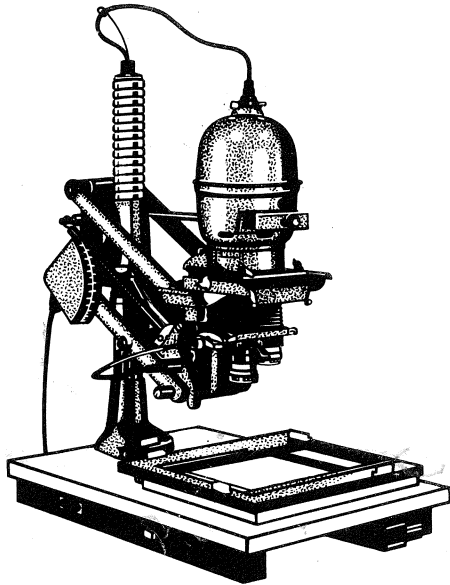




FOCOMAT II c

Ersatzteilliste

spare parts list

Reparaturanleitung

servicing instructions



ERNST LEITZ GMBH WETZLAR

Einführung

introduction

Ersatzteilliste

spare parts list

Grundplatte		base plate		1
Säule		column		2
Parallelogramm		parallelogram		3
Träger, Kurven, Klemmung		carrier, cams, clamping		4
Objektivführung, Wechselschlitten		objective guide, focusing stage		5
Objektive, Rotfilter		objectives, red filter		6
Tischplatte, Balgen		stage plate, bellows		7
Filmhalter	6 x 9 cm	negative carrier	6 x 9 cm	8
Filmhalter	17 876	negative carrier	17 876	9
Lampengehäuse-Unterteil		lamp housing lower part		10
Kondensor		condenser		11
Lampengehäuse-Oberteil		lamp housing upper part		12
Filter-Schieber	17 864	filter drawer	17 864	13
Vergrößerungsanzeiger	17 862	enlargement indicator	17 862	14
Zusatz-Einstellvorrichtung	17 861	supplementary setting gauge	17 861	15
Vergrößerungsrahmen	17 588	masking frame	17 594	16
Vergrößerungsrahmen	17 584	masking frame	17 584	17
Vergrößerungsrahmen	17 586	masking frame	17 586	18

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the 100 mm objective

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supplementary setting gauge 17 861

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This folder contains spare parts lists, repair instructions, and current circuit plans for the FOCOMAT IIc automatic focusing enlarger.

Concerning the numbering of the pages for instance 4. 1 or 4. 2 the number before the point is the continuous number of the page. The page with the number 1 behind the point contains the original condition of the instruments, assemblies or operations shown or described on this page. For changes or variations of the illustrations and informations on this page a supplementary sheet with the next higher successive number behind the point is made up. The index informs about the supplementary sheet issued so far and the latest edition of the individual page is mentioned in first place.

In the spare parts list a parts list belongs to each illustrated list. On the illustrated list the separate parts and subgroups are illustrated in the correct sequence of assembly. On the parts list the part numbers required for ordering, the description, the required number of items, and price groups are indicated. The numbers listed on the illustrated list agree with those on the parts list.

In the repair instructions assembly, adjustment, and repairs will be described and explained by means of illustrations. The tools listed therein can be obtained from us.

The number code used in the repair instructions with strokes are not code numbers.

This number code serves only for orientation in the search for the indicated part in the spare parts list.

In the number combination, the figure

before the stroke represents	/	the one after the stroke
the page		the number of the illustration

6. 2 / 4

In the above example this is the red filter which according to the spare parts list page 6. 2 Fig. 4, can be ordered under the code number 042-614. 018-000.

The components and subgroups should be cleaned with lead-free petrol if possible outside the housing. Enamel parts and those with coloured engraving must not be cleaned wet, but only dry with a piece of soft leather or a brush. Surfaces with wrinkled finish may be cleaned with an oily rag and rubbed dry after that.

Glass and rubber parts must not come into contact with petrol, oil or lubricants.

The parts to which lubricants are to be applied must be clean and dry.

The following lubricants are necessary and can be obtained from us only:

No. 311 symbol ■■■
 No. 340 symbol □□□
 No. 410 symbol ▲▲▲
 No. 602 symbol ⊙⊙⊙
 No. 702 symbol ■■■

Other lubricants cannot be used, since perfect function is ensured only with the lubricants approved by us.

It should be borne in mind that many lubricants do not agree with a number of plastic materials, which they may dissolve or make swell up. These lubricants should come into contact only with those surfaces listed in the lubricating chart. Storage of longer than one year should be avoided.

For the repair of the instruments listed in this folder the following adhesives are necessary:

U = UHU-hart

Parts treated with adhesives according to the spare parts list must be free from lubricants, residual adhesives must be removed with the appropriate thinners.

The areas where the lubricant and adhesive respectively are used, are indicated by symbols or letters. All other sliding surfaces not specially marked should be lubricated with lubricant 410.

With help of the number of the illustration on the picture page, the order number from the parts list, the description, the required number of items per instruments unit and the price group will be obtained. The DM price can be obtained from the price group list.

All the prices indicated in the spare parts list are net.

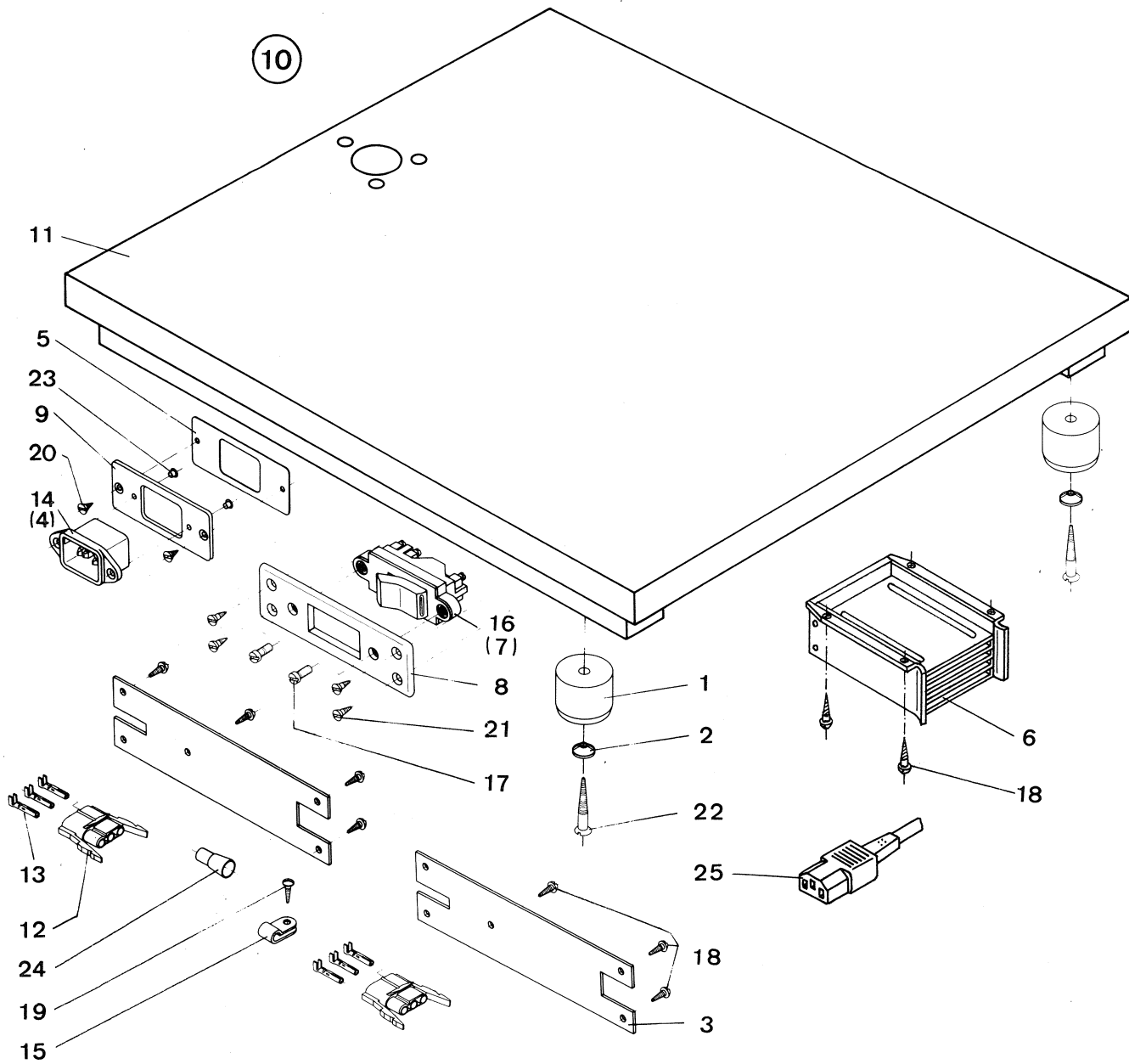
Order single spare parts only in the most urgent cases, and never order less than 10 screws, nuts, and washers. For the indication of quantities, one piece is to be inserted for 1 m in the case of bulk goods.

