REPAIR MANUAL FOR THE

PRAKTICA NOVA I 158 007

PRAKTICA NOVA IB 158 006

CONTENTS

	Page
1 — General Notes	9
2 — Dismantling the Praktica nova I 158 007	9
3 — Assembly of the Praktica nova I 158 007	9
4 — How To Correct Faults	15
5 — General Notes Regarding Repair of Camera No. 158 006	15
6 — Technical Description of the Light Meter	15
7 — Calibration Principle for the Light Meter	15
8 — How To Correct Faults of Camera No. 158 006	18
9 — How To Construct a Calibrating Device	19
10 — List of Tools and Implements	19
11 — Exploded View	16-17

1 — GENERAL NOTES

This Repair Manual is based on the state of production of July 21, 1967.

Knowledge of our Instructions for Use is assumed.

The designations "front," "left," "right," etc. mentioned in this Repair Manual refer to the camera in the following position: The camera stands on its base, the camera back or film track showing to the repair mechanic.

All bright and burnished elements, groups and standardized parts by all means have to be rinsed in pure benzene and subsequently in a 20:1 benzene-oil mixture (20 parts benzene, 1 part of oil, cp. item below) before being mounted.

Lubricants to be used:
Oil (free from resin), freezing point -40°C, flash point +155°C.
Grease (free from acid), usable between -25° and +100°C.

When using retaining washers (parts according to German Standard TGL 0-6799), take care that their smooth surface touches the functioning point.

Screw-securing lacquer may be dissolved by nitro diluting agent or butyl acetate. After having been reassembled, all screws which had been secured previously by lacquer have to be fastened again by lacquer in the assembly.

When dismantling, put aside all elements in that order in which they have been removed. Above all, this is valid for disks, particularly washers which have to be reassembled in the same order.

How the single elements or groups of elements are arranged is shown as general plan by the Exploded View. The lines which connect the individual parts or groups indicate the correct order of dismantling or reassembling.

All elements underlined in the Exploded View are available as spare parts or parts subject to wear.

Unless otherwise mentioned, all elements and groups shown in the Exploded View No. 158 007 have the main number 158 007 (Praktica-nova I). The parts and groups shown in the Exploded View No. 158 006 bear, unless otherwise stated, the main number 158 006 (Praktica-nova I B).

When ordering spare parts, it is absolutely necessary to specify completely the main numbers used before the group or element numbers.

2 — DISMANTLING THE PRAKTICA-NOVA I 158 007

In order to replace correctly faulty elements or groups cp. the Exploded View No. 158 007 for dismantling the camera.

For dismantling, observe the following notes:

The film reminder dial 158 009 -0.01 and the exposure time setting dial -10.02 are glued in and must be removed for dismantling.

Before dismantling the camera top -14.00, set the counter dial to frame 0 or 20 . . . . 25.

As the screws for the bottom nut 158 009 -10.21 are fastened by lacquer, loosen them for dismantling by dissolving the lacquer with NITRO-solvent or butylacetate.

If groups of toothed wheels are to be dismantled, we recommend marking previously the mutual positions of the wheels, e.g. with the shutter released. This applies particularly to the shutter and the slow-down mechanisms.

3 — ASSEMBLY OF PRAKTICA-NOVA I 158 007

Preassembly of the Camera Body

Check that light-proof fittings -120.05, -120.07 as well as strips -120.13 and -120.14 have been inserted. The button in the lever of automatic diaphragm 155 000 -101.00 must allow unobstructed readjustment. Screw in release group 158 009 -124.00.

Note: Release group must allow unobstructed locking.

Assembly of the Mirror Mechanism

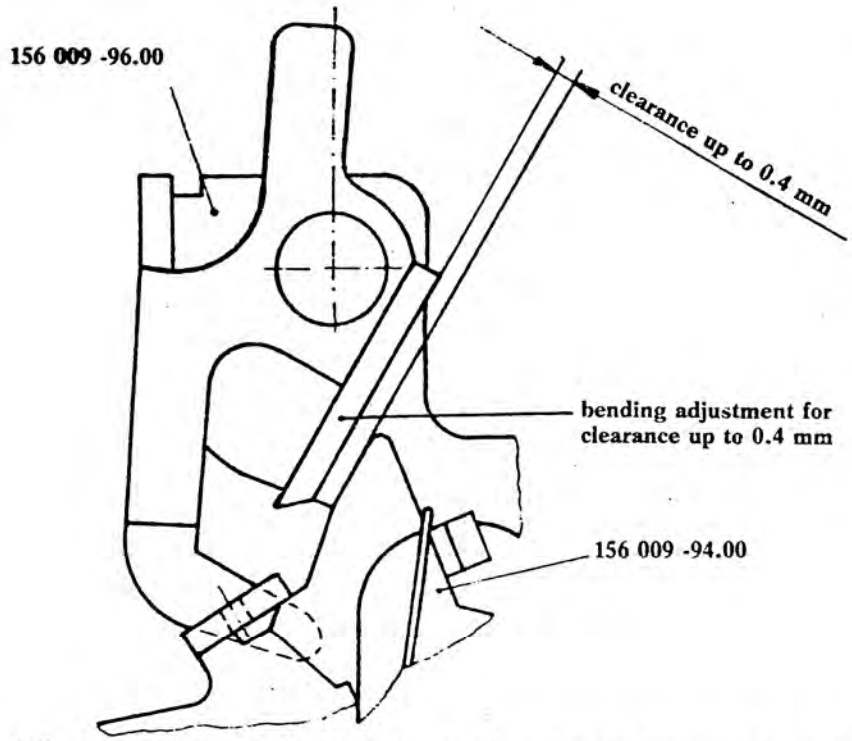
Insert into the right-hand side of the camera body, mirror mechanism 158 009 -102.00 in its cocked condition.

Note: Guide pin must engage in the long hole of the mirror bottom 159 009 -120.01, and lever 158 009 -104.00 must engage in lever 155 000 -101.03 of automatic diaphragm.

Fasten tightly the mirror mechanism by shoulder screws 158 009 -100.02 and 158 009 -100.03.

Take care for clearance up to 0.4mm between lever at plate 156 009 -96.00 and ratchet group 156 009 -94.00. Adjust if necessary.

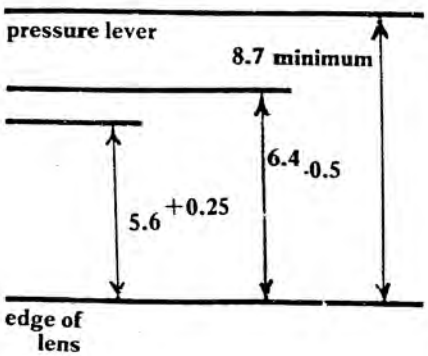
Adjust the mirror bottom into its 45° position by means of threaded pin 156 009 -53. Lacquer the threaded pin.



Adjustment of the Shutter Release

Adjust the shutter release without play by means of the threaded pin M 2 x 6 according to TGL 0-551. Lacquer the threaded pin.

Adjustment of the Distances at the Side of the Lens



Distance 8.7mm min.

Check this distance with lever of automatic diaphragm engaged and disengaged, and shutter release in resting position. Adjustment by bending the pressure lever 155 000 -59.

Distance 6.4 - 0.5mm

Disengagement of the mirror mechanism: Cock mirror mechanism, screw interval gauge into shutter release. Adjust at the eccentric of lever 158 009 -104.00.

Distance 5.6 + 0.25mm

End position: Press down the shutter release to its stop. Adjust by bending the pressure lever 155 000 -59.

Assembly of the Shutter Mechanism

Reeling friction of film bobbin must be

$$Md = 300 \pm 50 \text{ pcm}.$$

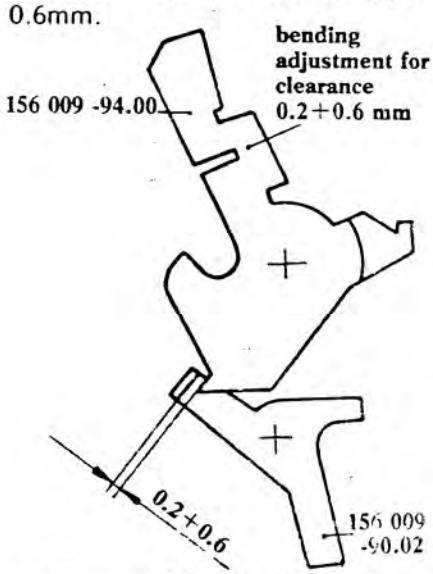
As to their operation, put shutter mechanism -60.00 and film bobbin on axle 158 004 -73.00 and install them in the body. Adjust axial play of film bobbin = max. 0.2mm by inserting washers.

Bores of bushings in the camera body and in the bearings of shutter gears in the shutter mechanism must be in alignment. Check with complete axle -21.00.

Note: When cocking the shutter release, winding lever of mirror 158 009 -60.17 must immediately engage with the lowest point of the cam, and release ratchet -60.03 must engage with toothed wheel -60.05.

Adjustment of the Mirror Mechanism

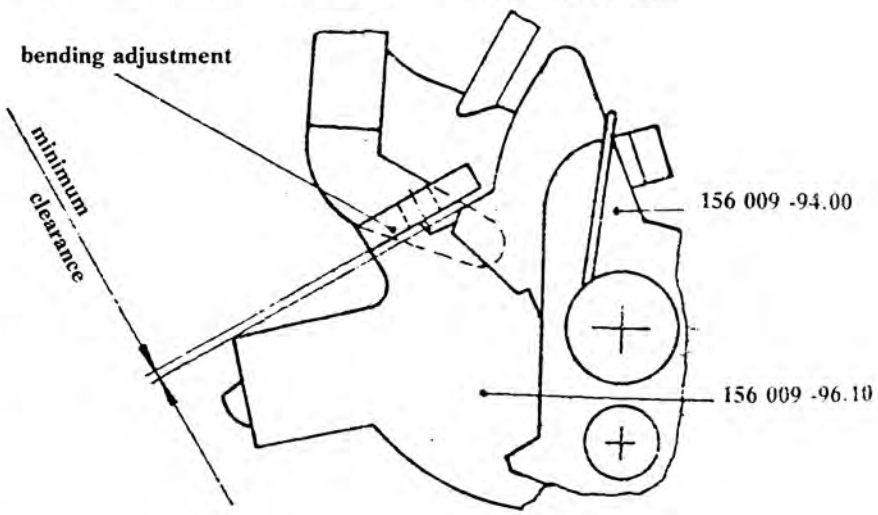
Adjust excess stroke to 0.2+ 0.6mm.

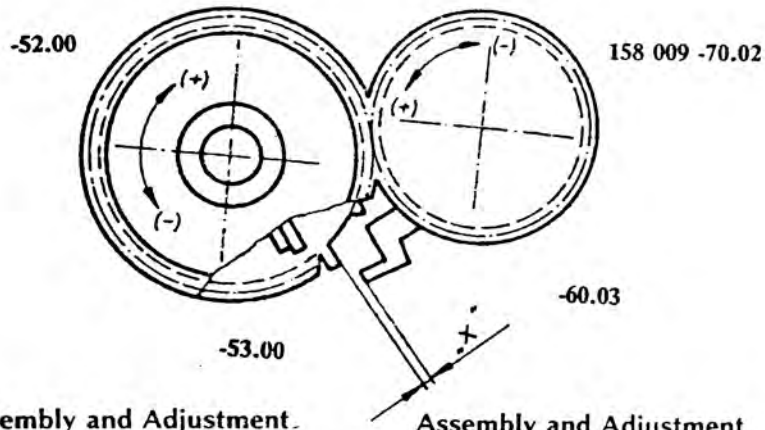


When cocking the shutter release, the ratchet group 156 009 -94.00 must engage with excess stroke in lever 156 009 -90.02.

Adjustment of the mirror lever

When releasing the shutter and retaining the mirror bottom in its 45° position, lever -60.03 must not move at all. In case of slight play between mirror lever 156 009 -96.10 and ratchet group 156 009 -94.00 there is no movement of lever -60.03. Mirror lever must guarantee unobstructed operation of ratchet group.





Assembly and Adjustment of the Shutter Wheel

Assemble shutter wheel -53.00 and toothed wheel -52.00. Adjust axial play of the toothed wheels to ≤0.1mm by inserting washers.

Adjust excess stroke "X"

Cock the shutter, check excess stroke between the rim at the shutter wheel -53.00 and the release ratchet -60.03 by varying pressure against rapid cocking lever 158 009 -5.00 and toothed wheel -52.00.

Set excess stroke "X" to 0.2 . . . 0.7mm by turning the toothed wheels -52.00 and 158 009 -70.02 according to table below.

Existing excess stroke	Direction of change and number of teeth to be changed	
	158 009 —70.02	—52.00
—1 ...—0.6	0	+1
—0.5...—0.2	+1	—1
—0.1...+0.1	—1	+2
0.2... 0.7	0	0
0.8... 1.1	+1	—2

Assembly of B-lever -50.05

Adjust axial play to ≤ 0.05mm by inserting washers.

Assembly and Adjustment of the Curtain Groups

Use curtains with different thicknesses of cloth as follows:
158 004 -42.00 = 0 . . . +0.015mm
158 004 -46.00 = 0 . . . -0.015mm

Observe that the axles of the curtains have an end clearance of 0.05 . . . 0.2mm at their right-hand sides.

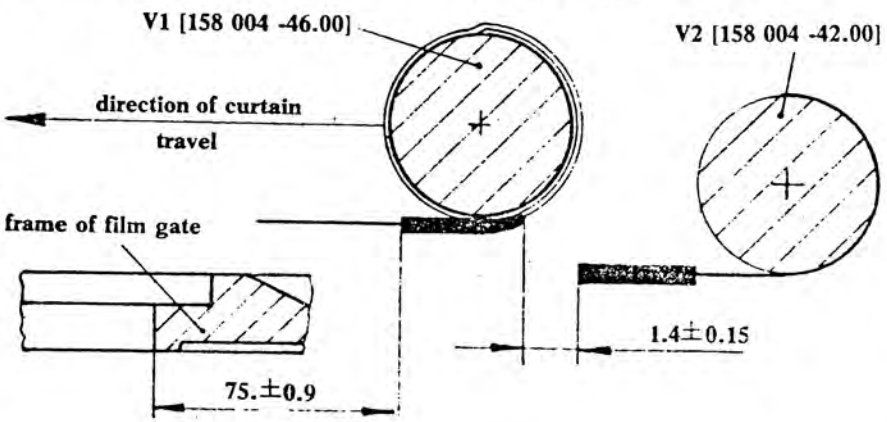
Tension of curtains as measured in the centre line of the frame and in direction of reeling must be as follows:

158 004 -46.00 (V1)≈70 p
158 004 -42.00 (V2)≈75 p

Check by means of a special-type spring balance.

