BC 2674
   - F) Caleil de centrage pour l’utilisation avec le
     magasin 120 m.
   - G) Zentrierrolle für die 120 m Kassette.
   - H) Centering roller for the 100 ft. magazine.
   - 12.77

4. BC 2764
   - F) Erreur d’impression.
   - G) Druckfehler.
   - H) Misprint.
   - 12.77

H3 12.77 PD - E - 2 - 01.71
<table>
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- **Griffe valet presseur**
- **Greifer Filmandruckplatte**
- **Claw Pressure pad**

<p>| | | |</p>
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</table>

(F) Modification du graissage des frictions des griffes marche avant et arrière, la graisse 2755.1 est remplacée par l'huile 2703.

(D) Änderung des Schmiermittels für den Vorder- bzw. Rückwärtsgreifer. Fett 2755.1 wird durch Oel 2703 ersetzt.

(E) Lubrification of forward and backward motion claw modified : grease 2755.1 replaced by oil 2703.

06.71
1. Claw

1.1 Adjusting the framing (fig. 1)

Insert the test pressure pad BJ 1514x1 in place of the normal pad.

Load the camera with a length of test film.

Light up the taking aperture from the outside.

Seen from the inside, the edges of the aperture must lie at equal distance from the middle of the perforation when the claw retracts.

In case of need, select the correct claw in order to achieve the adjustment.

1.2 Friction torque of the claw on the film (fig. 2)

While refitting the claw assembly onto the eccentric axle, adjust the friction torque on the film by means of the spring washers and run in the assembly by operating the camera for about 10 times of the spring motor capacity.

Place the claw assembly on platform H6 of tool BJ 1572 M1.

Rotate the disk in the direction of the red or white arrow, depending on which of the forward or backward motion claw is checked, or which occasion these must rest against the fulcrum of the dynamometer.

The friction torque shown by the dynamometer must be of

\[
\frac{11 \pm 2 \text{ g}}{}
\]

for the forward motion claw, and

\[
\frac{7 \pm 1 \text{ g}}{}
\]

for the backward motion etc.

This checking may also be carried out when the camera is mounted. For this purpose, remove the claw protection.

Disengage the mechanism so as to operate the camera with the hand crank for reverse motion.

Place tool BJ 1572 M1 onto the camera as per fig. 3, so that the fulcrum of the dynamometer lies:

- opposite the forward motion claw (a)
- opposite the backward motion claw (b).

This checking may be effected by simply rotating the dynamometer, so that the claw moves freely in front of the film gate.
1.3 Tensioning the forward motion claw (fig. 4)

Install the eccentric shaft (c) and adjust the axial play to 0.05 mm.

Turn the spring motor a few turns and operate the camera through the frontal release knob.

Fit the nylon gear (a) and the washer with the square-shaped hole (b), making sure that the eccentric (c) is inclined as per sketch.

The angle displacement (d) must be of 1 tooth.

1.4 Lateral centering of the claws (fig. 5)

State of the camera as above.

Turn screw (a) by means of a screwdriver until the eccentric axle gets in extreme right hand position.

(full both claws backwards.

Insert gauge BJ 1121 between the lateral film guides into gate, so that edge (k) lies opposite the housing beam.

Center the tip of the forward motion claw by slightly twisting with tool BJ 1129, so that it runs for a full cycle in the calibrated slot (c) between points (e) and (j).

Similar centering of the backward motion claw between points (e) and (h) of calibrated slot (d).

1.5 Loop catcher (fig. 6)

Wind the spring motor a few turns and operate the camera through the frontal release knob.

Set loop former (1) on toothed wheel (m) at an angle of 15...45° which corresponds to 1 to 3 teeth of the toothing.