The surface finish of the standard parts is not indicated by the description. It is indicated in code in box 7 to 9 of the code number. Explanations can be obtained from the surface finish list. In case of color changes by instruments or sub assemblies we cannot guarantee for a matching surface finish of the spare parts supplied.

Do not order sales articles (see general catalogue) from the Service Department.

We are not obliged to supply the parts and subgroups mentioned in this list. We reserve the right to supply, if spare parts ordered are not in stock, components or assembly groups which funktionally replace or include the unit ordered.

Grundplatte	53,5 x 74 cm	base plate	21 x 29.1"	1.3
	54 x 67,5 cm		21.8 x 27"	1.2
	54 x 67,5 cm		21.8 x 27"	1.1
Säule	80 cm	column	32"	2.3
				2.2
				2.1
Parallelogramm		parallelogram		3.1
Träger, Kurven, Klemmung		carrier, cams, clamping		4.1
Objektivführung, Wechselschlitten		objective guide, focusing stage		5.1
Objektive, Rotfilter		objectives, red filter		6.3
				6.2
				6.1
Tischplatte, Balgen		stage plate, bellows		7.1
Filmhalter	6 x 9 cm	negative carrier	6 x 9 cm	8.1
Filmhalter	17 876	negative carrier	17 876	9.1
Lampengehäuse-Unterteil		lamp housing lower part		10.1
Kondensor		condenser		11.1
Lampengehäuse-Oberteil		lamp housing upper part		12.1
Filter-Schieber	17 864	filter drawer	17 864	13.1
Vergrößerungsanzeiger	17 862	enlargement indicator	17 862	14.1
Zusatz-Einstellvorrichtung	17 861	Supplementary setting gauge	17 861	15.1
Vergrößerungsrahmen	17 588	masking frame	17 594	16.1
Vergrößerungsrahmen	17 584	masking frame	17 584	17.1
Vergrößerungsrahmen	17 586	masking frame	17 586	18.1



TECHNICAL SERVICE

KUNDENDIENST

14.12. 1973

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	016-012.001-005	11	4	Gummipuffer	rubber buffer
2	042-484.001-008	4	4	Unterlegscheibe	washer
3	042-484.082-024	13	2	Abdeckplatte	cover plate
4	042-484.082-031	17	1	Gerätestecker, komplett bestehend aus Position 9, 14 und 23	plug, complete consisting of position 9, 14, and 23
5	042-484.082-050	10	1	Isolierplatte	insulating plate
6	042-614.001-178	24	1	Blendenaufbewahrungskasten, komplett	box for sliding diaphragm, complete
7	042-614.002-040	21	1	Umschalter, komplett bestehend aus Position 8, 16 und 17	switch-over, complete consisting of position 8, 16 and 17
8	042-614.002-042	12	1	Platte	plate
9	042-614.010-028	10	1	Zwischenplatte	intermediate plate
10	042-614.080-000	64	-	Grundplatte, komplett mit allen auf diesem Blatt aufgeführten Teilen, jedoch ohne Position 25	base plate, complete with all parts listed on this page without position 25
11	042-614.080-005	52	1	Grundplatte mit Gummipuffer, jedoch ohne Installationsteile	base plate with rubber buffer, without installation parts
12	302-014.003-002	7	2	Buchsengehäuse	bush housing
13	302-014.003-004	5	6	Buchse	bush
14	302-016.036-001	13	1	Gerätestecker	plug
15	302-021.038-003	4	6	Befestigungsschelle	cable holder
16	302-023.101-001	16	1	Umschalter	switch-over
17	700-775.239-000	6	2	Zylinderschraube	AM 3,5 x 10 DIN 84 cylindrical screw
18	701-441.213-000	6	11	Halbrundholzschraube 7 für Position 3 4 für Position 6	3 x 10 DIN 96 oval head wood screw 7 for position 3 4 for position 6
19	701-444.213-000	6	6	Halbrundholzschraube	3 x 15 DIN 96 oval head wood screw

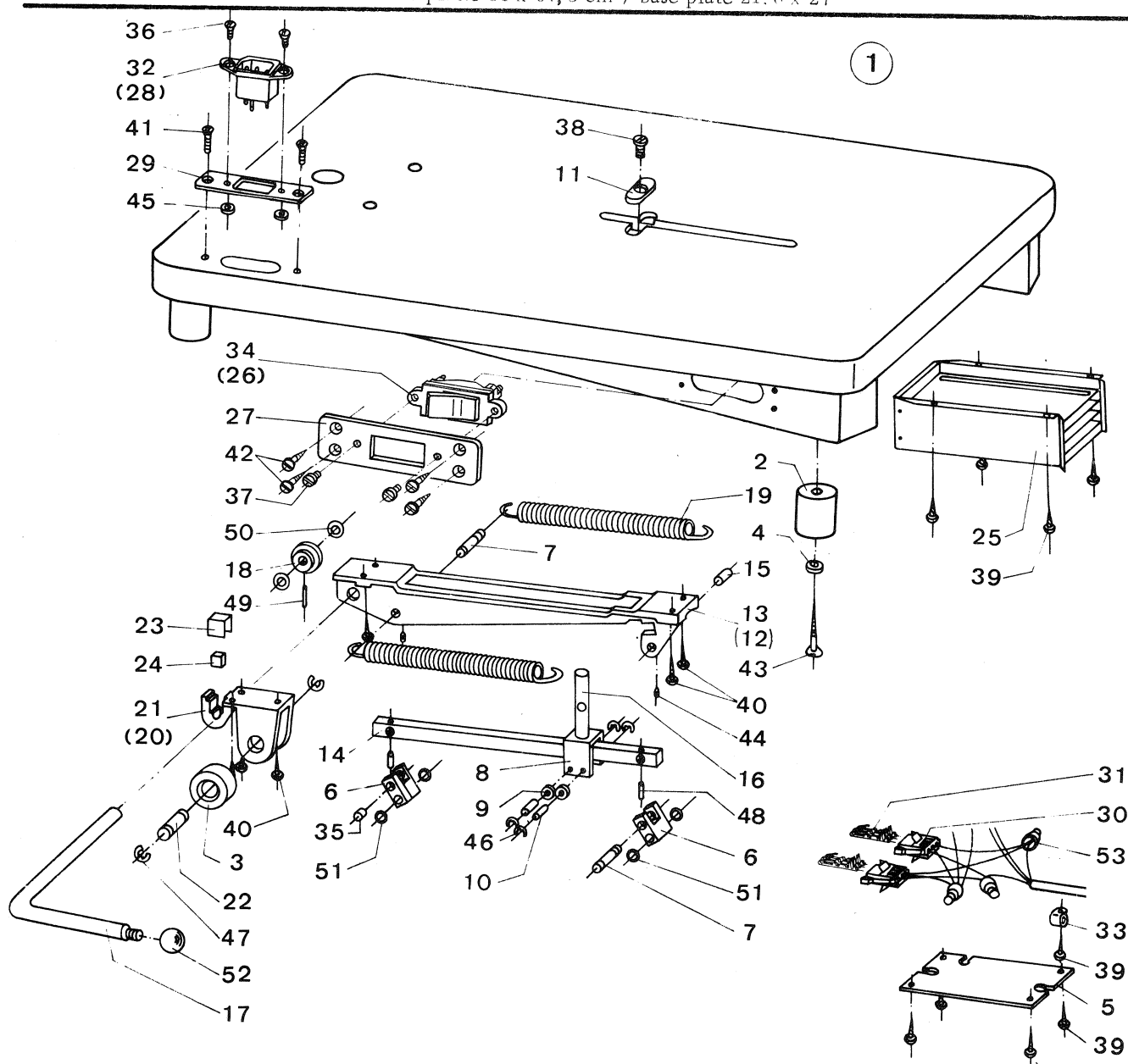
Zustand/state 3

Grundplatte 53,5 x 74 / base plate 21 x 29,1"