When being reeled, the curtains must overlap by ≥ 2.5mm at the left-hand side of the frame. Adjust the position of the curtains with cocked shutter.

Adjust curtain V1 to the distance of 7.5 ± 0.9mm by changing the right-hand side curtain spindle (change of mesh) according to the figure below. Adjust to distance of 1.4 ± 0.15mm by changing the right-hand side spindle of curtain V2 or by interlocking the curtain spindle (at the shutter side).



Note: Interlock by max. 1/2 tooth in both directions, otherwise change right-hand side spindle of curtain V2. Take care to cause no error of truth for the curtain spindle.

Assembly and Adjustment of the Slow-down Mechanism

Cock shutter mechanism and assemble slow-down mechanism -23.00 with spur gear -20.13 according to the figure below.

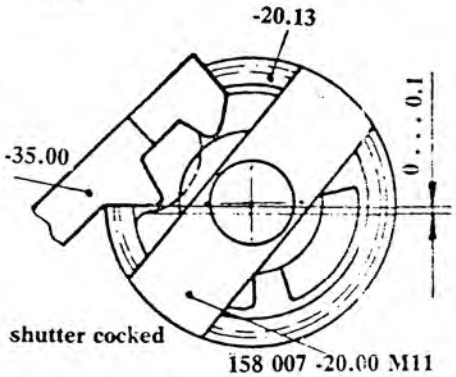
The following adjustments are absolutely necessary for the correct adjustment of the exposure times.

Adjustment of the Spur Gear Position

Insert the gauge.

Lever -35.00 bears against the small radius of the gauge. Check the gap between spur gear and lever to be = 0 . . . 0.1mm. Adjust for this gap by changing the mesh between the toothed wheel and curtain spindle or by interlocking at the curtain spindle (at the side of the slow-down mechanism).

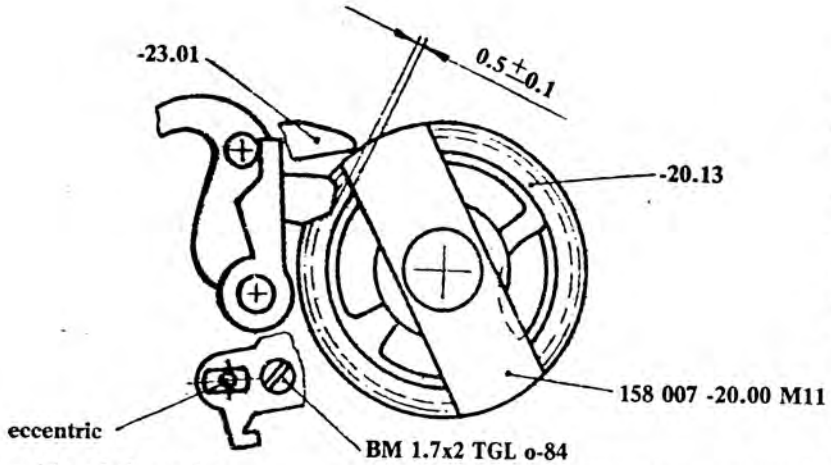
Note: Interlock by max. 1/2 tooth in both directions, otherwise change the spur gear. Take care to cause no error of truth for the curtain spindle by the interlocking motion.



Adjustment of the toothed segment with respect to the spur gear

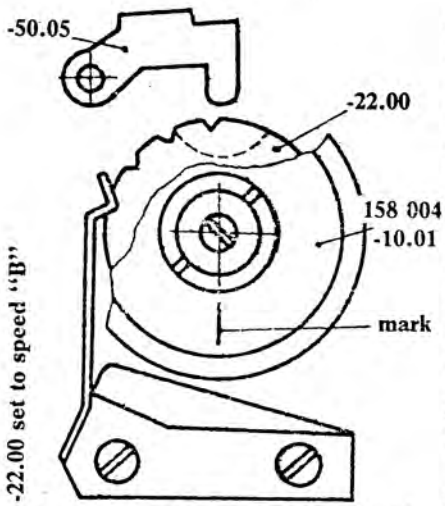
Release the shutter. Lever -23.01 bears against the large radius of the gauge. Check gap between drum of the spur gear -21.03 and toothed segment 159 009 -32.00 to be = 0.5 ± 0.1mm. Adjust it by turning the eccentric (cp. the figure).

Note: Before adjustment loosen cylindrical head screw BM 1.7 x 2 according to TGL 0-84.



Assembly of the axle

Observe end clearance in direction of axle -21.00 to be up to 0.05mm. Set grooved bushing -22.00 to engagement with exposure time "B"



Put on button 158 004 -10.01 and mark "engagement to B" on the button. Turn button by five steps in clockwise direction = engagement for exposure time 1/25 sec.

Set axle to exposure time 1/125 having the cam assembled on cam radius according to figure.

Connect by screwing grooved bushing and axle by threaded pin cone 159 009 -4.12, and check engagement for exposure time 1/60 sec. When screwing, retain the cams.

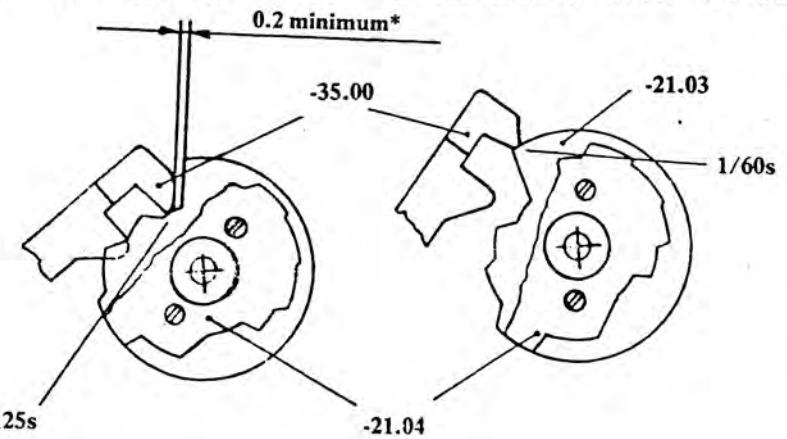
Assembly of the Frame of Film Gate and of the Film Drum

When assembling take care that all film-guiding elements are centered to the film gate. Check focusing measure of 45.52 ± 0.02mm. Approach grooved bushing -20.06 to transport roll 8/35 according to DKS 2216, with end clearance ≤ 0.1mm. In its released condition, the transport roll must be easily rotatable.

Adjustment of Stop Spring and Reverse Action Locking Means

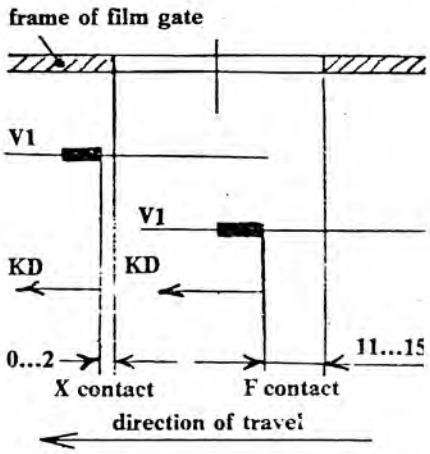
Cock the shutter and stop transport roll. (Overcoming of the mesh as in case of loaded film.)

Immediately after or simultaneously with engagement between the release jack -60.03 and the toothed wheel -60.05 (cp. **Assembly of the Shutter Mechanism**), the stop spring 158 009 -60.29 must engage with the notch of the toothed wheel 158 004 -68.14. For adjustment, loosen left cylindrical head screw BM 1.4 x 3 according to TGL 0-84.



Adjustment of the Contacts

For adjustment set to exposure time "B" and stop the travel of curtain V1 at the gear chain. Adjust position and duration of contact-making to flash contacts -80.00 and -82.00 according to figure below. During cocking of the shutter and returning of the rapid-cocking lever, there must be no contact.



KD = duration of contact-making = 2.5 ms . . .

Assembly of the Mirror

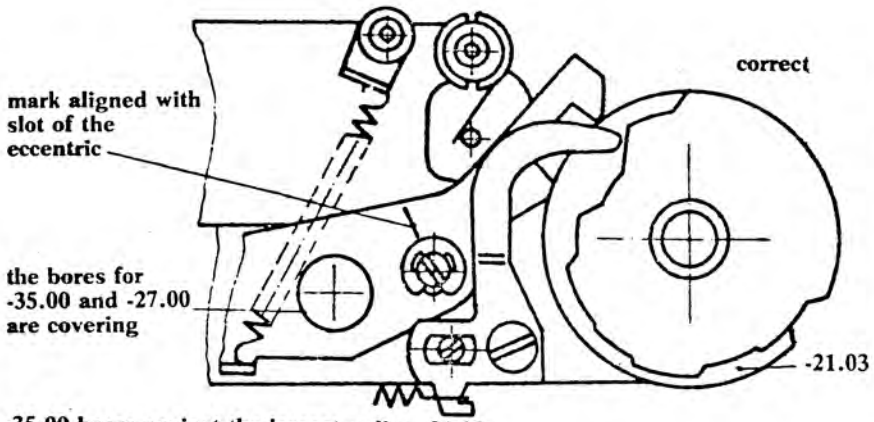
Assemble on the assembly stand.

Attention: When the mirror bottom has been pivoted upwards, the striking lever (belonging to 156 009 -96.00) must return unobjectionably to below the bottom and secure it in its upper position. When the camera has been released, the mirror bottom must automatically swing upwards and return reliably into its 45° position as soon as the curtain V2 has traveled.

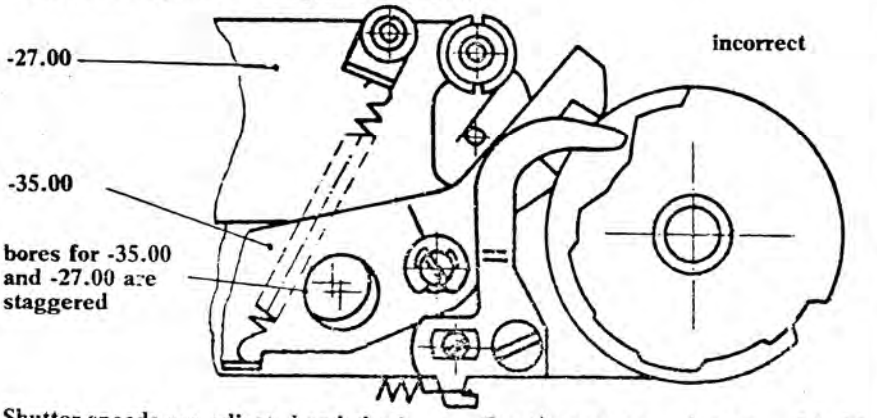
Adjustment of the Exposure Times

Adjust with the mirror assembled. The measuring instrument must be so adjusted that the light gap in the curtain level of the camera is projected distinctly.

Observe, that beginning and end ("Anfang" und Ende") (travel of the curtains) have a distance of 0 . . . 1 mm from the edge of the picture gate.



-35.00 bears against the largest radius -21.03



Shutter speeds are adjusted and checked as listed below:

	Beginning	Centre	End
1/500 s	"		"
1/250 s	"		"
1/125 s	"		"
1/60 s		"	
1/30 s		"	
1/15 s		"	
1/8 s		"	
1/4 s		"	
1/2 s		"	
1 s		"	

Table of shutter speeds (according to TGL 7708)

Speed (s)	Desired value (ms)	Tolerance (%)
1/500	1.95	+36.6
1/250	3.91	—26.8
1/125	7.81	
1/60	15.63	
1/30	31.30	
1/15	62.5	+23.1
1/8	125	—18.8
1/4	250	
1/2	500	
1	1000	

Attention: The ratio between the longest and the shortest value should not exceed

$$\frac{t_{e\,max}}{t_{e\,min}} \leq 1.5$$

For an unobjectionable adjustment please take care for that the adjustments to be set as to items 3.5 . . . 3.10 of this Manual will be fulfilled.

Furthermore, lever -35.00 should not have too excessive an end and radial clearance; it should be allowed to engage with the smallest cam radius without any obstruction. The lever bearing must not be loose. Adjustment of the short shutter speeds: Begin with the eccentric being in its central position as to the figure at left.

In case of shutter speed 1/500 equalize the values by varying the tension of curtain V2 between "beginning" and "end" ("Anfang" und "Ende").

The measured shutter speed must be between 1.3 and 2.9 ms.

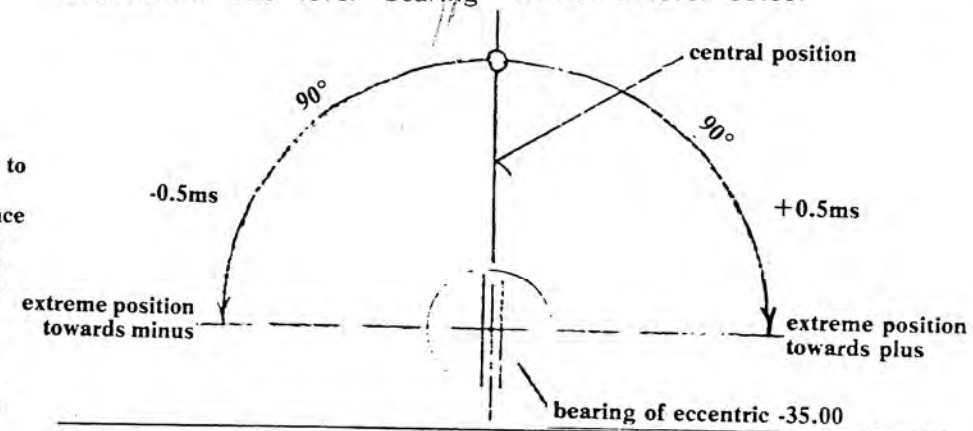
Check by measuring the shutter speed of 1/250. The measured speeds have to be as follows:

1/500		1/250
1.3 ms	⟶	3.7 . . . 5.2 ms
2.9 ms	⟶	3.0 . . . 4.0 ms

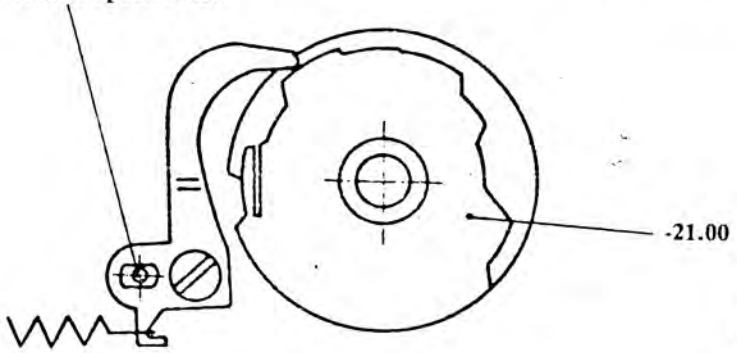
If there is the correct time difference between the 1/500 and 1/250 shutter speeds but the shutter speed too long, reduce the curtain gap of 1.4 ± 0.15 (cp. item 3.8).