The loop catcher must move freely and reform a loop after 2 foot images.
f) Les 2 engrenages assemblés, faisant office de butée pour limiter le déroulement du barillet sont dorénavant livrées avec axes, moyeux et rondelles à fixer par rivetage sur la platine supérieure.

d) Die 2 als Anschlag für die Federwicklung dienenden, gekoppelten Zahnradpaare können zukünftig
separat bestellt werden. Zwecks Vermeidung der selbst auf der oberen Werkplatte werden auch
die dazu passenden Wellen, Naben und Scheiben geliefert.

e) The 2 coupled gears serving as a stop for the unwinding of the spring are available separately with the corresponding shafts, nuts and washers to be riveted on the upper working plate.

04.76
<table>
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<td>240 015 → 250 801</td>
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<td>H16 RX 5</td>
<td>241 369 → 252 150</td>
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</tr>
<tr>
<td>H16 M 5</td>
<td>258 800 → 253 387</td>
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</tr>
<tr>
<td>H16 SB</td>
<td>300 201 → 300 901</td>
<td></td>
</tr>
<tr>
<td>H16 SAM</td>
<td>300 001 → 300 072</td>
<td></td>
</tr>
</tbody>
</table>

F) Un berillet légèrement plus faible a été monté sur une série de caméras dont les nos se trouvent indiqués dans la colonne ci-contre. Nous vous recommandons d'effectuer un calage renforcé selon chapitre 3, redescendre de 1/2 tour et non de 1 tour.


C) A slightly weaker spring motor has been mounted on certain cameras, the serial numbers of which are indicated in the margin. We recommend that you reinforce the drive as per chapter 3.

Let the spring unwind only one half and not one complete revolution.

11.71
1. Separating the working plates.

Prior to this operation, let the motor spring run down completely after having disengaged pinion (a) (fig. 3) which connects the spring motor to gear wheel (b).

2. Assembling the working plates.

The various components of the complete drive mechanism are held in place by the upper and lower working plates. For the assembling, prepare:
- The upper working plate as per fig. 1, without speed governor.
- The lower working plate as per fig. 2, without the control axle of footage counter.
- Adjust the axial play to 0.05 mm by means of the necessary washers.
- Use hook BJ 1521 to connect the belt of the lower sprocket axle to the pulley of the lower sprocket axle.

3. Aligning the sprocket drier (fig. 3).

For this alignment, the mechanism must be completely assembled.
- Separate pinion (a) from gear wheel (b).
- Fully wind the spring motor and let it run down just one revolution.
- Hold the mechanism via the stoppin axle.
- Turn gear wheel (b) fully home to the stop, direction as per arrow.
- Engage pinion (a) into gear wheel (b) and insert clip (d).
- Free the mechanism and check that the spring motor makes 8 revolutions.

4. Clutch mechanism (fig. 4).

In the "engaged" position, the fork must be able to swivel freely.
In "disengaged" position, teeth (g) must separate completely from teeth (h).
Adjustment is to be done by slightly bending fork (a) in the appropriate direction by means of twister BJ 1502.
5. Resistance torque of the mechanism (fig. 5)

This measurement is to be carried out by means of pulley BJ 1536x1 placed on the handcrank axle with dynamometer BJ 703, as well as the class retaining plate BJ 1568.

The maximum values are as follows:
- mechanism complete without class = 130 g
- mechanism complete with class = 320 g
- camera complete = 320 g

6. Adjusting the speed

Preparation of the mechanism as per chapter 2, outside of the housing. To carry out the operation, adjust the governor drops in high position so as to reach the speed of 64 f./s on the stroboscope disk mounted on the handcrank axle, as per fig. 6.

Use tool BJ 1579 M1 for the adjustment with the file or with machine BJ 1109 which provides for the adjustment through dynamic milling.

See the corresponding IT sheet in catalogue CD.

Fig. 6

At the beginning of the adjustment, apply a very thin layer of Polyloite powder BJ 1056 with a small brush on the drops at (g), as well as at the annular surface (h) of the bell.

Fit the governor into the camera, wind the setting motor fully and let it run down completely.