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
20	701-625.239-000	6	2	Senkholzschraube	3 x 7	DIN 97	countersunk head wood screw
21	701-626.239-000	6	4	Senkholzschraube	3 x 10	DIN 97	countersunk head wood screw
22	701-685.213-000	6	4	Senkholzschraube	4,5 x 45	DIN 97	countersunk head wood screw
23	705-485.220-000	1	2	Rohrniet 3 x 0,5 x 5	3 x 0,5 x 5	DIN 7340	tubular rivet
24	833-444.000-000	3	3	Parallelverbinder			parallel connector
25	37 656	-		Geräteanschlußleitung mit Schuko-stecker, siehe Gesamtkatalog			mains lead with schuko plug, see general catalogue

Zustand/state 2

Grundplatte 54 x 67,5 cm / base plate 21.8 x 27"



TECHNICAL SERVICE

KUNDENDIENST

14.12. 1973

Grundplatte 54 x 67,5 cm / base plate 21,8 x 27"

Zustand / state 2

TECHNICAL SERVICE

KUNDENDIENST

14.12. 1973

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	nicht mehr lieferbar no longer available		-	Grundplatte, komplett	base plate, complete
2	016-012. 001-005	11	4	Gummipuffer	rubber buffer
3	042-484. 001-007	8	1	Gummipuffer	rubber buffer
4	042-484. 001-008	4	4	Unterlegscheibe	washer
5	042-484. 043-068	12	1	Abdeckplatte	cover plate
6	042-611. 001-063	14	2	U-Lager	U-bearing
7	042-611. 001-064	11	2	Achse	shaft
8	042-611. 001-070	15	1	Rollenhalter	roll holder
9	042-611. 001-072	11	2	Rolle	roll
10	042-611. 001-073	11	2	Achse	shaft
11	042-611. 001-079	13	1	Schwalbenschwanzleiste	dove tail ledge
12	042-614. 001-058	40	1	Spannvorrichtung, komplett bestehend aus Position 6 bis 10, 13 bis 19, 35, 44, 46, 48 bis 51	stretching device, complete consisting of position 6 to 10, 13 to 19, 35, 44, 46, 48 to 51
13	042-614. 001-059	28	1	Lagerbock	bearing block
14	042-614. 001-060	18	1	Stange	bar
15	042-614. 001-064	9	1	Zylinderstift	cylindrical pin
16	042-614. 001-069	15	1	Klemmbolzen	clamping bolt
17	042-614. 001-073	17	1	Hebel	lever
18	042-614. 001-074	18	1	Exzenter	eccenter
19	042-614. 001-076	11	2	Zugfeder	tension spring
20	042-614. 001-084	22	1	Lagerbock, komplett bestehend aus Position 3, 21, 22 und 47	bearing block, complete consisting of position 3, 21, 22 and 47
21	042-614. 001-085	24	1	Lagerbock	bearing block

Zustand/state 2

Grundplatte 54 x 67,5 cm / base plate 21,8 x 27"

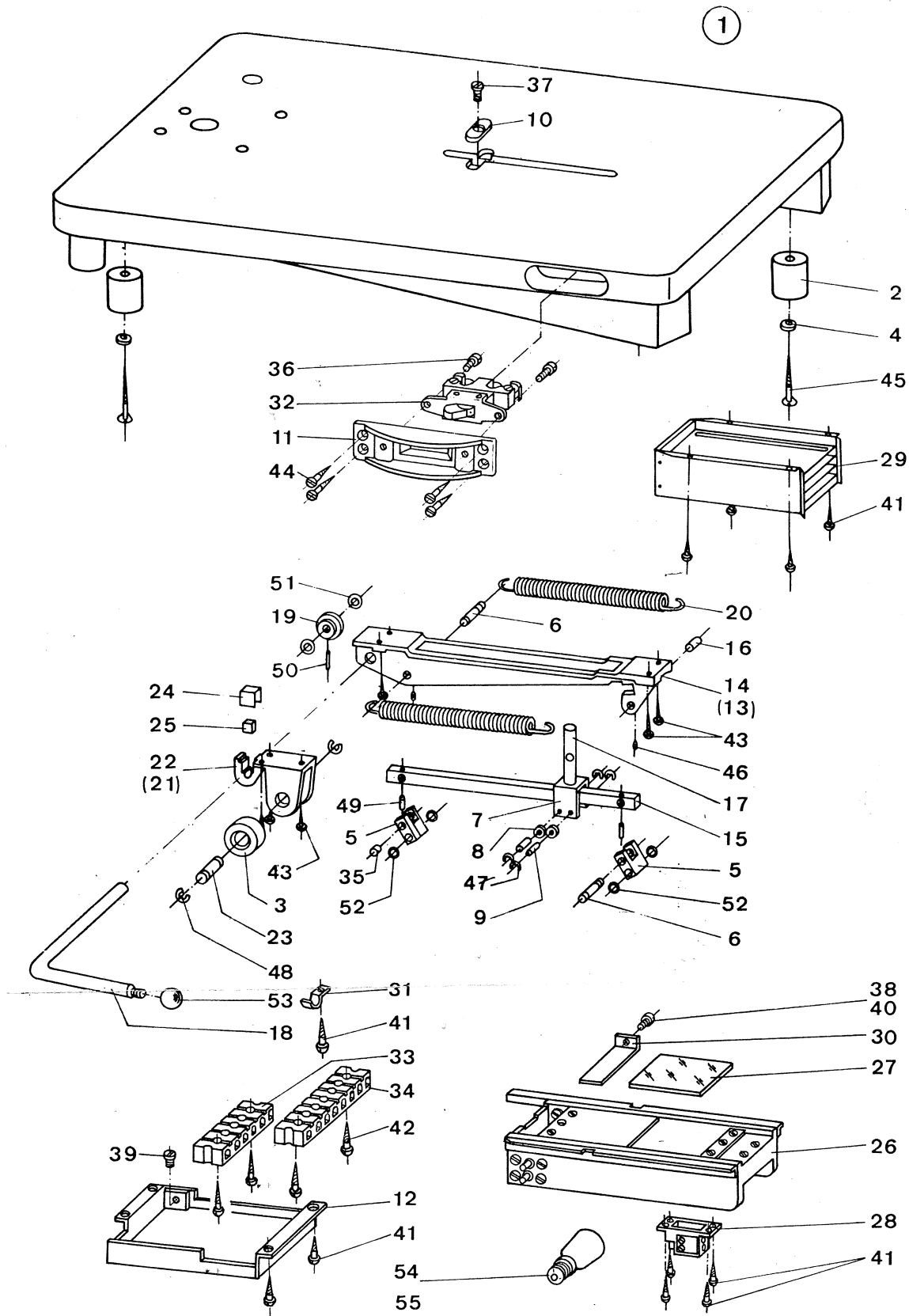
Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
22	042-614.001-086	12	1	Achse	shaft
23	042-614.001-092	10	1	Lagerblech	bearing plate
24	042-614.001-093	6	1	Gummiauflage	rubber shock absorber
25	042-614.001-178	24	1	Blendenaufbewahrungskasten, komplett	box for sliding diaphragm, complete
26	042-614.002-040	21	1	Umschalter, komplett bestehend aus Position 27, 34, 37	switch, complete consisting of position 27, 34, 37
27	042-614.002-042	12	1	Platte	plate
28	042-614.010-026	17	1	Gerätestecker, komplett bestehend aus Position 29, 32, 36 und 45	plug, complete consisting of position 29, 32, 36 and 45
29	042-614.010-028	10	1	Zwischenplatte	intermediate plate
30	302-014.001-001	9	2	AMP-Steckgehäuse	flat housing
31	302-014.001-003	5	6	AMP-Flachkontakt	flat contact
32	302-016.036-001	12	1	Gerätestecker	plug
33	302-021.038-003	4	5	Schelle	cable holder
34	302-023.101-001	16	1	Umschalter	switch
35	700-262.220-000	4	1	Zylinderstift	6 m 6 x 16 DIN 7 cylindrical pin
36	700-428.220-000	6	2	Senkschraube	AM 3 x 8 DIN 63 countersunk head screw
37	700-775.239-000	6	2	Zylinderschraube	M 3,5 x 10 DIN 84 cylindrical head screw
38	700-805.233-000	3	1	Zylinderschraube	AM 4 x 8 DIN 84 cylindrical head screw
39	701-442.220-000	6	13	Halbrundholzschraube 4 für Position 5 4 für Position 25 5 für Position 33	3 x 13 DIN 96 oval head wood screw 4 for position 5 4 for position 25 5 for position 33
40	701-472.220-000	6	7	Halbrundholzschraube 4 für Position 13 3 für Position 21	4 x 20 DIN 96 oval head wood screw 4 for position 13 3 for position 21