Adjust the shutter speeds of 1/500 and 1/250 s according to the table by turning the bearing of lever -35.00 according to the figure, and by varying the tension of the curtain.

Adjust the shutter speed of 1/125 s by changing the spring tension at lever -35.00.



adjustment for shutter speed 1/15s

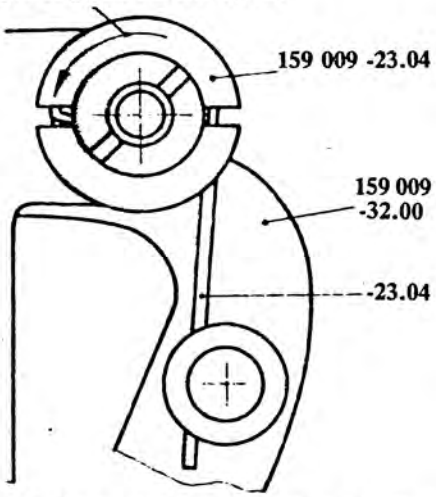


Adjust the shutter speed of 1/15 s by turning the eccentric at the angular lever -34.00.

Attention: Before adjustment, loosen the cylindrical head screw and re-tighten it after setting.

Adjust the shutter speed of 1 s by changing the tension of spring -23.04 (suspended in bushing 159 009 -23.04).

prolong the shutter speed



After adjustment of the shutter speeds of 1/15 s and 1 s, all intermediate speeds must be within tolerance.

Assembly of the Camera Back

The film pressure plate in its operating position must exert a force of

$$P = 400 + 50\ p.$$

Optical Adjustment With Autocollimator Lens

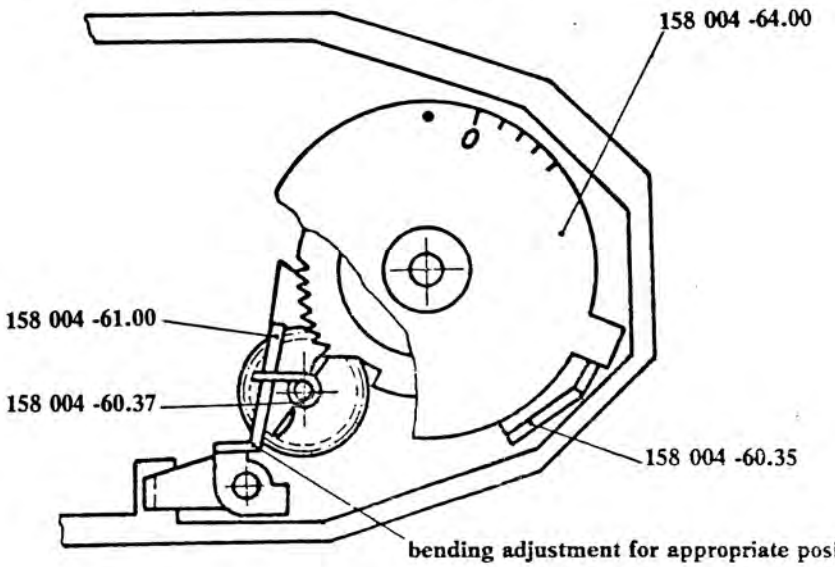
Check the autocollimator lens according to fundamental operating instruction No. 106. Cock the camera. Insert metal mirror into frame 158 000 -0.91. Adjust position of the frame so that

1. crossed test threads (for measurement of parallelity) are within the small tolerance circle;
2. maximum sharpness of the 2nd crossed threads (position not adjustable) can be obtained at collimator value 45.5 ± 1. Release the shutter, check adjustment. Secure adjusting screws by lacquer.

Optical Adjustment With Test Table

Adjust only in this manner if no autocollimator lens is available. Distance between camera and test table = 2 m. Cock the camera, set lens to 2 m. Insert ground-glass into frame 158 000 -0.91.

Adjust position of the frame so that the sharpest reproduction of the test image is achieved. Control by means of a magnifying glass. Observe also all four corners of the ground-glass to ensure that the ground-glass has no inclined position.



bending adjustment for appropriate position

The next check, with aperture set to infinity, should be done by focusing an object distant by at least 50 m.

Here again highest sharpness of the ground-glass image has to be attained. Secure the adjusting screws by lacquer.

Check with the Completed Camera

The camera has to be assembled up to **Assembly of the Camera Top**.

Direct the camera to an object having remarkable vertical lines and being in a distance of at least 50m. When focusing to infinity, these vertical lines neither should be displaced nor unsharp.

Assembly and Adjustment of the Counting Mechanism

Assemble counter dial 158 004 -64.00 on reverse action locking means 158 004 -66.00, and adjust the end clearance to $\leq$ 0.05 mm by washers 6 x 10 x 0.05 according to DKS 2001. A preliminary stress given to the leaf spring 158 004 -10.15 must allow the counter dial being advanced by at least 1 division beyond the 36th graduation mark of the counter dial. With the camera back closed, the counter dial must count from two steps below 0 to 36, and as soon as the camera back is opened it must return to its initial position.

Cock the shutter.

Carrier 158 004 -60.37 is parallel with plate edge (cp. figure).

Adjust the feed by bending the bearing bolt of the carrier. Feed of counter dial must be finished as soon as, with cocking of the shutter, the spring catch 158 009 -60.29 engages with the 1st groove of gear 158 004 -68.14. When the camera back is closed, the spring catch of the double lever 158 004 -61.00 must engage between the 6th and 7th teeth of the locking gear. (Number of teeth are counted from the recess in the locking teeth system.)

The spring catch has to be positioned at the shoulder of tooth.

When the camera back is opened, the spring catch is disengaged from the locking teeth system. Bending adjustment of the double lever should be done with open camera back.

Assembly of the Camera Top

Lock the camera back.

Set counter dial to 0 or 20 . . . 25. Put on camera top -14.00 and tighten it by oval-head screw 300 008 0.01.

Assemble button 158 004-10.01

Assemble bushing 158 009 -0.17 and operating elements. Simultaneously, take care for end clearance = 0.1 mm of the rapid-cocking lever 158 009 -5.00 by inserting washers.

4 — HOW TO CORRECT FAULTS

Counting Mechanism

Remove operating elements and camera top -14.00 from camera body. (In case of Praktica-nova IB, remove camera top 158 006 -50.00.)

Fault:

Counter dial does not return into its initial position when the camera back is opened.

Remedy:

Spring lug or suspension ring of the leaf spring 158 004 -10.15 has opened or is broken.

Shut the spring lug again or replace the leaf spring. Oil slightly the leaf spring.

Fault:

Counter dial does not count at all or works irregularly.

Remedy:

The spring catch of the double lever 158 004 -61.00 does not engage sufficiently with the locking teeth system. Adjust engagement as has been described under **Assembly and Adjustment of the Counting Mechanism**.

The locking teeth of the counter dial 158 004 -64.00 have worn out. Replace counter dial.

The transport step is too small. Adjust the transport step at carrier 158 004 -60.37.

Continue assembly of the camera according to this Manual, **Assembly of the Camera Top**, and Exploded View.

When repairing the Praktica-nova IB, check the light meter according to section 7 of this Repair Manual.

Spare Parts

Leaf spring	158 004 -10.15
Carrier	158 004 -60.37
Counter dial	158 004 -64.00

Slow-Down Mechanism

Fault:

With shutter speeds of 1/15 s ... 1 s, curtain V2 does not travel.

Remedy:

Remove the bottom plate 158 009 -10.07 from the camera. Check operation of the anchor of the slow-down mechanism and check for foreign matters in the slow-down mechanism.

Readjust engagement between anchor and anchor lever -33.00.

If the fault could not yet be overcome, the operating elements, camera top, and frame of film gate have to be removed from the camera body.

Remove the slow-down mechanism -23.00, clean it in pure benzene and subsequently in a 10:1 benzene-oil mixture (10 parts of benzene and 1 part of oil) or replace it by a new slow-down mechanism.

Adjust the speeds according to **Adjustment of the Exposure Times**, and adjust camera according to previous instructions and the Exploded View.

When repairing the Praktica-nova IB, check the light meter according to Section 7 of this Manual.

Spare parts

Cover	158 009 -10.08
Slow-down mechanism	158 007 -23.00

5 — GENERAL NOTES

In principle, the Praktica-nova IB 158 006 has to be dismantled and assembled according to the Exploded View.

Remove at first the camera top -50.00 from the camera body according to the Repair Manual 158 007, section 2 for repair according to section 8.

After each repair in the shutter mechanism of the camera and after dismantling and assembly of the camera top involved, check, after having mounted the camera top, the B-element regarding the light densities mentioned under section 7 (perhaps the camera top may jam).

For repair shops with no available illuminating device for adjusting the B-element, a fundamental conception is given under section 9 for the construction of a simple calibrating device. By no means, the repair shop should return the camera to the customer with the B-element "calibrated" only with respect to other B-elements (comparative measurement).

In order to obtain an optimum accuracy in calibrating d, keep the photographic elements in the dark until they are calibrated.

All soldering points should be soldered only by using collophony dissolved in spirit.

6 — TECHNICAL DESCRIPTION OF THE LIGHT METER

Uncoupled Built-in Light Meter

Measuring range:
16 asb . . . 128 000 asb
Calibrating- and test-lamp densities:
32; 250; 2000, and 16 000 asb
Admissible tolerance:
± 3/4 aperture

Electrical parts:
Photoelectric element
(Se-element)
E = 38 x 14.5 mm
Measuring mechanism, type C
13.8 mm dia.
in a dust-tight casing
Thermistor
Th $R_{20°}$ = 1.2 kohms ± 20%
Load resistance
variable regulator rotary carbofilm-type resistor,
P 25 kohms, 0.05 W
according to TGL 11 886

7 — CALIBRATING SYSTEM OF THE LIGHT METER

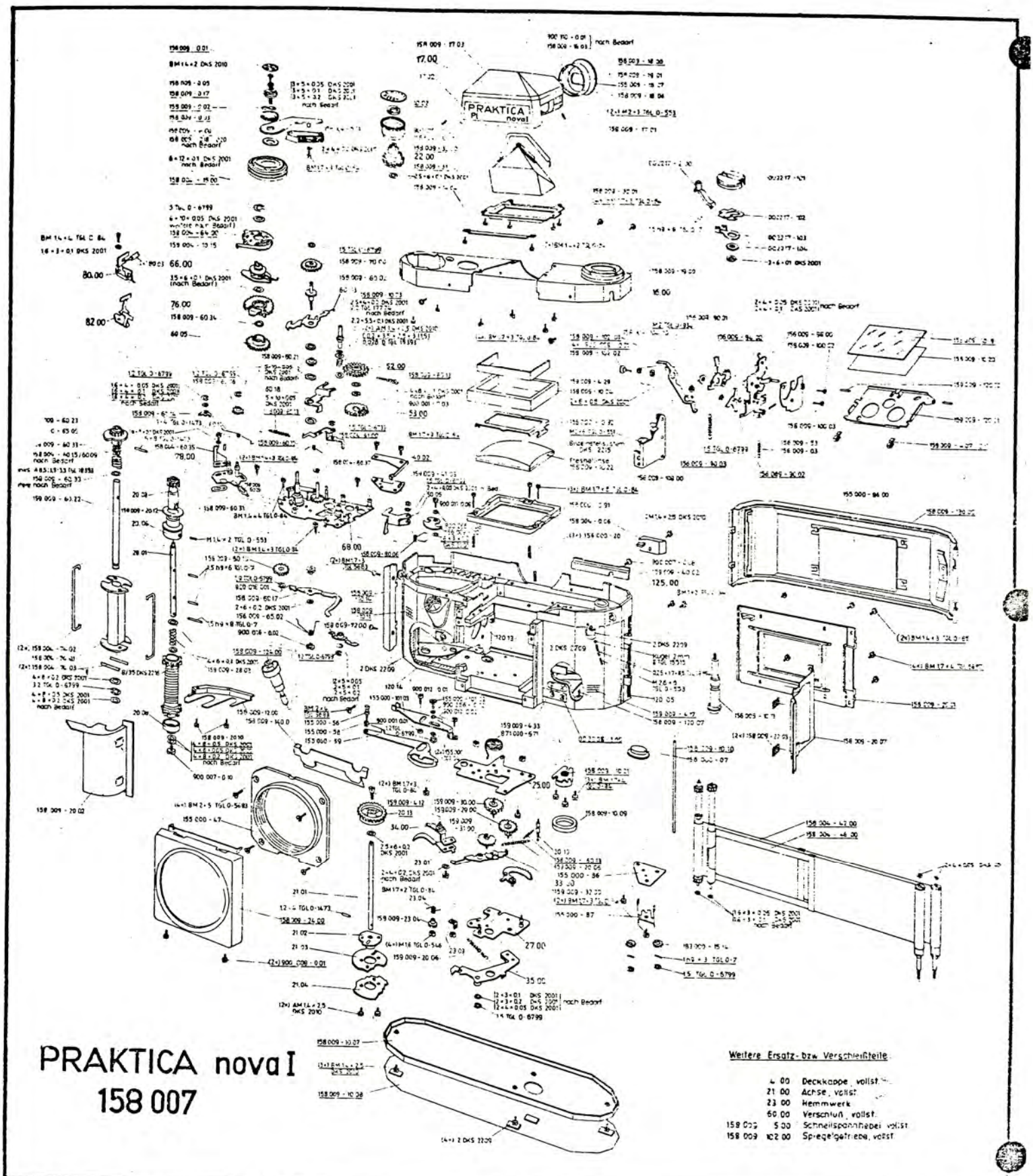
Determination of the Load Resistance

Mount the encased measuring mechanism 158 008 -59.00 and the photoelectric element 195 000 -34.02 at the camera top according to the Exploded View.