Repeat this 3 times at the highest camera speed. Having completed the adjustment of the running speed of 64 f./s, remove the governor and clean the annular surface of the bell at (h) with a soft cloth.

The Polyloite powder must remain on the drops at (g).

Caution: The governor must be lubricated with Polyloite powder.

fig. 7

Fit the governor into the camera.
- Adjust the speed 64 f./s with step (a).
- Adjust the speed 12 f./s with step (h).

7. Calibrating the speed setting knob (fig. 6)

On the complete camera load with a test film, place the respective strobescope disk comprising both a minimum and a maximum scale, allowing the adjustment of the speed setting knob.

There are 3 engraved and 1 virgin speed knobs.
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1. **BC-2000**
   - **H16**
   - **251 501**
   - **12/1**
   - Description: Modified exterior enabling the use of the part on all cameras.
   - **12.77**

2. **312.52.17 PH↑**
   - **312.52.31 PH**
   - **a = 0.5**
   - Description: New part number.
   - **12.77**
1. Counter (fig. 1)

1.1 The footage counter is driven by the upper sprocket axle via the clutch control spindle (a).
   Leave a slight play between the gears.
   Load the counter recall spring by about one turn. The counter automatically returns to zero when the camera is opened, and the hour frame mark must coincide with the line of the dial window.

1.2 The sound counter functions when zero (c) bores the screws of spring motor when lever (d) is positioned as shown on the sketch.

1.3 On the frame counter, the 100s disk (f) must be driven regularly and advance by one 50 frames mark for one turn of the unit disk (e), in whichever direction.

2. Release system

   The release system controls:
   - the intermittent operation
   - the continuous running
   - the frame-by-frame operation, snapshot and time exposures.

   Check the functioning:
   - of the front release button which must return to its original position seen as finger pressure is relaxed
   - of the lateral release button which remain caught in when it is set to position "A" and return to its original position when finger pressure is relaxed, when set to position "P".

3. Driving axles (fig. 2)

   Use pinchers BJ 1240 which matches with the shaft end into which the pin has to be fitted and allows the latter to be engaged without exerting any force on the 8:1 and 1:1 shafts.
   - Pusher A for driving out the pins
   - Pusher B for driving in the pins
   - Pusher C for fitting and positioning the asymmetric pin on the 1:1 drive shaft.
1. Assembling the viewfinder

1.1 Fitting the guide rail (fig. 1)

When mounted on the viewfinder, disk (a) must be aligned so that number 50 becomes visible and has a control position which may be obtained by displacing guide rail (b). Tighten screws (c).

1.2 Fitting the fixed lens element (fig. 2)

Place tool BJ 1607 and the long gauge into guide rail (b) with a view to positioning the fixed lens element (d) and its support with respect to the front lens element (e).

Progressively tighten screws (g) and cautiously maintain lens element (d) against the gauge.

1.3 Fitting the mobile lens element (fig. 3)

Turn disk (a) to position 50.

Place tool BJ 1607 and the short gauge H16 onto guide rail (b) with a view to positioning the mobile lens element (h) and its support with respect to the front lens element (c).

Progressively tighten screws (g) and cautiously maintain lens element (d) against the gauge.

2. Adjusting the viewfinder on the camera (fig. 4)

- Mount the camera on a steady support in front of a test chart, for instance BJ 159, at a distance of 1.50 m from the film plane.
- Equip the camera with a 75 mm tele lens and focus on the chart.
- Center the taking aperture axis with respect to the horizontal axis which must be at a distance of:

\[ X = 41 \text{ mm} \] for cameras with turret holder

\[ X = 73 \text{ mm} \] for cameras with bayonet mount

On the right-hand side from the viewfinder axis for the adaptation of the multifocal viewfinder on cameras with bayonet mount, the special intermediary support should be used in consequence of the dimension of the lens holder.
2.1 Vertical adjustment (fig. 5)

Set disk (a) of the viewfinder to focal length 75 mm. By slightly loosening screws (k), which can be attained through the 2 holes in the guide rail, the rear part of the viewfinder may be moved vertically so that the horizontal marks (l) visible in the viewfinder coincide with the horizontal axis. Yellow horizontal axis on test chart BJ 159.