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
41	701-629.220-000	6	2	Senkholzschraube	3 x 15	DIN 97	countersunk wood head screw
42	701-629.233-000	6	4	Senkholzschraube	3 x 15	DIN 97	countersunk wood head screw
43	701-684.163-000	4	4	Senkholzschraube	4,5 x 40	DIN 97	countersunk wood head screw
44	702-680.183-000	4	2	Gewindestift	M 3 x 5	DIN 553	threaded pin
45	704-230.220-000	5	2	Sechskantmutter	M 3	DIN 934	hexagon nut
46	704-782.220-000	1	4	Sicherungsscheibe	2,3	DIN 6799	c-clip
47	704-787.220-000	1	2	Sicherungsscheibe	5	DIN 6799	c-clip
48	705-209.000-000	2	2	Spiralstift	N 2 x 8	LN 123 06	spiral pin
49	705-221.163-000	2	1	Spiralstift	N 2,5 x 18	LN 123 06	spiral pin
50	705-910.163-000	3	2	Scheibe	015-121.083-052		washer
51	706-045.163-000	2	4	Scheibe	015-121.062-271		washer
52	706-829.000-000	10	1	Kugelknopf	32 x 8	LN 125 19	ball knob
53	823-444.000-000	3	3	Parallelverbinder			parallel connector

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Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	nicht mehr lieferbar no longer available	-	-	Grundplatte, komplett	base plate, complete
2	016-012.001-005	11	4	Gummipuffer	rubber buffer
3	042-484.001-007	8	1	Gummipuffer	rubber buffer
4	042-484.001-008	4	4	Unterlegscheibe	washer
5	042-611.001-063	14	2	U-Lager	U-bearing
6	042-611.001-064	11	2	Achse	shaft
7	042-611.001-070	15	1	Rollenhalter	roll holder
8	042-611.001-072	11	2	Rolle	roll
9	042-611.001-073	11	2	Achse	shaft
10	042-611.001-079	13	1	Schwalbenschwanzleiste	dove tail ledge
11	042-614.001-030	12	1	Schalterschutz	switch protection
12	042-614.001-048	17	1	Berührungsschutz einschließlich Position 39	protection, position 39 inclusive
13	042-614.001-058	40	1	Spannvorrichtung, komplett bestehend aus Position 5 bis 9, 14 bis 20, 35, 46, 47, 49 bis 52	stretching device, complete consisting of position 5 to 9 14 to 20, 35, 46, 47, 49 to 52
14	042-614.001-059	28	1	Lagerbock	bearing block
15	042-614.001-060	18	1	Stange	bar
16	042-614.001-064	9	1	Zylinderstift	cylindrical pin
17	042-614.001-069	15	1	Klemmbolzen	clamping bolt
18	042-614.001-073	17	1	Hebel	lever
19	042-614.001-074	18	1	Exzenter	eccenter
20	042-614.001-076	11	2	Zugfeder	tension spring
21	042-614.001-084	22	1	Lagerbock, komplett bestehend aus Position 3, 22, 23, 48	bearing block, complete consisting of position 3, 22, 23, 48

TECHNICAL SERVICE

KUNDENDIENST

14.12.1973

Zustand/state 1

Grundplatte 54 x 67,5 cm / base plate 21,8 x 27"

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung		Description
22	042-614.001-085	24	1	Lagerbock		bearing block
23	042-614.001-086	12	1	Achse		shaft
24	042-614.001-092	10	1	Lagerblech		bearing plate
25	042-614.001-093	6	1	Gummiauflage		rubber shock absorber
26	042-614.001-098	39	1	Schublade mit Beleuchtungseinrichtung, komplett		drawer with lighting fixture, complete
27	042-614.001-138	19	1	Filter, komplett		filter, complete
28	042-614.001-157	20	1	Kontakthalter		contact holder
29	042-614.001-178	24	1	Blenden-Aufbewahrungskasten, komplett		box for sliding diaphragm, complete
30	042-614.001-192	15	1	Schieber		slide plate
31	302-021.028-013	3	13	Befestigungsschelle	5, 5 DIN 49 045	cable holder
32	302-023.000-018	16	1	Kippschalter		switch
33	302-034.003-006	11	1	Klemmleiste 6-polig		clamping ledge 6 contacts
34	302-034.003-008	11	1	Klemmleiste 8-polig		clamping ledge 8 contacts
35	700-262.220-000	4	1	Zylinderstift	6 m 6 x 16 DIN 7	cylindrical pin
36	700-763.163-000	4	2	Zylinderschraube	M 3,5 x 5 DIN 84	cylindrical head screw
37	700-805.233-000	3	1	Zylinderschraube	AM 4 x 8 DIN 84	cylindrical head screw
38	701-000.233-000 *	5	1	Zylinderschraube	M 2,6 x 4 DIN 85	cylindrical head screw
39	701-054.000-000	5	1	Zylinderschraube	M 3,5 x 6 DIN 85	cylindrical head screw
40	701-441.233-000 *	6	1	Halbrundholzschraube	3 x 10 DIN 96	oval head wood screw
41	701-442.220-000	6	25	Halbrundholzschraube	3 x 13 DIN 96	oval head wood screw
				4 für Position 12		4 for position 12
				4 für Position 28		4 for position 28
				4 für Position 29		4 for position 29
				13 für Position 31		13 for position 31