The Exploded View shows also between which connecting wires of the photoelectric element and of the measuring mechanism the thermistor 158 008 -50.04 or the rotary carbofilm-type resistor according to TGL 11 886, has to be soldered.

Place the assembled unit before a calibrating device (illuminating device with support for camera top).

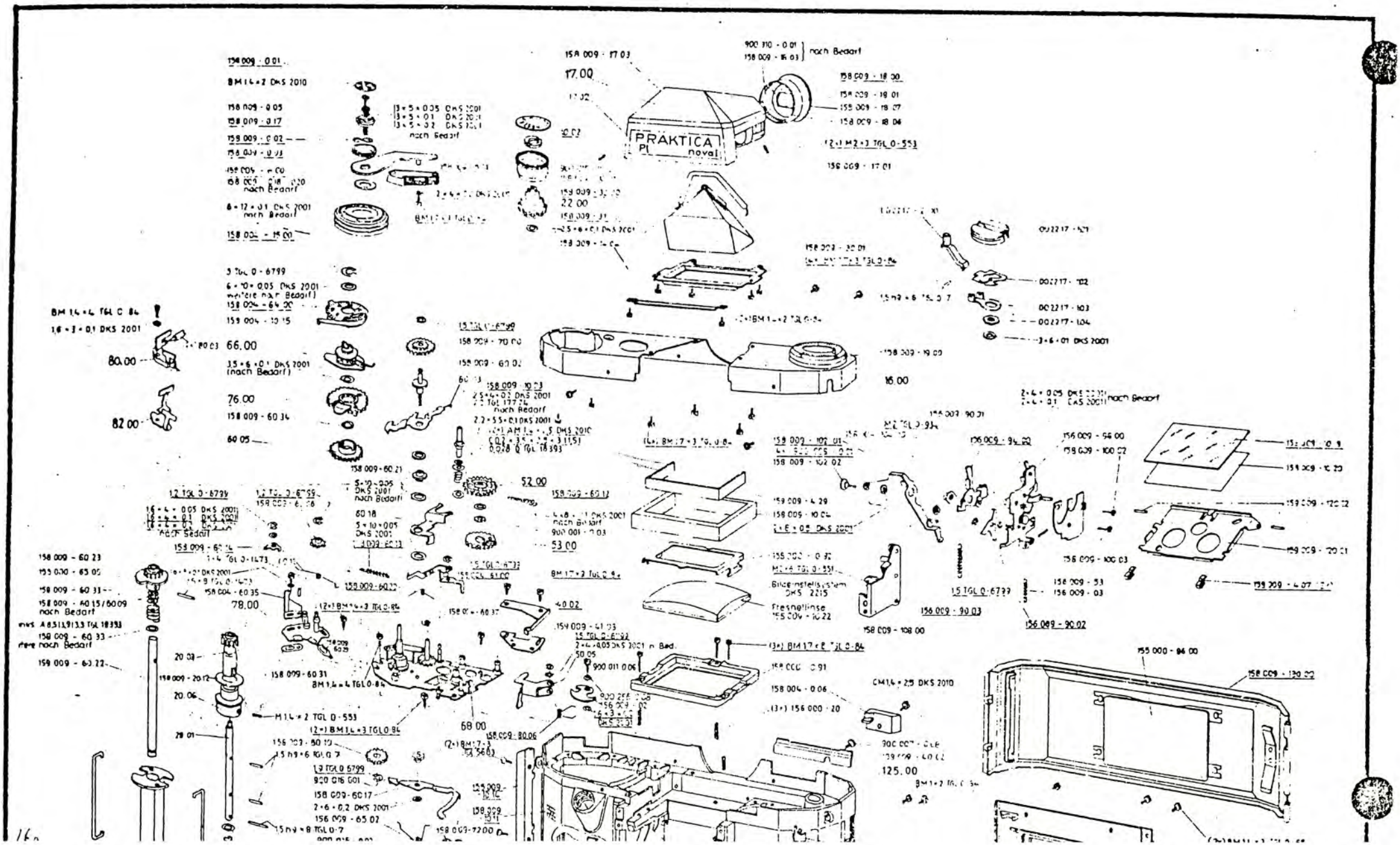
Attention: The holder of the photoelectric element -56.00 with the built-in photoelectric element has always to bear unobjectionably against the incident light

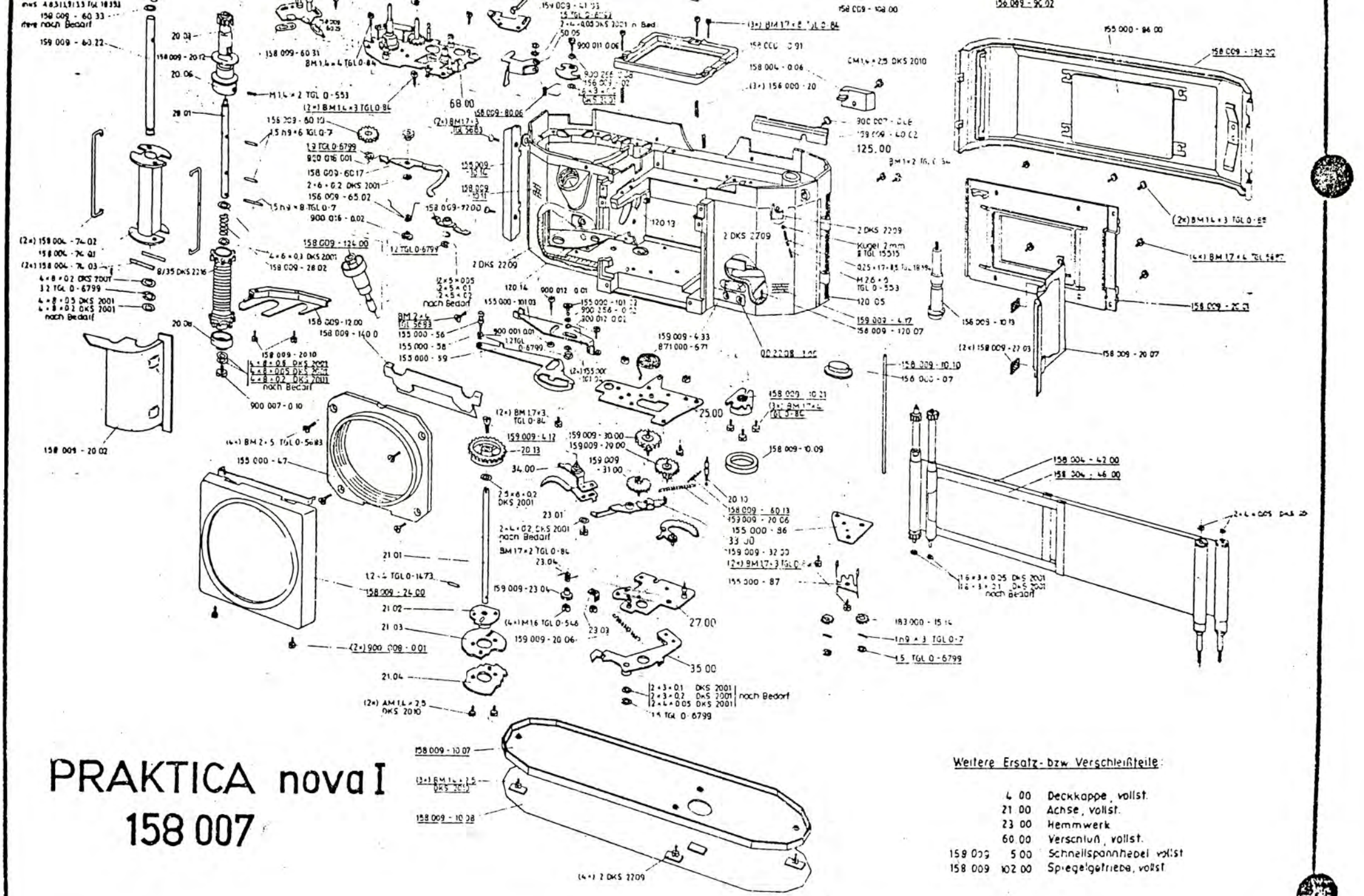


PRAKTICA nova I
158 007

Weitere Ersatz- bzw. Verschleißteile:

	4.00	Deckkappe, vollst.
	21.00	Achse, vollst.
	23.00	Hemmwerk
	60.00	Verschluß, vollst.
159 009	5.00	Schnellspannhebel vollst.
158 009	102.00	Spiegelgetriebe, vollst.

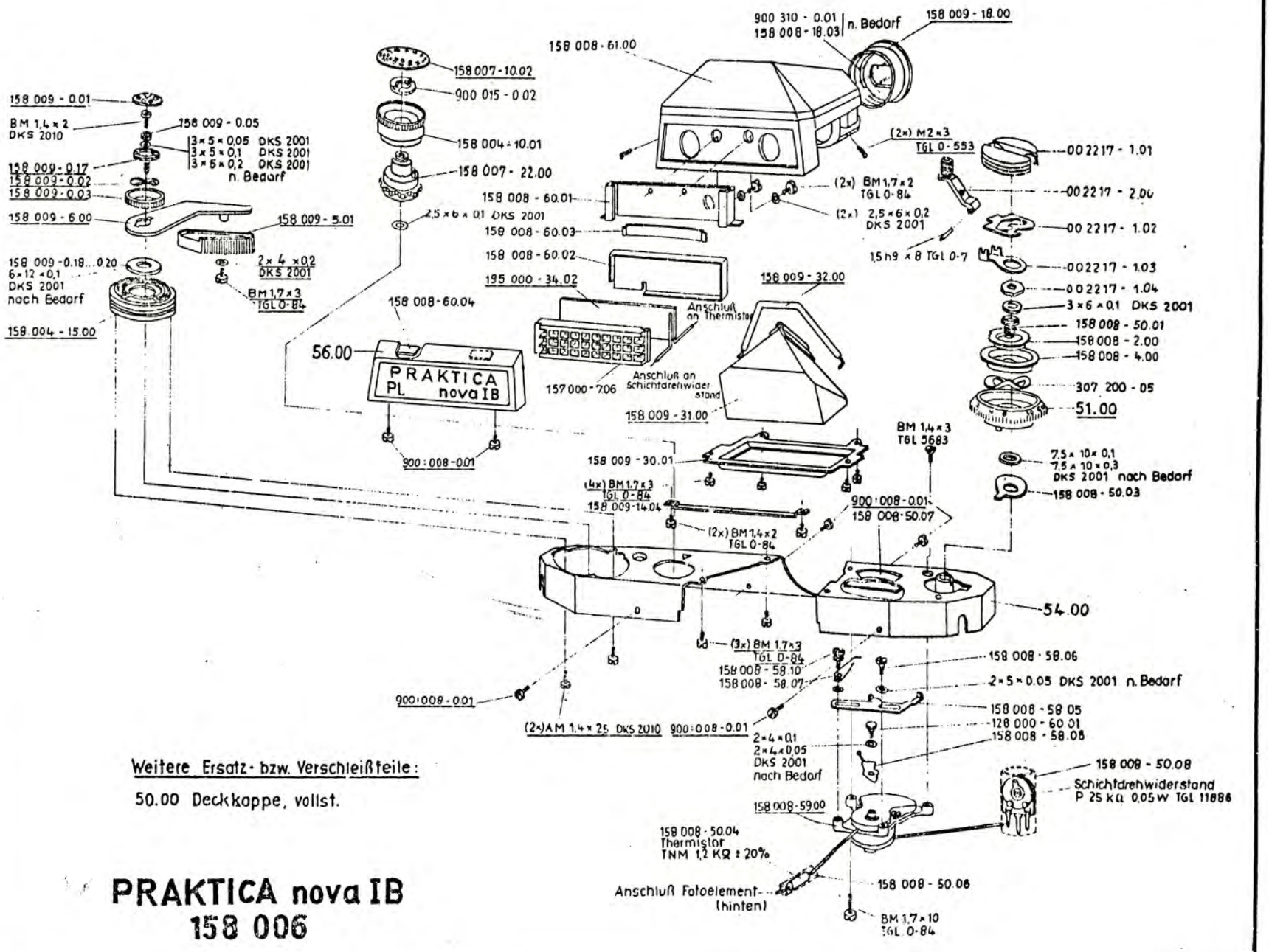

PRAKTICA
PL nova
66.00
76.00
82.00
80.00
78.00
68.00
52.00
53.00
40.02
125.00
16.00
17.00
22.00
Fresnellinse
Blendeneinstellsystem DKS 2215



PRAKTICA nova I
158 007

Weitere Ersatz- bzw. Verschleißteile:

	4.00	Deckkappe, vollst.
	21.00	Achse, vollst.
	23.00	Hemmwerk
	60.00	Verschluß, vollst.
159 009	5.00	Schnellspannhebel vollst
158 009	102.00	Spiegelgetriebe, vollst



Weitere Ersatz- bzw. Verschleißteile:

50.00 Deckkappe, vollst.

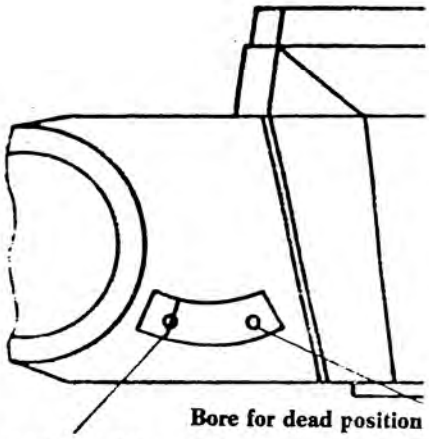
PRAKTICA nova IB
158 006

attachment of the calibrating device to avoid incidence of stray light, above all with low light densities (32 . . . 1000 asb).

The incident-light attachment of the device should not be smaller than the dimensions of the photoeletric element.