Check the alignment at the various focal lengths of the viewfinder.

2.2 Horizontal adjustment (fig. 6)

The inclination of the viewfinder with respect to the horizontal plane consists in setting the viewfinder on infinity, position given by screw (n) resting against rivet (o).

Loosen the locking nut and turn screw (n) with tool BJ 1517 so as to obtain the correct centering of the vertical marks (m) visible in the viewfinder with respect to the vertical axis. Yellow vertical axis on test chart BJ 159.

Check the alignment at the various focal lengths of the viewfinder.

2.3 Adjusting the parallax correction ring (fig. 7)

Fit the viewfinder cover.

Mount the viewfinder on the camera lid, turn the milled knob (r) fully to the right-hand side and align the graduated ring (s), the infinity mark being opposite the line engraved on the lid.

When the viewfinder is fitted to the camera by means of the intermediary support, use the corresponding graduated ring (blue).
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<tr>
<td>(HE 1 X1)</td>
<td>(6) e = 0,44</td>
<td>1) Nouvelles variétés de caches et suppression de 3 variantes.</td>
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</tr>
<tr>
<td>(HE 1 X1)</td>
<td>(6) e = 0,46</td>
<td>2) Einführung von neuen Filtr-Halter und Abfall von 3 Ablösungen.</td>
<td></td>
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<tr>
<td></td>
<td>(6) e = 0,48</td>
<td>3) Introduction of new filter holders and suppression of 3 versions.</td>
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- 11.71

| 2 | (BCE 2996 X) |
|   | BCE 2956 E1 |
| 2X (100,20,161 X1) | 2X (120,20,161 X1) |

- 1) Fixation du support cloquette modifiée, pour éviter un court-circuit avec les contacts. Vis à tête conique remplacé vis à tête plate. |
- 3) Modification of the clapper support fixing to avoid a short-circuit with the contacts. The flat head screw is replaced by another one with cylinder head. |

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1. **110.24.201**<br>312.52.31 PH  e=0.6<br>2X 303.31.20 0X  e=0.4<br>2X 102.20.115 N(-)<br>**312.52.17**<br>**312.52.31** PH<br>2X 303.31.11 0X<br>2X 102.20.15 N(-)<br>**305 668**<br>**305 689**

- **F)** Indication du symbole manquant.<br>- **D)** Nachtrag der fehlenden Teilnummer.<br>- **E)** Indication of missing part number.

07.72

2. **629.200.1001**<br>**629.300.1001**

- **F)** Modificazione di la piastra, au fait à l'introduction du freinage par court-circuit d'induit.<br>- **D)** Änderung der Platte infolge der Einführung der Ankerumschaltung.<br>- **E)** Modification of connecting plate following the introduction of braking by short-circuiting armature.

07.72

3. **625.200.12** 22 Q<br>**625.270.12** 27 Q<br>**629.300.1001** T 30 Q<br>**629.200.1001** T 20 Q<br>**600 2966x1**<br>**N2/1**

- **F)** Valeur des résistances et symboles modifiés.<br>- **D)** Wert der Widerstände und Teilnummer geändert.<br>- **E)** Value of the resistance and part number modified.

01.74
Mechanism and optical part - General

Considering that the film transport mechanism and the optical system are absolutely similar as for cameras with spring motor, please refer to the instructions already available regarding mounting and adjustments.

Specifications of the electric camera

1. Driving shaft (Fig. 1)
   Adjust the axial play to the minimum by positioning bearing (a), tighten screw (b), whereas the ball must rest against stop plates (c).
   The play between pinions (d) and (e) must be reduced to the minimum with a view loosening the noise of the mechanism.
   Unhook the belts of the spool axle pulleys to check the free movement of the mechanism by means of the rotating handcrank on shaft 81.