TECHNICAL SERVICE

KUNDENDIENST

14.12.1973

TECHNICAL SERVICE

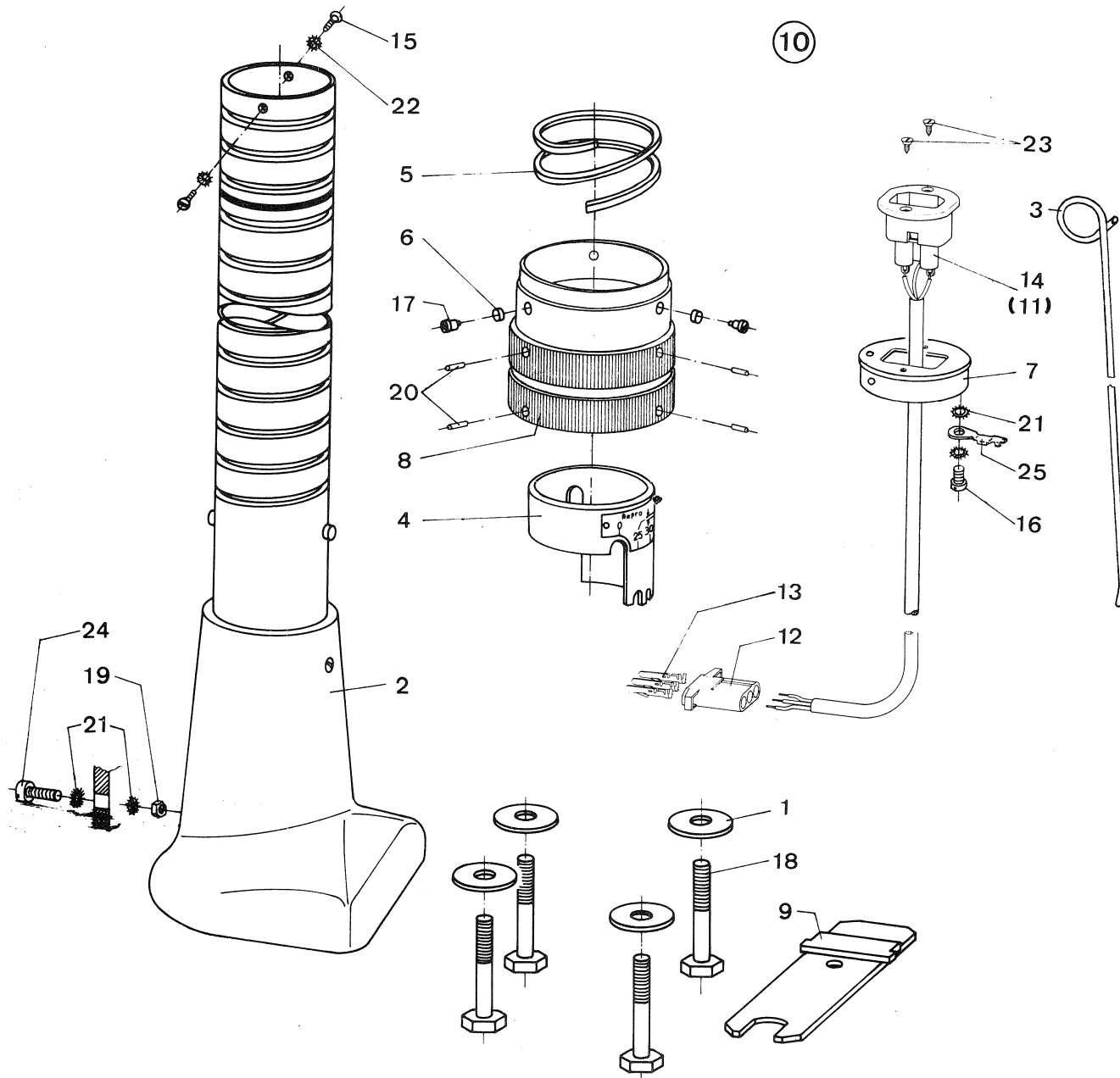
KUNDENDIENST

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Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
42	701-447.220-000	6	4	Halbrundholzschraube	3 x 20	DIN 96	oval head wood screw
43	701-472.220-000	6	7	Halbrundholzschraube 4 für Position 14 3 für Position 22	4 x 20	DIN 96	oval head wood screw 4 for position 14 3 for position 22
44	701-629.220-000	6	4	Senkholzschraube	3 x 15	DIN 97	countersunk wood screw
45	701-684.163-000	4	4	Senkholzschraube	4,5 x 40	DIN 97	countersunk wood screw
46	702-680.183-000	4	2	Gewindestift	M 3 x 5	DIN 553	threaded pin
47	704-782.220-000	1	4	Sicherungsscheibe	2,3	DIN 6799	c-clip
48	704-787.220-000	1	2	Sicherungsscheibe	5	DIN 6799	c-clip
49	705-209.000-000	2	2	Spiralstift	N 2 x 8	LN 123 06	spiral pin
50	705-221.163-000	2	1	Spiralstift	N 2,5 x 18	LN 123 06	spiral pin
51	705-910.163-000	3	2	Scheibe	015-121.083-052		washer
52	706-045.163-000	2	4	Scheibe	015-121.062-271		washer
53	706-829.000-000	10	1	Kugelknopf	32 x 8	LN 125 19	ball knob
54			1	Glühlampe	125 V 15 W E14	DIN 49 812	lamp
55			1	Glühlampe	220 V 15 W E14	DIN 49 812	lamp

* bei Bedarf

* when needed



TECHNICAL SERVICE

KUNDENDIENST

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Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	042-484.062-024	9	4	Unterlegscheibe	washer
2	042-614.004-005	58	1	Flansch mit Rohr	flange with tube
3	042-614.004-025	9	1	Kabelhalter	cable holder
4	042-614.004-029	21	1	Höhenausgleichsring	height-compensation ring
5	042-614.004-040	19	1	Führungsdraht	guide wire
6	042-614.004-048 *	9	3	Distanzrohr	distance tube
7	042-614.004-064	18	1	Zwischenstück	intermediate piece
8	042-614.004-075	37	1	Stellmutter, komplett bestehend aus Position 5, 6, 17 und 20	nut, complete consisting of position 5, 6, 17 and 20
9	042-614.014-005	10	1	Schlüssel	key
10	042-614.065-000	-	-	Säule 80 cm, komplett mit allen auf diesem Blatt aufge- führten Teilen, jedoch ohne Po- sition 9	column 32", complete with all parts listed on this page, without position 9
11	042-614.065-008	24	1	Steckdose mit Leitung, komplett bestehend aus Position 7, 12, 13, 14, 16, 21, 23 und 24	female plug with cable, complete consisting of position 7, 12, 13, 14, 16, 21, 23 and 24
12	302-014.003-001	7	1	AMP-Stiftgehäuse	AMP-pin housing
13	302-014.003-003	5	3	AMP-Stiftkontakt	AMP-pin contact
14	302-016.039-020	15	1	Gerätesteckdose	female plug
15	700-473.000-000	3	2	Senkschraube	M 4 x 8 DIN 63 countersunk head screw
16	700-806.000-000	3	1	Zylinderschraube	M 4 x 6 DIN 84 cylindrical head screw
17	703-655.239-000	6	3	Linsenschraube	M 4 x 4 x 2 DIN 922 oval head screw
18	704-134.220-000	7	4	Sechskantschraube	M 8 x 50 DIN 931 hexagon screw
19	704-237.000-000	3	1	Sechskantmutter	M 4 DIN 934 hexagon nut

Zustand/state 3

Säule 80 cm / 32" column

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
20	704-415.163-000	2	2	Zylinderkerbstift	2,5 x 12	DIN 1473	cylindrical pin
21	704-745.210-000	1	4	Zahnscheibe	A 4,3	DIN 6797	ratchet washer
22	704-747.210-000	1	2	Zahnscheibe	V 4,3	DIN 6797	ratchet washer
23	707-996.220-000	6	2	Senkschraube	M 3 x 6	DIN 965	countersunk head screw
24	708-269.000-000	3	1	Zylinderschraube	M 4 x 25	DIN 84	cylindrical head screw
25	833-124.000-000	3	1	Kabelschuh	A 4 x 1,5	DIN 46225	cable shoe

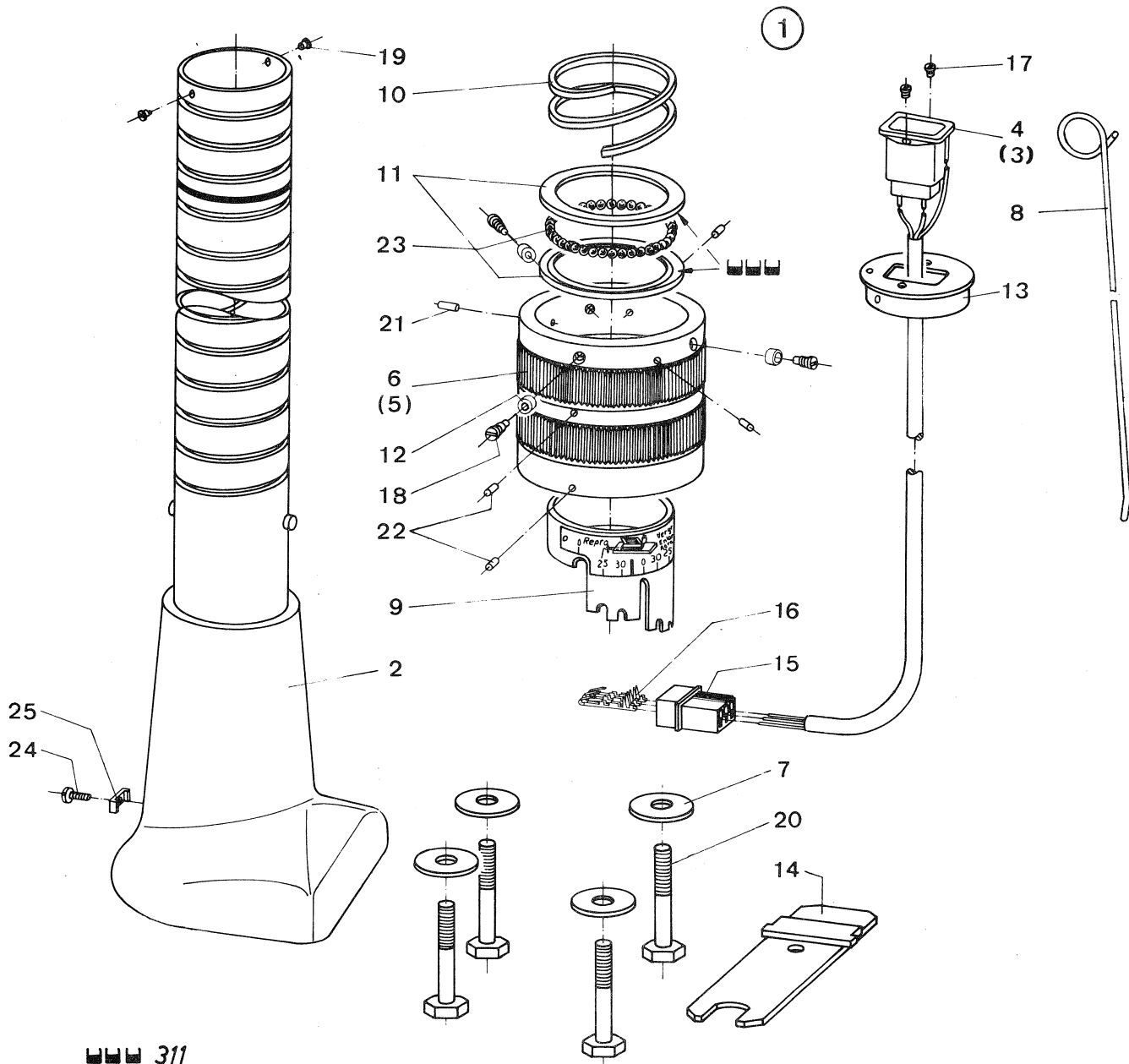
* werden nur für den Transport
benötigt, sind bei der Geräte-
montage zu entfernen.