In case of light density of 16000 asb, adjust the pointer of the light meter above the left-hand bore by changing the position of the sliding contact at the rotary carbofilm-type resistor.

Expose to light the photoelectric element only for a short duration. Perform a test measurement.



position of the pointer of the light meter at 16000 asb

Finally, place the thermistor and the rotary carbofilm-type resistor, insulated by the insulated tubing in the free space between prism and prism holder, as is shown in the Exploded View. Screw on the cover strip 158 009 -14.04.

Adjustment of the Follow-Up Pointer

Assemble the transmission cam 158 008 -50.03, originally manufactured as unit cam, the speed dial -51.00, the film reminder dial 158 008 -4.00, and the diaphragm dial 158 008 -2.00 according to the Exploded View.

When tightening the slotted nut 158 008 -50.01, the film reminder and the diaphragm dials must be locked in the dials by means of the locking bores (the index of the diaphragm dial showing to 17 DIN) and turned so that aperture 11 is opposite to 1/2 s.

Approach the cam plate to the stop at "lowest light density" (kleinste Leuchtdichte). (Dead position of the pointer of the measuring mechanism.)

In this position, adjust the carried-on follow-up pointer so that the pointer tip is by about one pointer width (0.3 mm) **before** this pointer (Figure 1). The photoelectric element must be unobjectionably darkened.

Adjust by using a small flat tongue at the transmission lever 158 008 -58.05.

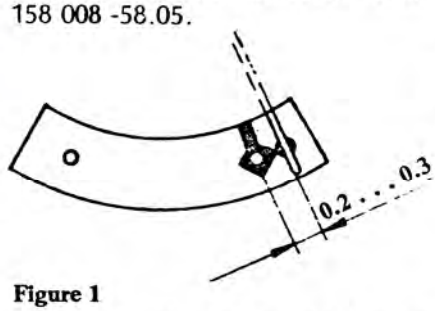


Figure 1

Attention: With darkened photoelectric element the follow-up pointer neither should coincide with the pointer of the measuring mechanism in its dead position nor even pass it (Figure 2 and Figure 3).

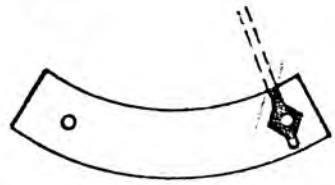


Figure 2 — wrong

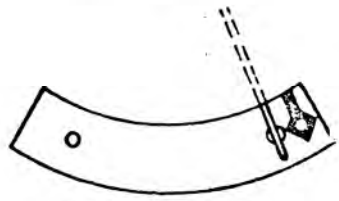


Figure 3 — wrong

Subsequently, check the B-element in the calibrating device by using the data listed below:

32 asb	1/2 s	f/4	17 DIN
250 asb	1/2 s	f/11	17 DIN
2000 asb	1/500 s	f/2	17 DIN
16000 asb	1/500 s	f/5.6	17 DIN

If the tolerance ±3/4 aperture is exceeded to one side, the diaphragm and film reminder dials may be displaced with respect to the shutter speed setting dial using the special spanner 158 008 -50.00 M 1 (for this purpose do not loosen the slotted nut because this would effect displacement of the nose at the film dial).

If in spite of this adjustment one or several tolerances are still exceeded, readjust the appropriate cam radius.

8 — HOW TO CORRECT FAULTS OF CAMERA NO. 158 006

Replacing the Photoelectric Element (not only in case of contact or mechanical faults but also of such due to fatigue)

Remove the eyepiece 158 009 -18.00 and the complete prism 158 009 -30.00 from the camera top.

Unscrew the cover plate 158 009 -14.04 from prism holder. Unsolder connection between photoelectric element and thermistor and rotary carbofilm-type resistor.

Remove the complete cap -56.00 from the inner space of the prism holder.

Loosen the screws 900:008 -0.01 at the cap and remove the holder with its photoelectric element.

Insert the new tested photoelectric element and reassemble in inverse order as mentioned above for dismantling.

Adjust the B-element according to section 7, assemble the camera top with camera body according to Repair Manual 158 007, **Assembly of the Camera Top**.

Spare parts:

Photoelectric element 195 000 -34.01

Replacing the Measuring Mechanism

Unscrew the covering plate 158 009 -14.04 from the prism holder.

Unsolder connection between measuring mechanism and thermistor and rotary carbofilm-type resistor. Unscrew casing of measuring mechanism from the camera top. Do not remove the defective measuring mechanisms from their casings, but send the complete units to the manufacturer for repair.

Unscrew slide 158 008 -58.05 and follow-up pointer 158 008 -58.08 and attach them

measuring mechanism. Insert the washers 2 x 5 x 0.05 mm according to DKS 2001.

Assemble only such complete measuring units the pointers of which are directed to the zero point in the casing.

Assemble in inverse order as has been mentioned for dismantling.

Adjust the B-element according to **Determination of the Load Resistance** and **Adjustment of the Follow-Up Pointer**, assemble the camera top with the camera according to **Assembly of the Camera Top**.

Spare parts:

Measuring mechanism 158 008 -59.00

9 — HOW TO CONSTRUCT A CALIBRATING DEVICE

General

Requirements as to TGL 14 463 and standard DIN 1901C are to be met regarding the calibration of measuring devices for light meters as follows:

a) For calibrating, the measuring device for the light meter has to be placed immediately opposite to an illuminated surface of known light density.

b) The light density of this surface must be uniform and should not differ by more than 10% from the value in the center of this surface.

c) When viewing the surface through an angle up to 60° with respect to the vertical of the surface, the light density should not be lower than 85% of that being observed when viewing vertically the same point.

The fundamental construction of a calibrating device can be derived from these requirements. It comprises a groundglass disk the light density of which can be continuously or discontinuously varied by an illuminating device, or an instrument for measuring the different light densities.

Detailed Information about the Calibrating Device

Description

At the front side of a table having a length of about 1.50 to 2.00 m a table board made of wood, hard board or similar material, dimensions about 60 x 60 cm, is mounted vertically on the table top. Distance between board and table edge should be about 20 cm. The board is provided with a circular hole of 6 cm dia. which can be covered with a groundglass disk. A commercial projector for slides — Aspectar 500 — or an instrument of equal capacity — should be used for illumination. To ensure uniform illumination the axis of projection must pass through the center of the groundglass disk. The hole in the board must be located appropriately. The light density of the groundglass disk can be adjusted by varying the distance to the projector. To obtain lower light densities, an additional neutral grey filter is used which has a transparency of = 0.0315 equal to a density of D = 1.5. It is placed in the slide changer and used if necessary.

For convenient adjustment, we recommend to provide the projector with rolls and the table with guide rails. A cord fitting to be actuated from the measuring stand brings the projector in the appropriate distance.

For measuring the luminous density of the groundglass disk, an exposure meter is used which is calibrated within a tolerance of ± 1/4 density step. It indicates the relation of the exposure factors such as diaphragm, exposure time and film speed to the luminous density measured. During measurement, contact the light-receiving side of the light meter with the groundglass disk. Avoid that lateral stray light falsifies the measuring result.

Relations Between Luminous Density and Exposure Factors According to TGL 14463 or Standard DIN 19010

Luminous density B/asb	Aperture k	Film speed x/DIN	Shutter speed t/s
16000	8	17	1/250
4000	4	17	1/250
125	2	17	1/30
32	2	17	1/8

Distance Between Groundglass Disk and Projector as Related to the Slide Level at Different Luminous Densities

The given distances are standard values for the "Aspectar 500" operated with nominal voltage.

Luminous Density [B/asb]	Distance [r/cm]
16 000	about 36 without filter
4 000	about 64 without filter
125	about 64 with filter D = 1.5
32	about 115 with filter D = 1.5

Calibrating Directions

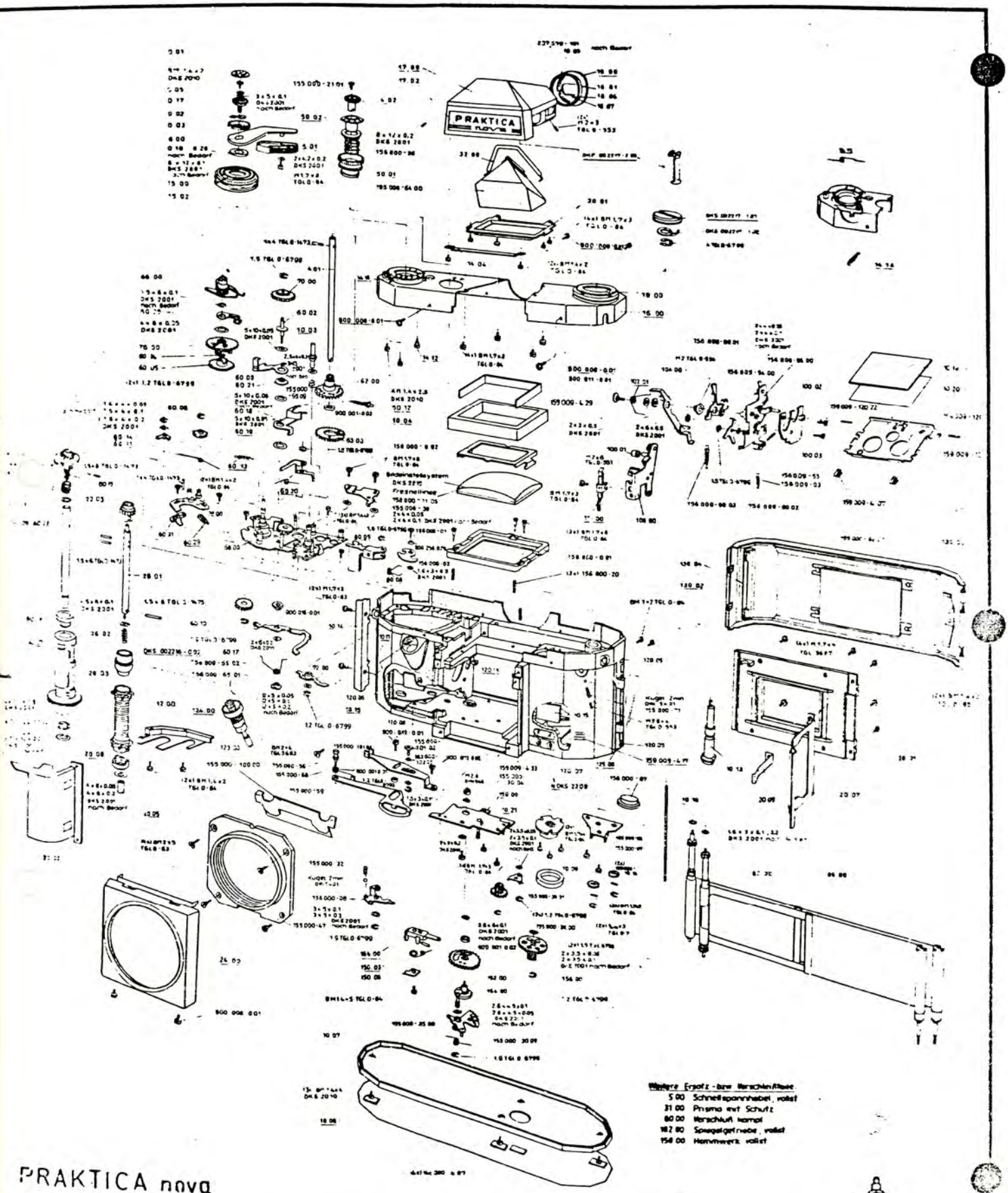
The light meters manufactured by VEB Pentacon Dresden should be calibrated according to the details given in the Repair Manual for the camera in question.

List of Tools and Implements

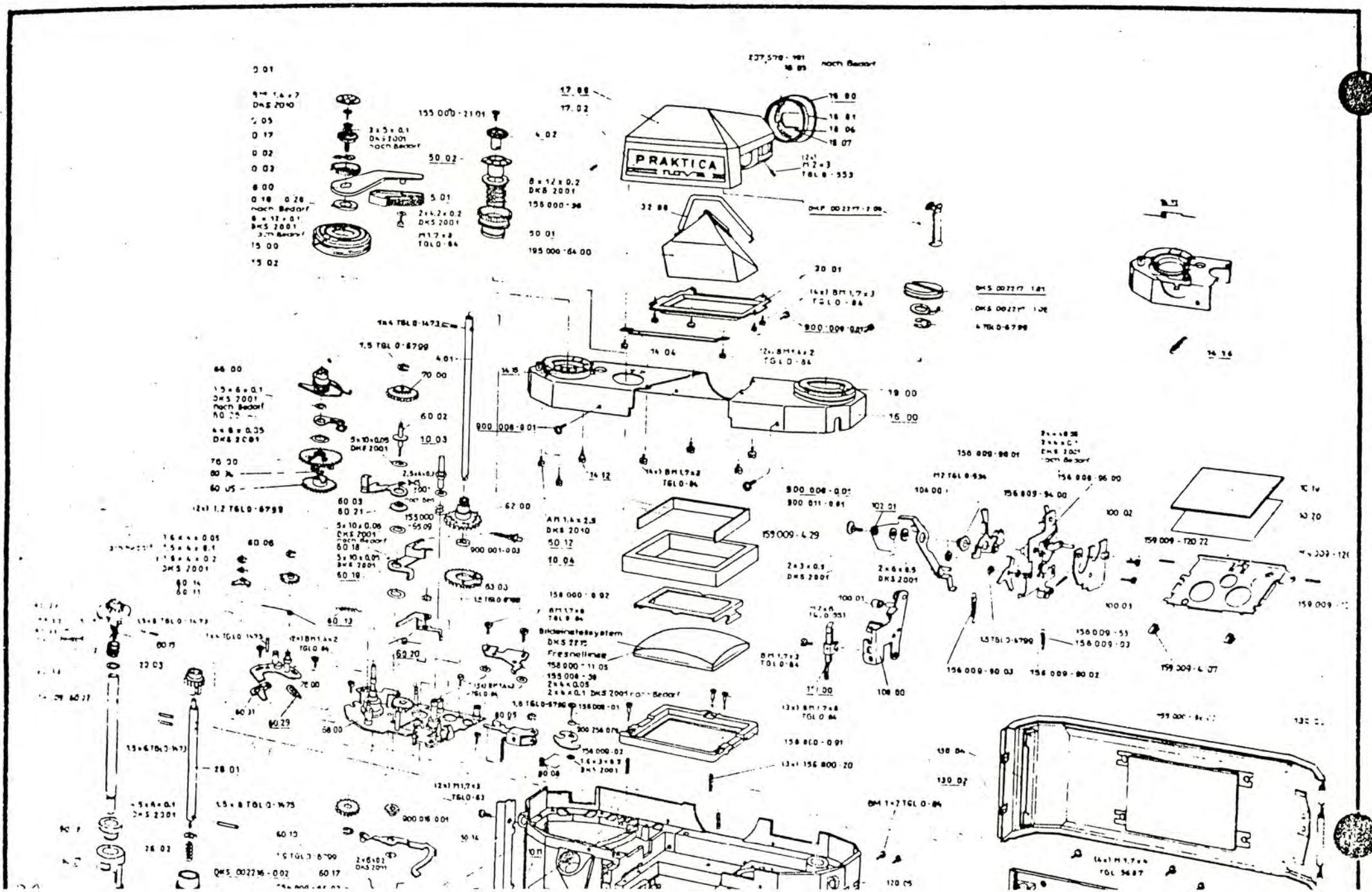
A 23 = Assembly stand for mirror Assembly
A 352 = Spanner for slotted nuts
KWN 21.5 = Interval gauge for mirror-shutter release
L 120 u/1 = Spacer and adjusting gauge for checking the focus
L 133 = Mirror gauge 45°
L 2152/2 = Test frame of film gate for contacting position
Autocollimator lens with level plate or test table
M 102 = Metal mirror
156 009 -O M 3 = Interlocking tool
156 009 -O M 6 = Interlocking tool
158 007 -20.00 L 2 = Fork-type feeler gauge
158 007 -20.00 M 11 = Tool for assembly of slow-down mechanism
158 007 -40.00 L 1 = Adjusting gauge for curtain V 1
158 009 -0.00 M 1 = Spanner for slotted nuts
158 009 -50.00 M 8u/1 = Special spanner
158 009 -120.00 M 6 Spanner for release button
159 009 -23.00 M 2 = Spanner for slotted nuts
159 009 -23.00 M 3 = Spanner for slotted nuts
Short-time meter
Special-spring gauge (Siemens) 0 ... 280 p