2. Electric motor (Fig. 2)
   On mounting the supporting square plate and the pulse generator, the rotor is positioned at a distance of 1 mm.
   Check the function of the motor before mounting.
   Power supply 12 V.

3. Clamp
   To align the clamp shaft etc., position the mechanism with tool BJ 1319 (Fig. 3)

4. Shutter (Fig. 3)
   Set the bearing on to upper working plate and reduce the play of the pinions to the minimum.
   Position the mechanism with tool BJ 1319. Set the shutter with its edge opposite the mark of the tool and rectify the play in the gears as per arrow.

5. Mounting the mechanism into the housing
   Check and arrange the cables in the housing, especially in the upper section, as little space is available between the extremity of the plate.
   Solder the cables or to the clamps of the motor box as per wiring diagram 1.
   Check the electric function, power supply 12 V - (for instance TLA on plug 70).
   While dismantling the mechanism, do not unsolder the cables from the low clamps but cut them, so as to protect the insulation. The cables may be taken apart 4 times; afterwards the length is no longer sufficient.

6. Mounting the lens holder on to the housing
   Use special key BJ 1316 to tighten the threaded axles/grip supports.
Mechanism and optical part - General

Considering that the film transport mechanism and the optical system are absolutely similar as for cameras with spring motor, please refer to the instructions already available regarding mounting and adjustments.

Specifications of the electric cameras

1. Driving shaft (fig.1)
   Adjust the axial play to the minimum by positioning bearing (e), tighten screw (b), whereas the ball must rest against stop plates (c).
   The play between plungers (d) and (e) must be reduced to the minimum with a view lowering the noise of the mechanism.
   Unlock the belts of the spool axle pulleys to check the free movement of the mechanism by means of the rewinding hand crank on shaft 81.

2. Electric motor (fig.2)
   On mounting the supporting square plate and the pulse generator, the rotor is positioned at a distance of 1 mm.
   Check the function of the motor before mounting.
   Power supply 12 V-

3. Cam
   To align the cam shaft etc., position the mechanism with tool BJ 1319 (fig.3).

4. Shutter (fig.3)
   Set the bearing on to upper working plate and reduce the play of the plungers to the minimum.
   Position the mechanism with tool BJ 1319, set the shutter with its edge opposite the mark of the tool and rectify the play in the gears as per arrow.

5. Mounting the mechanism into the housing
   Check and arrange the cables in the housing, especially in the upper section, as little space is available between the extremity of the plate.
   Solder the cables on to the clamps of the motor bow as per wiring diagram 1.
   Check the electric function, power supply 12 V- (for instance T1A on plug 7P).

While dismantling the mechanism, do not unsolder the cables from the bow clamps but cut through, so as to protect the insulation. The cables may be taken apart 4 times; afterwards the length is no longer sufficient.

6. Mounting the lens holder on to the housing
   Use special key BJ 1316 to tighten the threaded axles/grip supports.
<table>
<thead>
<tr>
<th>Anciennes pièces</th>
<th>Nouvelles pièces</th>
<th>Observations</th>
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<tbody>
<tr>
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<td>Neue Teile</td>
<td>Bemerkungen</td>
</tr>
<tr>
<td>Former parts</td>
<td>New parts</td>
<td>Remarks</td>
</tr>
</tbody>
</table>

1. Duration of clapstick

Connect terminal 6 (green) and 7 (blue) together.

4. Duration of clapstick

Connect terminals 3 (red) and 7 (blue) together.

01.72

E) #superscript
3. Indicator of discharge

Red warning lamp on the camera.
The lamp must switch on when the voltage drops down to:

$$11 \pm 0.1 \text{ V}$$

Act on potentiometer P7 accessible through the upper working plate (Fig. 4).