* to be used for transportation
only, remove when instrument
is assembled.

TECHNICAL SERVICE

KUNDENDIENST

14.12.1973



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Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	nicht mehr lieferbar * ₁ - no longer available	-	-	Säule 80 cm, komplett	column 32", complete
2	nicht mehr lieferbar * ₂ - no longer available	1	1	Flansch mit Rohr	flange with tube
3	nicht mehr lieferbar * ₃ - no longer available	1	1	Steckdose mit Leitung, komplett	female plug with cable, complete
4	nicht mehr lieferbar * ₄ - no longer available	1	1	Gerätesteckdose	female plug
5	nicht mehr lieferbar * ₅ - no longer available	1	1	Mutter, komplett	nut, complete
6	nicht mehr lieferbar * ₅ - no longer available	1	1	Mutter	nut
7	042-484. 062-024	9	4	Unterlegscheibe	washer
8	042-614. 004-025	9	1	Kabelhalter	cable holder
9	042-614. 004-029	21	1	Höhenausgleichsring	height-compensation ring
10	042-614. 004-040	19	1	Führungsdraht	guide wire
11	042-614. 004-043	19	2	Kugelhahn	guide for balls
12	042-614. 004-048 * ₆	9	3	Distanzrohr	distance tube
13	042-614. 004-064	18	1	Zwischenstück	intermediate piece
14	042-614. 014-005	10	1	Schlüssel	key
15	302-014. 001-002	8	1	AMP-Steckgehäuse	AMP-flat housing
16	302-014. 001-003	5	3	AMP-Flachkontakt	AMP-flat contact
17	701-001. 213-000	5	2	Linsenzylinderschraube	AM 2, 6 x 4 DIN 85 oval head screw
18	703-868. 213-000	6	3	Senkschraube	M 4 x 6 x 4 DIN 925 countersunk head screw
19	704-040. 213-000	5	2	Zapfenschraube	M 2, 6 x 3 x 2, 5 DIN 927 screw with pin

TECHNICAL SERVICE

KUNDENDIENST

14.12. 1973

Zustand/state 2

Säule 80 cm / 32" column

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
20	704-134.220-000	7	4	Sechskantschraube	M 8 x 50	DIN 931	hexagon screw
21	704-359.220-000	1	3	Paßkerbstift	2 x 8	DIN 1472	cylindrical grooved pin
22	704-415.220-000	1	2	Zylinderkerbstift	2,5 x 12	DIN 1473	cylindrical grooved pin
23	704-629.000-000	1	35	Kugel	6 mm III	DIN 5401	ball
24	705-990.220-000	6	1	Linsenschraube	M 3 x 6	DIN 85	oval head screw
25	823-040.220-000	4	1	Klemmbügel			clamping bow

*₁ Ersatz siehe Seite 2.3/10
und 12.1/18

*₁ spare part see page 2.3/10
and 12.1/18

*₂ Ersatz siehe Seite 2.3/2

*₂ spare part see page 2.3/2

*₃ Ersatz siehe Seite 2.3/11

*₃ spare part see page 2.3/11

*₄ Ersatz siehe Seite 2.3/14

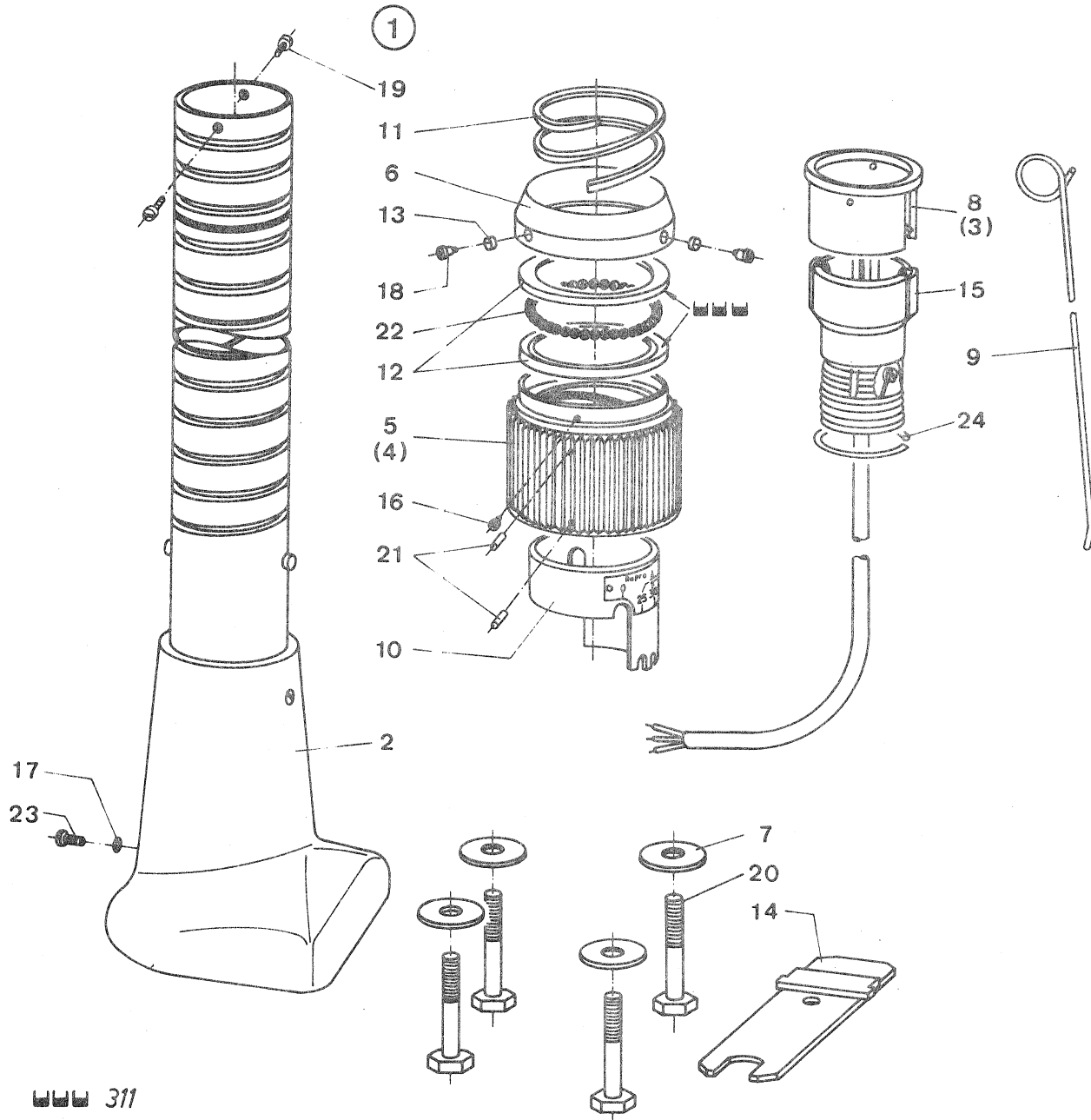
*₄ spare part see page 2.3/14

*₅ Ersatz siehe Seite 2.3/8

*₅ spare part see page 2.3/8

*₆ werden nur für den Transport
benötigt, sind bei der Geräte-
montage zu entfernen.