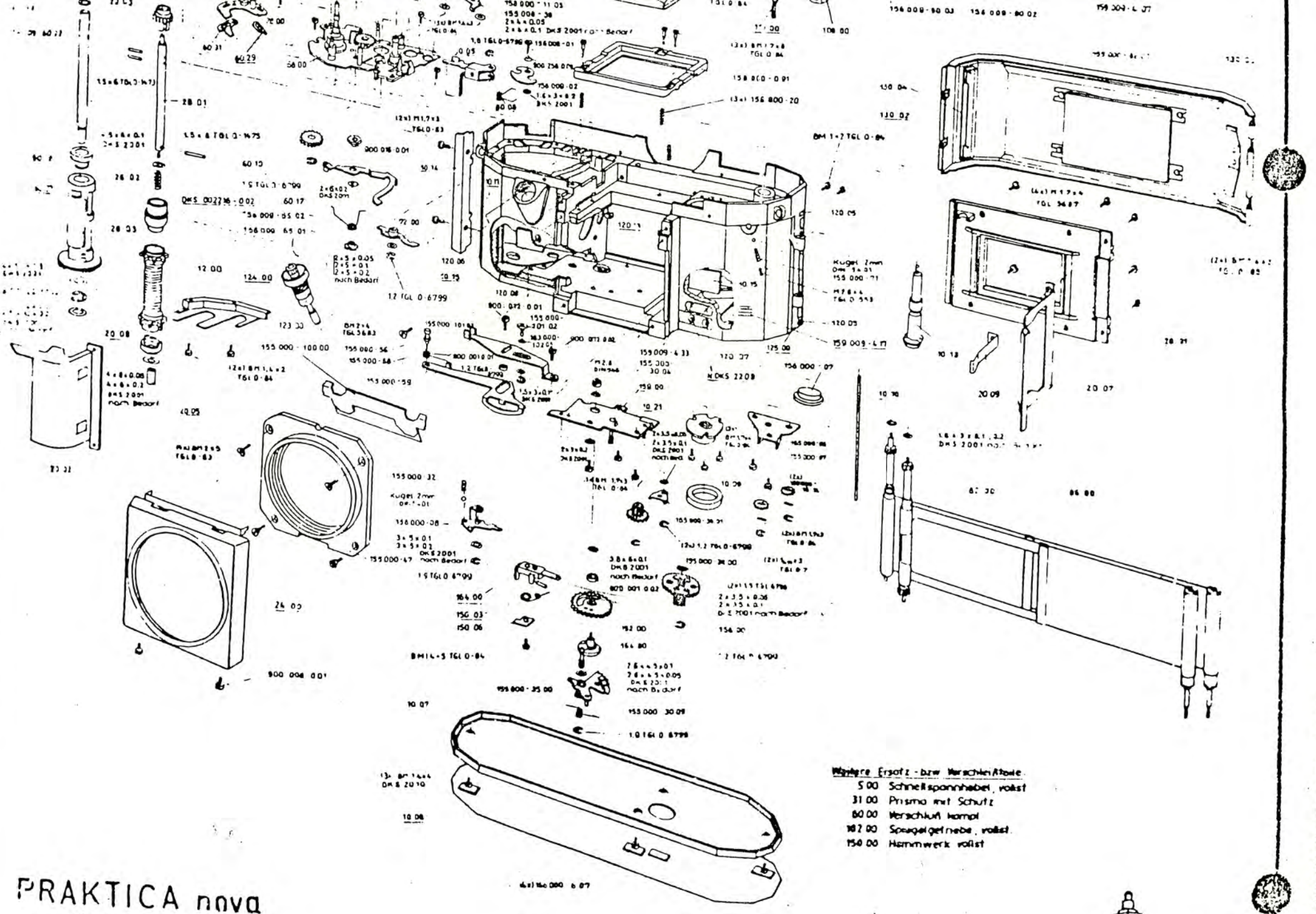
Additional tool for Praktica Nova I B 158 006

158 008 -50.00 M 1 = Assembly Spanner



PRAKTICA nova
158 009


PRAKTICA
Bildeinstellsystem
DKS 2215
Fresnellinse
158 000 - 11 05

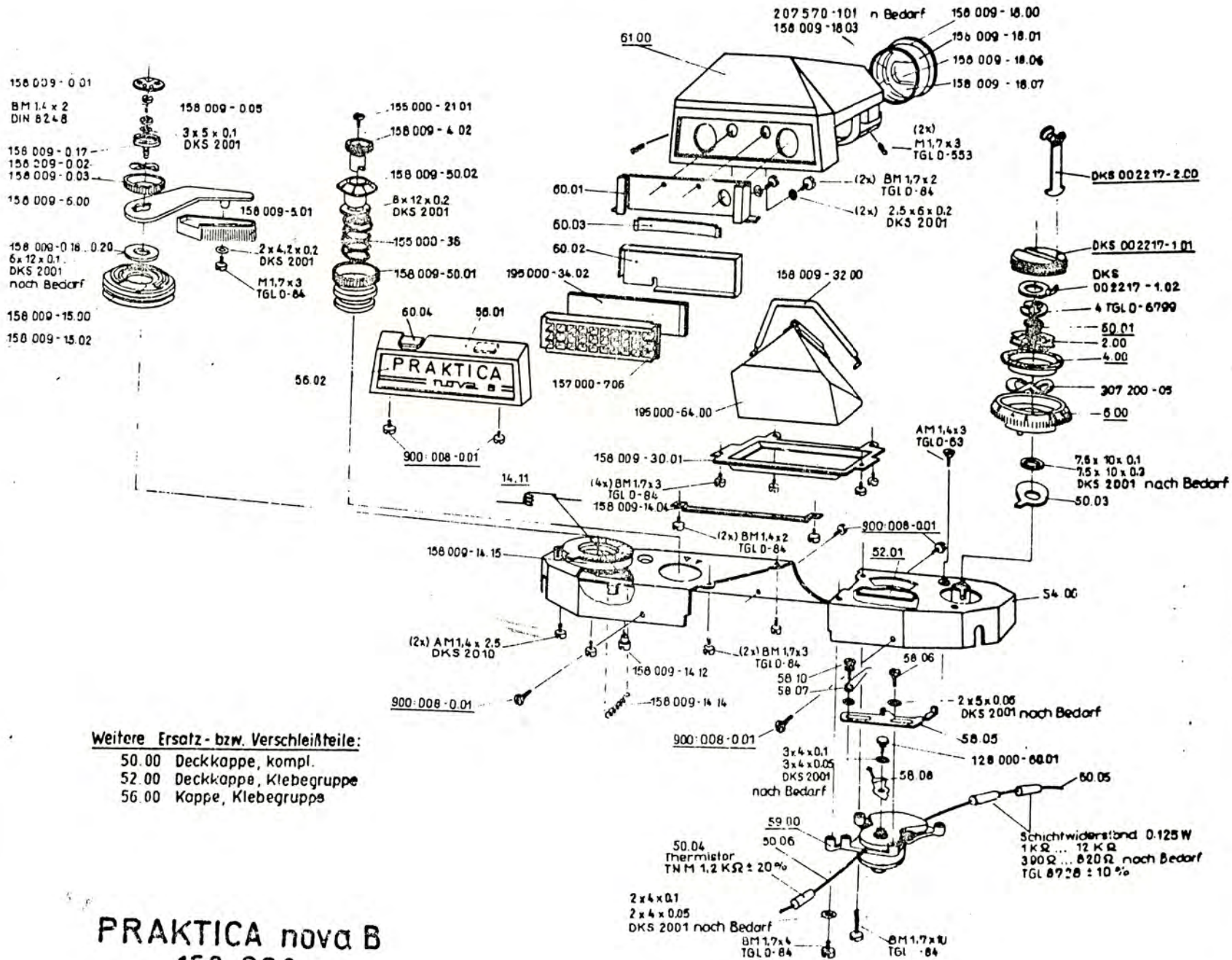


Weitere Ersatz - bzw. Verschleißteile

5 00 Schnellspannhebel, vollst
31 00 Prisma mit Schutz
60 00 Verschluß kompl
182 00 Spiegelgetriebe, vollst
150 00 Hammwerk vollst

PRAKTICA nova
158 009

20R



Weitere Ersatz- bzw. Verschleißteile:

- 50.00 Deckkappe, kompl.
- 52.00 Deckkappe, Klebegruppe
- 56.00 Kappe, Klebegruppe

PRAKTICA nova B
158 008

REPAIR MANUAL FOR THE

PRAKTICA NOVA 158 009
PRAKTICA NOVA B 158 008

CONTENTS

Page

1 — General Notes Regarding Repair Instructions 22
2 — Dismantling the Praktica nova 158 009 22
3 — Reassembling the Praktica nova 158 009 22
4 — Dismantling the Praktica nova B 158 008 25
5 — Reassembling the Praktica nova B 158 008 25
6 — Tools and Working Facilities 26
7 — Exploded View 20-21

1 — GENERAL NOTES REGARDING REPAIR INSTRUCTIONS

This Repair Manual is based on the production stage of November 1, 1964.

It is taken for granted that the Instructions for Use are well known.

The indications: "left," "right," "bottom," "front," etc., given in the Repair Manual refer to the camera in the following position:

> Camera rests on base plate. The camera back, or film track, faces the repair worker.

When using circlips TGL 0-6799 make sure that the smooth side lies against the functional point.

For lubrication of bearing parts use only pure watchmaker's oil (resistant to temperatures between -15 and +40° C).

Parts or assemblies which, before assembling, have been cleaned in benzine, trichloroethylene, or any other washing solution must immediately undergo an aftertreatment in a benzine-oil mixture 20:1 (20 parts of pure benzine and 1 part of watchmaker's oil).

If screws are secured with lacquer, the lacquer has to be dissolved before dismantling with either a nitro thinning agent or a solution of butyl acetate. After reassembling, apply lacquer to all screws and parts which were lacquered before dismantling.

In dismantling, all parts must be put aside in their proper order, as they were removed. This applies especially to all shims and washers which must be put back into their proper places and in the correct order.

All parts and assemblies, if not otherwise mentioned, bear the index number 158 009. When placing orders for spares please mention complete index numbers preceding the numbers of the parts or groups. (Applies to Praktica nova).

All parts and assemblies, if not otherwise mentioned, bear the index number 158 008. (Applies to Praktica nova B).

The underlined numbers in the Exploded View refer to parts belonging to the index number 158 009.

All spare and replacement parts bearing the above index number are to be found in the corresponding List of Repair Parts and Spares.

2 — DISMANTLING THE PRAKTICA NOVA 158 009

The Exploded View 158 009 shows how the camera has to be dismantled for replacing a defective part or a defective assembly.

Attention in dismantling: Speed dial 50.02 and screw socket 20.05 (of film drum) have left-hand thread!

If gear assemblies have to be dismantled it is advisable to mark the position of the cogwheels in relation to one another beforehand, e.g. when the shutter is released. This applies especially to the shutter and slow-speed mechanisms.

3 — REASSEMBLING THE PRAKTICA NOVA 158 009

Pre-assembling the Camera Body

Make sure that the light-tight fittings -120.05; -120.07; -120.08 and -10.17, and strip -120.13 are available.

The knob in the automatic diaphragm lever 155 000-101.03 must be positively movable. Screw in release assembly 124.00 with key 158 009-120.00 M 6.

Attention: Release assembly must lock positively.

Assembling the Mirror Gearing

Insert mirror gearing in tensioned condition into the right-hand side of the camera and tighten it.

Attention: The guide pin must engage in the slot of the mirror base and lever 104.00 must engage in the automatic diaphragm lever 155 000-101.03.

When screwing mirror gearing tight, move it towards the front. Between pawl assembly 156 009-94.00 and mirror lever of 156 009-96.00 there must be a clearance of 0.4mm to be adjusted on lever of 96.00 with saw set 156 009-0 M 6. Use gauge L 133 to adjust the 45° position by means of threaded pin 156 009-53. Apply lacquer to threaded pin.

Assembling the Contact Mechanisms

Adjust release free from play with threaded pin M 2x6 TGL 0-551. Apply lacquer to threaded pin. The long contact piece of 111.00 must rest against reel insulator 100.01 without play.

Attention: Between the two contact pieces of 111.00 there must be a gap of 0.6mm.