4. Duration of clapper stick

White lamp on the camera.
The lamp must switch on at each start of the camera during

$$300 \ldots 400 \text{ ms}$$

Preparation as per Fig. 5
Speed on 25 f.p.s.
Camera loaded.
Oscilloscope adjusted: vertical 5 V/cm
time base 50 ms/cm
Oscilloscope connected with connecting box BJ 1320 to terminals 6 (green) and 4 (black), connect terminals 6 (green) and 7 (blue) together.
Act on potentiometer P8 accessible through the upper working plate (Fig. 4) to decrease the curve values from 300 to 400 ms on the oscilloscope screen (Fig. 5).

5. Checking the signal of the pulse generator

Preparation as per Fig. 6
Speed on 25 f.p.s.
Camera loaded
Oscilloscope adjusted: vertical 1 V/cm
time base 0.5 ms/cm
Oscilloscope connected with connecting box BJ 1320 to terminal 5 (yellow) and 4 (black)
The curve must equal Fig. 6a
<table>
<thead>
<tr>
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<tr>
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### Condensateurs - Kondensatoren - Capacitors

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### Diodes/Transistors - Dioden/Transistoren - Diodes/Transistors

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<td>BC 109 B</td>
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</tr>
<tr>
<td>2 N 5190</td>
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<td>T 11</td>
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</table>
Assembling

While dismantling or assembling the container lid (a), remove the rapid attachment to take off the cables and plug 7P.

On assembling, insert fixing plate (b) (Fig.1) between the 3 supporting columns of the spring contacts, screw (c) being only slightly engaged. Align lid (a) so as to allow plate (b) to engage into the slot of the grip housing. Turn the whole assembly to the final position of lid (a) and fix it with screw (c).

CAUTION: The cables must pass freely between the 3 columns under the plate with the 3 spring contacts. Mount plug 7P and the rapid attachment; align excenter (d) (drive pin of the locking lever) correctly, so that the lever ensures a good fixing of the camera when it is in closed position.

Electrical connections, see wiring diagram L.

Check the electrical supply to the camera via handgrip prior to carrying out the adjustments.
<table>
<thead>
<tr>
<th>Anciennes pièces</th>
<th>Nouvelles pièces</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alte Teile</td>
<td>Neue Teile</td>
<td>Remarks</td>
</tr>
<tr>
<td>Former parts</td>
<td>New parts</td>
<td></td>
</tr>
<tr>
<td>28 Ω 1/2 k</td>
<td>22 Ω 1/2 k</td>
<td>1) Changement de valeur des résistances.</td>
</tr>
<tr>
<td>20 Ω 1/2 k</td>
<td>22 Ω 1/2 k</td>
<td>2) Anderung des Widerstandswerte.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) Change of the resistance value.</td>
</tr>
</tbody>
</table>

01.74
Plan de câblage
Verdrahtungsschema
Wiring Diagram

H16EBM

Bolex

300 401

2P MM12V

Blanc Weiss White

Rouge Rot Red

2A

H3

EBM

06.71

L1
f) Sur les équipements un pilote et synchro-quartz, l'échauffement entraîné du transistor BY-51 peut les endommager.

Pour limiter cet échauffement, il a été introduit sur les séries récentes un radiateur à alliage :
SR 1322 pour les équipements son pilote
SR 1323 pour les équipements synchro-quartz.
Il est recommandé d'ajouter ce radiateur sur les anciens équipements son pilote et synchro-quartz.

d) Zur Vermeidung der Überhitzung wurde ein Kühlerkörpfer SR 1322 in die Pilotenausrüstungen
SR 1323 in die Synchro-Quarz-Ausrüstungen der letzten Ausführung eingebaut.
Aeltere Ausrüstungen müssen entsprechend verbessert werden.

E) Modification of the crystal control units, in order to make them less sensitive to exterior interferences when used with camera H16 CL.
Addition of a 1 µF capacitor in the 7 pin plug of the crystal control unit between point 4 and earth on a flat clamp to be fastened as per sketch.
Remove the varnish under the nut which maintains the 7 pin plug. Consult H4-FX-PD-5
Use the shielded connection cable SOCCU.

f) Modifikation des Geräte-Synchro-Quarz-Parasiten, um den Schaltvorgang des Transistors BY-51 zu minimieren.