*₆ to be used for transportation
only, remove when instrument
is assembled.



Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
TECHNICAL SERVICE	1 nicht mehr lieferbar * ₁ - no longer available	-	-	Säule 80 cm, komplett	column 32", complete
	2 nicht mehr lieferbar * ₂ - no longer available	1	1	Flansch mit Rohr	flange with tube
	3 nicht mehr lieferbar * ₃ - no longer available	1	1	Kupplung, komplett	plug socket, complete
	4 nicht mehr lieferbar * ₄ - no longer available	1	1	Mutter, komplett	nut, complete
	5 nicht mehr lieferbar * ₄ - no longer available	1	1	Mutter	nut
	6 nicht mehr lieferbar * ₄ - no longer available	1	1	Sicherungsring	safety ring
KUNDENDIENST	7 042-484. 062-024	9	4	Scheibe	washer
	8 042-614. 004-017	18	1	Zwischenstück	intermediate piece
	9 042-614. 004-025	9	1	Kabelhalter	cable holder
	10 042-614. 004-029	21	1	Höhenausgleichsring	height-compensation ring
	11 042-614. 004-040	19	1	Führungsdraht	guide wire
	12 042-614. 004-043	19	2	Kugelhahn	guide for balls
	13 042-614. 004-048 * ₅	9	3	Distanzrohr	distance tube
	14 042-614. 014-005	10	1	Schlüssel	key
	15 302-016. 004-003	16	1	Schuko-Kupplung	schuko plug socket
	16 700-968. 233-000	4	1	Linsenschraube	M 2 x 3 DIN 85 oval head screw
	17 701-804. 000-0001	1	1	Scheibe	3, 7 DIN 125 washer
	18 703-655. 233-000	6	3	Linsenschraube	M 4 x 4 x 2 DIN 922 oval head screw
	19 704-040. 213-000	5	2	Zapfenschraube	M 2, 6 x 3 x 2, 5 DIN 927 screw with pin

TECHNICAL SERVICE

KUNDENDIENST

14. 12. 1973

Zustand/state 1

Säule 80 cm / 32" column

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung		Description
20	704-134.220-000	7	4	Sechskantschraube	M 8 x 50 DIN 931	hexagon head screw
21	704-366.163-000	2	2	Zylinderkerbstift	2,5 x 12 DIN 1472	grooved pin
22	704-629.000-000	1	35	Kugel	6 mm III DIN 5401	ball
23	705-990.220-000	6	1	Linsenschraube	M 3 x 6 DIN 85	oval head screw
24	706-779.000-000	7	1	Sprengring	015-013.010-005	wire ring

*₁ Ersatz siehe Seite 2.3/10
und 12.1/18

*₂ Ersatz siehe Seite 2.3/2

*₃ Ersatz siehe Seite 2.3/11
und 12.1/18

*₄ Ersatz siehe Seite 2.3/8

*₅ werden nur für den Transport
benötigt, sind bei der Geräte-
montage zu entfernen

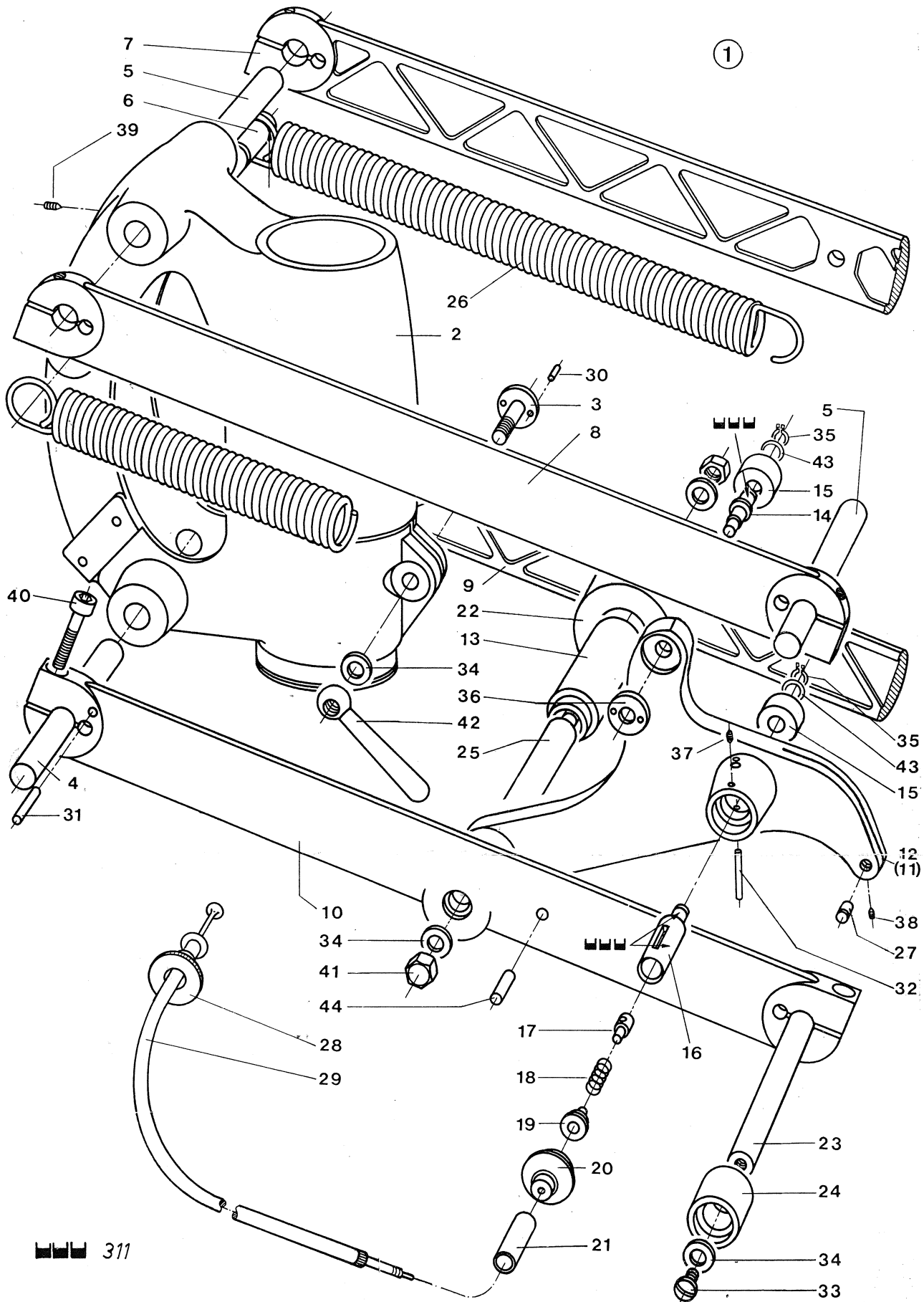
*₁ spare part see page 2.3/10
and 12.1/18