Assembling the Shutter Mechanism

Fit winding spindle 60.00 to shutter mounting plate and fix assembly into camera.

Attention: On cocking of the shutter, in immediate succession, the release catch -60.03 must drop in behind stop of gear wheel 76.00 and mirror winding lever 77.00 into the deepest point of the cam. At the same time return latch

-60.14 must release return latch 66.00.

After drop-in of the release catch there must still be an overdraw of 0.15 to 0.4mm.

The winding friction of the film spool must be Md = 200 ± 50pcm.

Adjusting the Shutter Mechanism

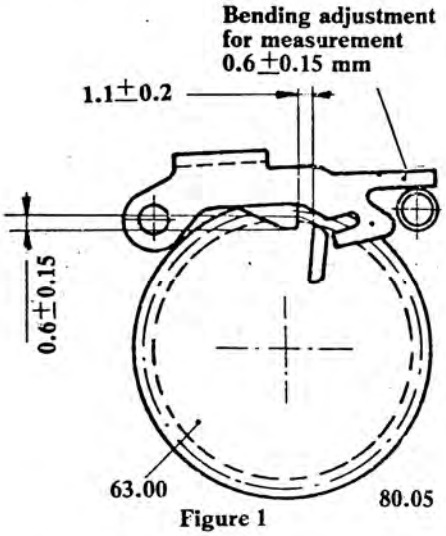


Figure 1

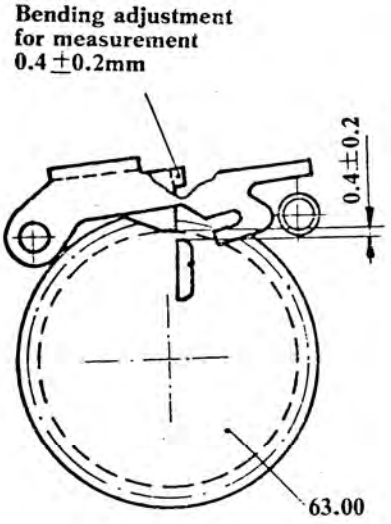


Figure 2

Adjust depth of drop 0.6 ± 0.15mm according to Fig. 1.

Attention: When adjusting, pay attention to measurement 1.1 ± 0.2 (Fig. 1).

1. Shutter cocked.
2. Rivet of speed wheel 62.00 lies on left-hand carrier side of shutter wheel 63.00.
3. Eliminate play on one side of 62.00.
4. Adjustment by reversing gears 62.00 and 70.00.

Adjust clearance 0.4 ± 0.2mm according to Fig. 2.

Note: 1. Shutter run down.
2. Instant shot lever 80.05 rests free from play against lever 104.00.

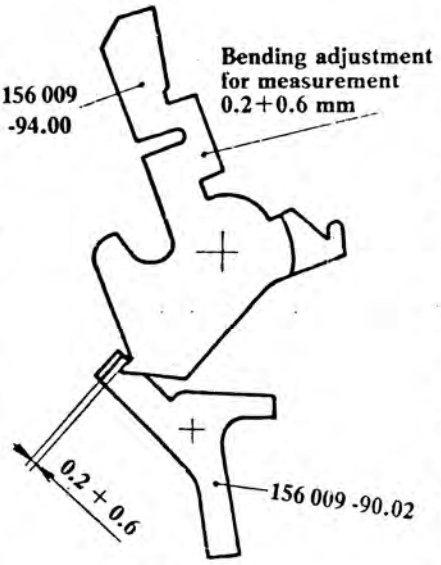


Figure 3

Adjust overdraw 0.2 + 0.6mm, as in Fig. 3, with saw set 156 009 - 0 M 3. Adjust rapid wind lever on eccentric of stop 78.00 to run parallel with edge of camera body.

Assembling and Adjusting the Curtain Groups

Make sure that the curtain spindles have an axial play of 0.1 to 0.2mm on the right. Adjust axial play of speed wheel and shutter wheel on projection of bearing plate 155 000 - 38 to a minimum.

Adjust curtains, with shutter cocked, according to Fig. 4. Measured with reed balance in center of picture gate and in winding-up direction the curtain tension must be:

86.00 curtain 1 P = 120 p
82.00 curtain 2 P = 75 p

At slow travel of the shutter (speed 1/250) a gap of 0.5mm must be adjusted between the curtain ledges of curtain 1 and curtain 2.

Adjustment is made by modification of the mesh, or on the threaded pins M 1.7 x 2 TGL 0-553. In the latter case, bore threaded pins separately.

Assembling the Slow-Speed Mechanism

Shutter, with built-in slow-speed mechanism, must run down correctly.

With shutter and segment 155 000 - 35.00 tensioned, the large, flat rivet of driving wheel 152.00 must stand in the borehole of the segment.

Connect long cable of contacts 111.00 to F contact. With slow-speed mechanism disconnected there must be a gap of min. 0.5mm between the pinion of 156.00 and the stop of the segment. Adjustment is made on lever 156.000 - 08.

Adjusting the test measurements on Lens Side

Measurement min. 8.7mm:

Check with automatic diaphragm lever in and out of operation. Adjustment is made by setting press lever 155 000 - 59.

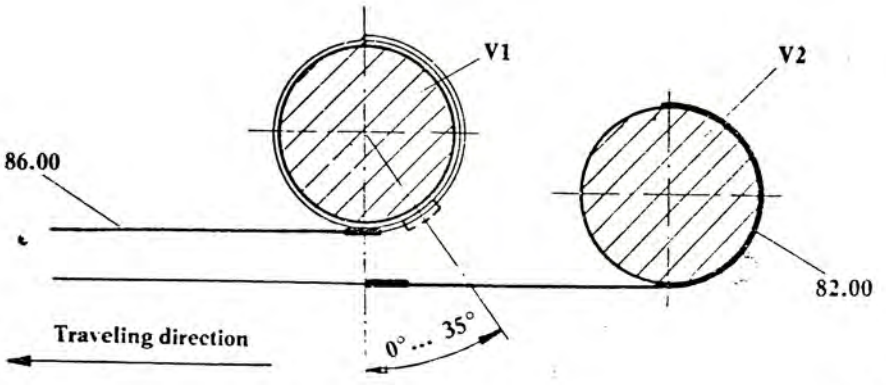


Figure 4

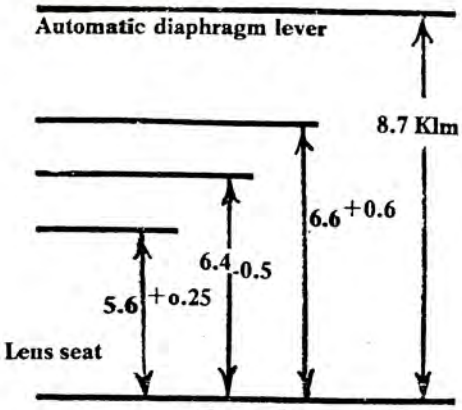


Figure 5

Measurement 6.6 + 0.6mm: Contact 111.00 closed

Connect F contact to a contact testing device. Wind up shutter as far as to close the F contact. Screw Interval Gauge KWN 21.5 in far enough to close contacts 111.00 (glow lamp lights up). Make adjustment on short contact of 111.00.

Measurement 6.4 - 0.5mm. Disengagement of the Mirror Gearing

Cock the shutter. Use Interval Gauge. Adjustment is made on eccentric of lever 104.000.

Measurement 5.6 + 0.25mm: End position

Adjustment is made on eccentric of supporting plate 108.00.

Assembling the Picture Gate and Film Drum

When assembling, make sure that all film guiding parts are centered in relation to the picture gate. Use Gauge 152 000 - 0 LL a. Check focus measurement 45.5 ± 0.02mm with Hirth Minimeter and Gauge L 120 and /1.

Check functioning of film drum 28.00 for rewinding.

Adjusting the F and X Contacts

Set mechanism on "B". Insert Test Picture Gate L 2125/2 into film frame. F contact must be made when rim of the curtain ledge of curtain 1 is visible in the slit of the Test Picture Gate. Adjustment is made on contact spring 155 000 - 40.00. X contact has to be made when rim of the curtain ledge of curtain 1 aligns with the left-hand edge of the film frame or lies up to 2mm behind it.

Adjustment is made on contact lever 160.00.

Adjusting the Shutter Speeds

Adjust the shutter speeds with the aid of a Short-Period Meter MT 2 and Lighting Equipment.

The measuring device must be adjusted so that the light gap is reproduced sharply in the shutter plane of the camera.

Take care that "Beginning" and "End" are 0 to 1mm away from the edge of the film frame.

The following speeds are adjusted and tested:

The following speeds are adjusted and tested:	Beginning	Middle	End
1/500 sec.:	"	"	"
1/250 "	"	"	"
1/125 "		"	
1/8 "		"	
1/4 "		"	
1/2 "		"	

Speed Value Table (TGL 7708)

Speed (sec.)	Rated Value (ms)	Tolerance %
1/500	1.95	+36.6
1/250	3.91	—26.8
1/125	7.81	
1/60	15.63	
1/30	31.30	+23.1
1/8	125	—18.8
1/4	250	
1/2	500	

Attention: The ratio between the longest and the shortest actual value of a speed must not exceed

$$\frac{t_{e\,max}}{t_{e\,min}} = 1.5$$

Adjustment of 1/500 is made by modifying the tension of curtain 2 and adjusting the rear projection of the instant lever.

All shutter speeds which run off without the slow-speed mechanism must now lie within their tolerance.

Switch in the slow-speed mechanism. Adjust the slow shutter speeds, 1/8 to 1/2 sec., by bending the stop for segment 155 000 - 35.00.

Assembling the Mirror

Work on Support A 23.

Attention: With the mirror base swung upwards, the bounce lever (of 156 009 - 96.00) must place itself definitely underneath it and keep it in upward position.

After release of the shutter the mirror base must flap upwards and, when curtain 2 has run down, it must move clearly to the 45° position.

Assembling the Camera Back

The force of the film pressure plate in working position must be

$$P = 400 \pm 50\ p.$$

Optical Adjustment with Auto-Collimator

Check Auto-Collimator 400 LL 9 and /1 in accordance with Basic Working Directions No. 106. Cock the camera shutter. Place Metal Mirror M 102 into framework 158 000 - 0.91. Adjust position of frame so that:

1. the test hairline cross (for parallel measuring) is inside the small tolerance circle, and
2. maximum sharpness of the second hairline cross (position not adjustable) is achieved at the collimator value 50 ± 1.5mm. Release the shutter, check setting. Secure adjusting screws with lacquer.

with Test Chart

Make this adjustment only if no auto-collimator is available. Distance of Test Chart from camera 2 meters (6'8").

Cock the camera shutter, set lens on 2 meters (6'8"). Place ground glass into frame 158 000 - 0.91.

Adjust position of frame, thus bringing test image into sharp focus. Use magnifier for viewing. Also pay attention to the 4 corners of the ground glass in case the frame is out of line.

For subsequent checking at the infinity setting the object must be at a distance of at least 50 meters (166'). Also here, maximum sharpness of the ground glass image must be achieved.

Secure adjusting screws with lacquer.

Inspection with Complete Camera

The camera must be assembled according to **Assembling the Camera Top**.

Set up the camera at a distance of at least 50 meters (166') from an object with conspicuous vertical lines. At the infinity setting the vertical lines must show no displacement in the intersection area.

Assembling and Adjusting Operation of the Exposure Meter

Fix temporary cover plate 158

009 - 10.00 M 3 with camera shutter released, camera back locked and catch 60.25 swung clockwise against lug of gear wheel 60.06. Adjust advance of counter dial on eccentric cam of 76.00. With the camera back closed, the counter dial must count correctly.

Adjust double lever -60.19 so that, on opening of the camera back, the counter dial will jump back accurately to stop position.

Assembling the Camera Top

Top cover is fitted on as described in section above.

Tighten knobs B DKS 2210 -0.02 for carrying strap with Special Pliers 127 009 G 20 M 8.

Screw on speed dial - 50.02 with Assembling Key A 569 (left-hand thread).

Attention: When tightening the speed dial, catch hold of setting knob -50.01 and hold it tight. Do not tighten parts opposing pawls. Screw bush -0.17 tight with Slotted-nut Key 158 009 - 0.00 M 1.

4 — DISMANTLING THE PRAKTICA NOVA B 158 008

Dismantle as described in Section 2, paying attention to the Exploded Views Praktica nova B 158 008 and Praktica nova 158 009.

5 — REASSEMBLING THE PRAKTICA NOVA B 158 008

Assemble camera body and camera top as described in Section 3, paying attention to Exploded Views 158 00 and 158 009.

Technical Specification of the Exposure Meter

Built in, not coupled exposure meter

Measuring Range:
16 asb to 128 000 asb

Tested luminous densities
32 asb; 250 asb; 2000 asb; 16,000 asb

Tolerance allowed
±3/4 diaphragm value

Electric parts
Se cell E 38 x 14.5mm
Measuring mechanism Md. = 13.8mm
Type 1, in dustproof casing
Thermistor Th R 20° = 1.2 kiiohms
External resistor R_a = 390 to 820 ohms 1 to 12 kilohms
Type 1 0.05 W

Principle of Calibrating the Exposure Meter

The measuring mechanism, in dustproof casing, and the photocell are mounted to the cover plate of the camera.

Determining the External Resistance (R_a)

The measuring mechanism is connected in series with the photocell, a thermistor and a resistance selector (commercially available decimal resistance).

Switch on the Lighting Equipment for 16,000 asb. Set the resistance selector to bring the pointer of the measuring mechanism above the second boring in the casing.

Coordinate the selected external resistance (R_a) with the exposure meter unit.

Should no resistance selector be available, the external resistance on the exposure meter has to be measured and, corresponding to the position of the measuring pointer at 16,000 asb, a resistance having a smaller or a greater value (kilohms or ohms) coordinated by means of tests.

Adjusting the follow pointer

Fix the cam disk, the dials for shutter speed, film speed, and diaphragm stops, with the appurtenant washers. Set diaphragm scale against 17 DIN and, through the arresting borehole, coordinate diaphragm scale and film speed scale with the shutter speed scale. 1/2 sec. diaphragm stop 11 17 DIN. Adjust cam disk to stop at the lower luminous densities.

Switch to 32 asb. In stop position of the cam disk the follow pointer must stand in the lower half of the angle from zero point to position of measuring pointer at 32 asb. **Note:** The follow pointer must not reach the measuring pointer in rest position.