Für eine effektive Kühlung, wurde ein Kühlerkörpfer SR 1322 in die Pilotenausrüstungen
SR 1323 in die Synchro-Quarz-Ausrüstungen der letzten Ausführung eingebaut.
Altere Ausrüstungen müssen entsprechend verbessert werden.

Zusatz eines Kondensators von 1 µF in den 7-poligen Buchse der Synchro-Quarz-Ausrüstung zwischen Punkt 4 und der Erde auf einem flachen Klemme, die laut Zeichnung festgesetzt wird.
Der Kondensator wird auch von der Beschreibung her entfernt. Siehe: H4-FX-PD-5.
Ergänzend wird auch das abgeschirmt.
Verbindungskabel SOCCU verwendet 07.76

07.76
F) Introduction of a diode in the sync-pulse and crystal equipments in order to ensure the immediate stopping of the camera. In the sync-pulse equipment, this diode prevents the return current from provoking an interfering signal (beep) at the end of a sequence.
1. **Main charger** (Fig. 1)

The warning lamp (b) must switch off when the accumulator is completely loaded, i.e. at a loading voltage of 14.5 ± 0.2 V.

If necessary, act on potentiometer (a).

**Caution:** The lamp (b) is special: 6V-0.2A.

2. **Sync-Pulse equipment** (Fig. 2)

Measure the tension of the pilot signal 50 or 60 cycles. Connect the Sync-Pulse outfit to the camera.

Effect the measure on a 40Ω loading resistance connected directly to points 1 and 2 of plug 5P.

**Minimum tension = 0.9V**

On the oscilloscope, the curve of the pilot signal may present a slight distortion, as shown in Fig. 2a.

Between points 3 and 4 of plug 5P, there must be a tension of 12V during the clapstick.
### Former parts

<table>
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<th>Description</th>
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<tbody>
<tr>
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<td>UHER 1200 REPORT PILOT</td>
</tr>
<tr>
<td>2</td>
<td>3401/1 Tuchel</td>
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</tbody>
</table>

### New parts

- Schéma correspondant au nouvel enregistreur.
- Schema betr. das neue lombandgerät.
- Diagram corresponding to the new tape recording.

**Remarks**: 33.75
Liaisons Son-pilote — Magnetophones
Verbindungen Pilotton — Tonbandgeräte
Connections sync pulse — tape recorders
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<th>Nouvelles pièces</th>
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<td>Former parts</td>
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<tr>
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<td>D) Einführung von Komponenten des Akkulaufgeräts BAT01.</td>
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<td>E) Introduction of components of the mains charger BAT01.</td>
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H3 EBM 12.75
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<td>Alle Teile</td>
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<tr>
<th>Former parts</th>
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<th>Remarks</th>
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<tbody>
<tr>
<td>SOCCU (0,5 m)</td>
<td>SOCCU (0,5 m)</td>
<td>F) Nouveau câble de liaison SOCCU avec câble blindé. Il complète l'amélioration apportée sur la caméra HIC EL dès le 17ème. Voir H4-FN2-PD-5.</td>
</tr>
</tbody>
</table>

**Diagram:**
- Shielded cable (*reference mark: black sheath*).

**Diagram:**
- Connection cable SOCCU with shielded cable.
- This is in addition to the improvement on camera HIC EL as from serial No. 210 878 (see H4-FN2-PD-5).

**Diagram:**
- Fuse holder.

**Diagram:**
- Introduc tion du fusible thermique comme pièce livrable pour le transformateur du chargeur CHIAV.

**Diagram:**
- Einführung der thermischen Sicherung des Transformers des Akkuklagerlässes CHIAV als separates Ersatzteil.

**Diagram:**
- Introduction of the thermal fuse of transformer of battery charger CHIAV as a spare part.