If necessary, make adjustment on transmission slide. Thereupon, check the exposure meter at the following 4 measuring points:

32 asb	1/2 s	f/4	17 DIN
250 asb	1/2 s	f/11	17 DIN
2000 asb	1/500 s	f/2	17 DIN
16000 asb	1/500 s	f/5.6	17 DIN

If the tolerance is surpassed on one side, the diaphragm and film speed dial can, with the aid of Assembling Key 158 008 - 50.00 M 1, be shifted in relation to the shutter speed dial as a means of finding the deviations.

Should there still be surplus tolerance the cam disk has to be individually refinished or, if necessary, replaced.

After replacement, or refinishing, of the cam disk the adjustment has to be checked once more.

Directions regarding assembling

Assembling and dismantling of the exposure meter is carried out according to the Exploded View.

Repairing the Exposure Meter; Photocell or Measuring Mechanism Defective

Replacing the photocell (not only in case of faults in contact or mechanism but also in case of fatigue).

Remove ocular and prism from camera top. Loosen soldering connections. Loosen 2 cap screws on inside of prism seat. Remove mounting support of photocell including protective cap. Replace photocell. Reassemble and check camera top according to instructions.

Replacing the Measuring Mechanism

Loosen soldering connections with external resistance and thermistor. Screw casing of measuring mechanism out of top cover. Replace measuring mechanism.

Attention: When the new measuring mechanism has been installed in the casing the measuring pointer, in rest position, must stand above the lower index point. Reassemble and check camera top according to instructions.

Describing the Lighting Equipment EG 15

Lighting Equipment for adjusting and checking the automatic exposure control.

Technical data

Grades of luminous density	32 asb
	64 asb
	250 asb
	1,000 asb
	2,000 asb
	4,000 asb
	16,000 asb

Operating voltage U = 160 V

To maintain a constant voltage it is advisable to connect a voltage stabilizer.

Lamp 220 V / 300 W

Operating current 1.2 A

Additional requirement (not supplied):

Lumen meter or

gauged photocells.

If photocells are used they have to be gauged by a "Photometrical Institute" in accordance with the given luminous densities.

Bring photocells into connection with a microammeter, register the ascertained gauge values. Repeat gauging once a month.

Adjusting by means of the Lighting Equipment.

Adjusting the individual luminous densities begins at the greatest luminous density, 16,000 asb. By movement of the slide the luminous density is brought to the required value — in case of photocells, to the fixed photo current of the gauged photocell.

Note:

1. Even illumination of the opal glass screen.
2. Readjust light unit after every exchange of lamps.
   Attention: When exchanging lamps remove the lamp holder from the equipment (loosen 2 milled screws) and adjust the filament of the lamp.
3. Obscure the light area by means of the masking slide after each test (especially important at 16.000 asb).
4. Make 2 control measurements a day at 250 asb (aging of the lamp). If necessary, make readjustment by shifting the slide.

Explaining the units of luminous density:

asb = Apostilb

ftl = footlambert

1 asb = 9.29×10^{-2} ftl

6 — TOOLS AND WORKING FACILITIES

A23 — Support for mounting the mirror

A569 — Assembling Key for speed-setting dial

158 009 - 0.00 M 1 = Slotted-nut Key

158 009 - 120.00 M 6 = Key for release knob

127 009 - G 20 M 8 = Special Pliers for strap knobs

L133 = Mirror Gauge 45°

L 120 and/1 = Gauge for focus measurement

L 2125/2 = Test Picture Gate

KWN 21.5 = Interval Gauge for mirror/shutter release

157 000 - O LL 1 = Gauge for position of film guide parts

400 LL 9 and/1 = Autocollimator with Level Plate or Test Chart

M 102 = Metal Mirror

156 009 - O M 3 = Saw Set

156 009 - O M 6 = Saw Set

158 009 - 10.00 M 3 = Temporary Cover Plate for adjusting exposure counter

Hirth Minimeter

MT 2 Short Period Meter

Reed Balance (Siemens) 0 to 280 P

Additional Instruments for Praktica nova B

EG 15 = Lighting Equipment

158 008 - 50.00 M 1 = Assembling Key

Resistance Selector (consisting of commercially available decimal resistances)

HANIMEX

PRAKTICA NOVA I No. 158 007

Price List for Spare Parts

August 1974

Prices Subject to Change

158 007

10.02	Time disc	.30
14.00	Top cap	30.75
16.00	Top cap, rivet group	5.55
17.00	Prism seat holder	7.05
17.02	Shield	.40
20.03	Toothed wheel	.25
20.06	Socket	.25
20.08	Socket	.10
20.10	Screw bolt	.10
20.13	Spur wheel	.90
21.00	Axle, compl.	2.60
21.02	Curve	.25
21.03	Curve D	.55
21.04	Curve E	.95
22.00	Stop bush	.80
23.00	Braking mechanism	6.15
23.01	Lever	.10
27.00	Platine, above, rivet group	.35
28.00	Sprocket, compl.	.80
23.04	Torsion spring	.10
28.01	Axle	.60
33.00	Anchor group	.45
34.00	Angle lever, rivet group	.35
35.00	Lever (new 36.00)	.30
40.02	Spring	.10
40.04	Bearing sheet	.10
50.05	B-lever	.60
52.00	Toothed wheel, rivet group	.50
53.00	Shutter, rivet group	1.00
60.00	Shutter, compl.	14.30
60.03	Release pawl	.40
60.05	Toothed wheel	.50
60.18	Forcing lever	.20
66.00	Return catch	.95
65.00	Platine, rivet group	3.05
68.01	Platine	.35
68.03	Bush	.20
68.11	Bolt	.10
68.18	Bush	.10
76.00	Spur wheel	1.15
78.00	Limit	.50
80.00	Flash contact group	.35
82.00	Flash contact spring	.40
108.00	Holding sheet	.80
125.00	Housing	17.10
175.03	Bush	.10

158 009

0.01	Reminder dial	.30
0.02	Shaft spring	.10
0.03	Setting ring	.25
0.17	Bush	.10
5.00	Rapid wind lever, compl.	1.05
5.01	Grip, plastic	.10
10.03	Rewind nipple	.10
10.07	Bottom sheet	1.40
10.08	Cover	.10
10.10	Pin	.10
10.11	Cover	.10
10.14	Guiding rail	.45
10.19	Mirror	.60
10.21	Bottom nut, new	.35
10.04	Sealing frame	.05
18.00	Mount, compl.	1.90
20.01	Frame gate	1.35
24.00	Front cap	2.05
31.00	Prism w/protection	29.25
60.12	Tension spring	.05
60.13	Tension spring	.10
60.14	Return catch	.35
60.20	Shanked spring	.45
60.29	Stop spring	.10
60.31	Control sheet	.10
80.06	Torsion spring	.10
102.00	Mirror drive	3.95
102.01	Torsion spring	.10
130.00	Back	6.90
130.01	Cover	.15
130.02	Cover (small back)	.10

158 004

10.15	Leaf spring	.55
15.00	Protecting ring	1.65
42.00	2nd curtain	2.10
46.00	1st curtain	2.30
60.37	Driver	
61.00	Double lever	.50
64.00	Counting disc N	1.25

159 009

4.07	Accessory clip	.10
4.17	Cover	.10
4.12	Threaded cone	.10
31.00	Anchor drive, rivet group	
33.05	Bush	

156 000

0.07	Bearing disc	.10
0.20	Spring	.10

155 000

0.47	Lens plate	.95
0.56	Screw	.10
0.57	Spring	.10
101.00	Spring diaphragm lever	.40

156 009

0.02	Indicating lever	.10
0.03	Tension spring	.10

DKS 2217

1.00	Rewind button	1.65

DKS 2208

1.00	Flash nipple	.25

DKS 2218 Carrying eyelet .25

158 007

60.11	Spring	3.50

PRAKTICA NOVA B No. 158 008

Price List for Spare Parts Nova B

August 1974

Prices Subject to Change

158 008

2.00	Diaphragm disc	.80
2.01	Diaphragm disc	.75
4.00	Film speed scale	.75
4.00	Film speed scale	.60
4.02	Rivet	.10
6.00	Time dial	1.50
6.01	Time dial	1.40
6.02	Rivet	.10
50.00	Top cap, compl.	98.00
50.01	Mounting ring	.10
50.03	Cam disc	.10
50.06	Tube	.10
52.00	Top cover with disc	6.20
54.00	Top cover w/out disc	5.05
54.01	Top cover	3.00
54.02	Platine	.10
54.03	Bolt	.10
54.04	Bush	.15
56.00	Cap, pasted group	1.80
56.01	Cap	1.40
56.02	Disc	.25
58.00	Metering mechanism with housing	19.40
58.05	Slide	.15
58.06	Additional screw	.10
58.08	Following indicator	.10
58.10	Additional screw	.10
58.11	Disc	.10
58.12	Disc	.10
59.00	Metering mechanism with housing	18.05
59.02	Housing for metering mechanism	1.15
60.00	Holder, compl.	9.45
60.01	Holder	.35
60.02	Insulating piece	.10
60.03	Leaf spring	.10
60.04	Additional piece	.10
61.00	Prism seat holder, pasted group	6.80
61.01	Prism seat holder	5.15

Finishing parts

158 008

50.04	Thermistor	.45
50.07	Glass pans	.10
52.01	Glass pans (new No. 50.07)	.10
58.07	Torsion spring	.10
59.01	Cap	2.65
59.03	Metering mech.	11.60

158 009

0.01	Reference disc	.30
0.02	Shaft spring	.10
0.03	Setting ring	.25
0.17	Bush	.10
4.02	Button	.45
5.00	Rapid wind lever, compl.	1.05
5.01	Grip, plastic	.10
10.03	Rewind nipple	.10
10.04	Sealing frame	.05
10.07	Bottom sheet	1.40
10.08	Cover	.10
10.10	Pin	.10
10.11	Cover	.10
10.14	Guiding rail	.45
10.15	Foil	.10
10.19	Mirror	.60
10.21	Bottom nut	.35
15.00	Protecting ring	1.75
15.02	Disc	.10
18.00	Mount, compl.	1.90
20.04	Bush (new No. 20.08)	.10
20.05	Threaded cone	.10
24.00	Front cap	2.05
26.04	Film sprocket	.10
31.00	Prism w/protection	29.25
50.01	Setting lever	.80
50.02	Time dial	.90
60.11	Torsion spring	.10
60.12	Tension spring	.05
60.13	Tension spring	.10
60.14	Return catch	.35
60.19	Double lever	.20
60.20	Shanked spring	.10
60.25	Driver	.50
60.27	Film spool	.10
60.29	Stop spring	.10
60.31	Control sheet	.10
66.00	Return catch	.10
80.05	B-lever	.55
80.06	Torsion spring	.10
82.00	2nd curtain	2.30
86.00	1st curtain	2.10
102.00	Mirror drive	3.95
102.01	Torsion spring	.10
111.00	Contact, compl. casting group	.60
130.00	Back	6.90
130.01	Cover	.15
130.02	Cover (small back)	.10
150.00	Braking mechanism	7.20
164.00	Flash contact	.10

159 009

4.07	Accessory clip	.10
4.17	Cover	.10

156 000

0.07	Bearing disc	.10
0.08	Setting lever	.10
0.20	Spring	.10

155 000

0.47	Lens plate	.95
0.87	Spring	.10
35.00	Segment	.50
38.00	Anchor wheel	.40
65.05	Curve for winding lever	.25
86.00	Film pressure plate	1.00

156 009

94.00	Ratchet group	.80

157 000

7.06	Limited angle of coverage	.10

158 000

0.91	Frame	.65
0.92	Mask sheet	.10

183 000

15.14	Stop disc	.10

195 000

34.02	Photo element	3.95

307 200

0.05	Saddle disc	.10

DKS 2208 Flash nipple .25

DKS 2218 Carrying eyelet .25

DKS 2217

1.00	Rewind button	1.65

WARDS X42C
126 Cartridge Load

To gain access to the shutter mechanism, remove the recessed black aluminum disk located between the lens barrel and the front cell. Remove the two screws at 9 o'clock and 3 o'clock. Then lift off the front housing.

To gain access to the shutter and release button linkage, unscrew the flash cube extractor knob (counterclockwise). Peel off the right and left aluminum plates at the base of the lens barrel. Then remove the four screws and lift off the plate with the lens barrel.

For top removal, remove the two screws from the top cover. Advance the film wind lever approximately halfway, and then lift off the top cover.

Anthony Tormino
North Brunswick,
New Jersey

PRACTICA NOVA 1b
Top Removal

This service note is meant to complement previous service notes on Practicas.

The flash contacts are located in the top of this model. If possible have the shutter uncocked, the speed dial on B and the ASA selector button counterclockwise as far as it will go. The meter is not cross-coupled and is not affected during disassembly. Remove the four screws from the top; two in front and two in back. Place screwdriver in the rewind crank slot and turn counterclockwise to remove. Caution: rewind spindle has a ball and spring detent and removal of the spindle will permit them to fall into the body cavity. As in other Practica models, a slotted nut requiring special tips should be used to remove this nut in a counterclockwise direction. A small washer may or may not be present. The two-part ASA-Din indicator may then be lifted from the shaft. The interior portion of this selector is keyed to the shaft and replaceable in only one position. The exterior portion of the dial has a locater pin in the bottom that must be properly fitted upon reassembly. Note placement of spring tension washer between interior and exterior of ASA dial.

The speed selector dial has a removable insert in the top. There is some tough glue, so go carefully to minimize damage. A black screw centered in a brass slotted nut is visible in the center of the speed dial cavity. Using a Spanner wrench, remove the brass nut only. You may wish to mark the bulb position prior to speed dial removal. The dial has a locater pin to ensure proper replacement.

The advance lever has a small insert plate — again the glue is tough and careful removal will minimize damage. Under the insert is a brass screw — remove in a counterclockwise direction. A keyed washer and regular washer may be lifted from the advance lever shaft. Use a Spanner wrench to loosen and remove the circular brass retaining nut. The knurled ring with the interior spring washer may then be lifted from the shaft. The advance lever will now lift off. Note the position of the two black spacers beneath the advance lever. The interior of the black film counter housing reveals a large E-clip. It is not necessary to remove this clip to remove the top. The film counter housing will now lift off with the top intact. The rewind button may be out of position so note its proper position.