*₂ spare part see page 2.3/2

*₃ spare part see page 2.3/11
and 12.1/18

*₄ spare part see page 2.3/8

*₅ to be used for transportation
only, remove when instrument
is assembled



TECHNICAL SERVICE

KUNDENDIENST

14.12.1973

 Bitte ausschneiden
 Bitte ausscheiden

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	042-614.005-000	-	-	Parallelogramm, komplett mit allen auf Seite 3.1, 4.1, 5.1, 6.2 und 7.1 aufgeführten Teilen	parallelogram, complete with all parts listed on page 3.1, 4.1, 5.1, 6.2 and 7.1
2	042-614.005-005	44	1	Säulenklemmstück	column clamping piece
3	042-614.005-008	17	1	Klemmschraube	clamping screw
4	042-614.005-012	16	1	Achse	shaft
5	042-614.005-013	14	2	Achse	shaft
6	042-614.005-014	16	1	Achse	shaft
7	042-614.005-017	27	1	Hebel, rechter, oben	lever, right, upper
8	042-614.005-018	27	1	Hebel, linker, oben	lever, left, upper
9	042-614.005-019	27	1	Hebel, rechter, unten	lever, right, lower
10	042-614.005-020	27	1	Hebel, linker, unten	lever, left, lower
11	042-614.005-030	41	1	Kurvenhebel, komplett bestehend aus Position 12 bis 22, 31, 34 bis 36, 42	cam lever, complete consisting of position 12 to 22, 31, 34 to 36, 42
12	042-614.005-031	33	1	Kurvenhebel	cam lever
13	042-614.005-034	21	1	Abstandsrohr	distance tube
14	042-614.005-035	16	1	Rollenachse	roll shaft
15	042-614.005-384	18	1	Kurvenrolle 18,4 mm	cam roller
	042-614.005-386	18	1	Kurvenrolle 18,6 mm	cam roller
	042-614.005-388	18	1	Kurvenrolle 18,8 mm	cam roller
	042-614.005-390	18	1	Kurvenrolle 19,0 mm	cam roller
	042-614.005-392	18	1	Kurvenrolle 19,2 mm	cam roller
	042-614.005-394	18	1	Kurvenrolle 19,4 mm	cam roller
	042-614.005-396	18	1	Kurvenrolle 19,6 mm	cam roller
	042-614.005-398	18	1	Kurvenrolle 19,8 mm	cam roller

TECHNICAL SERVICE

KUNDENDIENST

14.12.1973

Zustand/state P

Parallelogramm / parallelogram

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
16	042-614.005-041	19	1	Rollenachse	roll shaft
17	042-614.005-045	13	1	Anschlagbolzen	stop bolt
18	042-614.005-047	9	1	Druckfeder	pressure spring
19	042-614.005-048	14	1	Gewindenippel	threaded nipple
20	042-614.005-049	18	1	Abschlußstück	stop piece
21	042-614.005-050	16	1	Führungsrohr	guide tube
22	042-614.005-055	13	1	Puffer	buffer
23	042-614.005-141	15	1	Achse	shaft
24	042-614.005-142	14	1	Griff	handle
25	042-614.005-145	17	1	Achse	shaft
26	042-614.005-211	17	2	Zugfeder	tension spring
27	042-614.005-239	10	1	Zylinderstift	cylindrical pin
28	042-614.005-324	17	1	Klemmnippel	clamping nipple
29	042-614.005-328	18	1	Drahtauslöser	wire release
30	700-084.213-000	2	1	Zylinderstift	2 m 6 x 6 DIN 7 cylindrical pin
31	700-136.213-000	3	1	Zylinderstift	3 m 6 x 20 DIN 7 cylindrical pin
32	700-137.163-000	3	1	Zylinderstift	3 m 6 x 24 DIN 7 cylindrical pin
33	701-130.213-000	7	1	Linsenzylinderschraube	AM 6 x 12 DIN 85 oval head screw
34	701-815.213-000	1	4	Scheibe	8,4 DIN 125 washer
				1 für Position 3	1 for position 3
				1 für Position 23	1 for position 23
				2 für Position 25	2 for position 25
35	702-413.000-000	2	2	Sicherungsring	7 x 0,8 DIN 471 safety ring
				1 für Position 14	1 for position 14
				1 für Position 16	1 for position 16

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
36	702-488.213-000	10	1	Zweilochmutter	M 6	DIN 547	double hole nut
37	702-655.183-000	3	1	Gewindestift	M 2,6 x 4	DIN 553	threaded pin
38	702-667.163-000	3	1	Gewindestift	M 2,6 x 5	DIN 553	threaded pin
39	702-709.183-000	5	1	Gewindestift	M 5 x 8	DIN 553	threaded pin
40	703-160.183-000	5	8	Zylinderschraube	M 6 x 30	DIN 912	cylindrical head screw
41	703-407.213-000	10	2	Hutmutter	Ri M 8	DIN 917	cap nut
42	705-135.213-000	18	1	Kugelgriff	D 10 x M 8	LN 125 20	ball handle
43	706-265.163-000	3	2	Scheibe 1 für Position 14 1 für Position 16	015-121.073-112		washer 1 for position 14 1 for position 16
44	706-366.213-000	4	1	Paßkerbstift	5 x 14	DIN 1472	slotted pin

TECHNICAL SERVICE

KUNDENDIENST

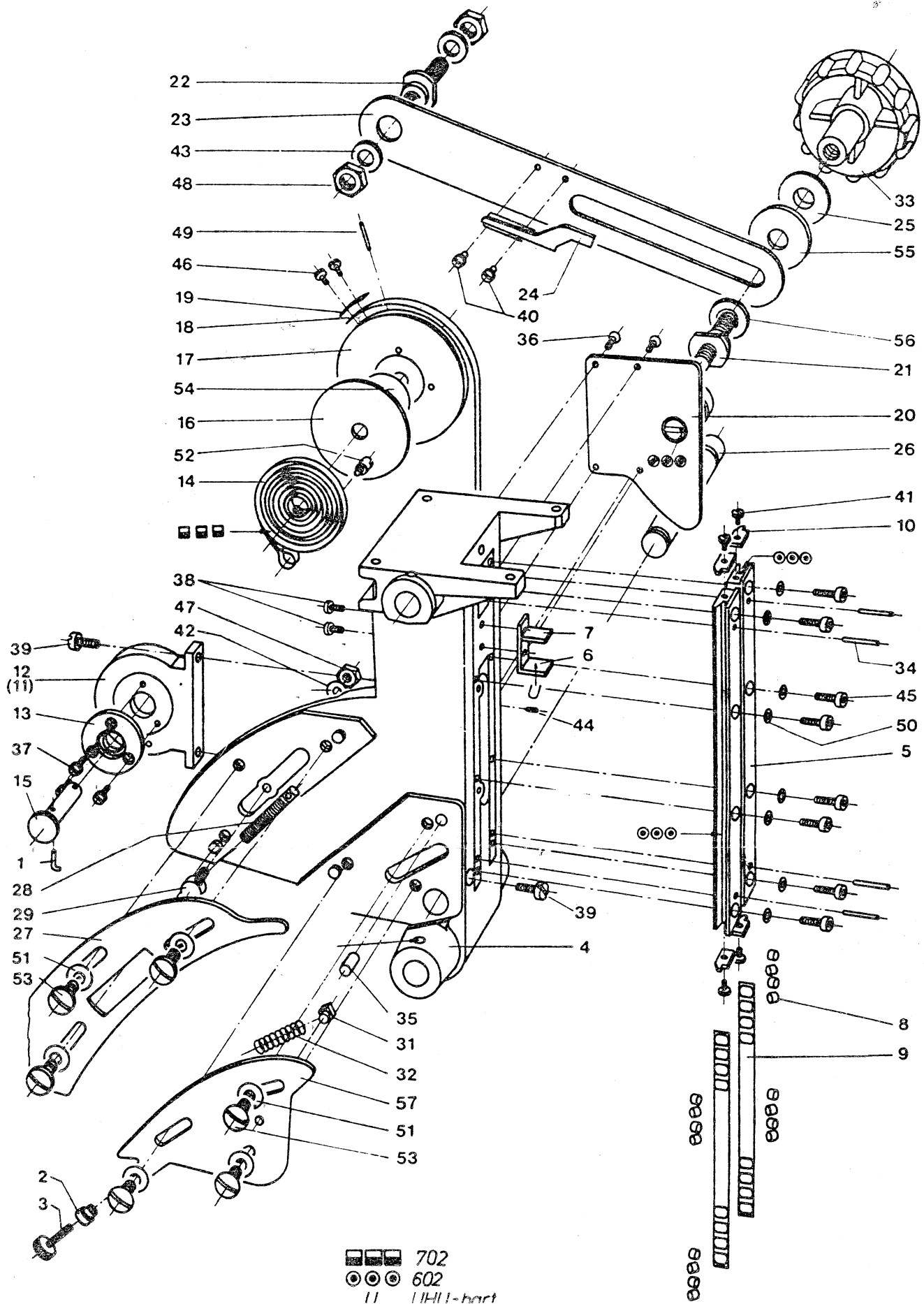
14.12. 1973

* bei Bedarf

* when needed

Zustand/state 1

Träger, Kurven, Klemmung / carrier, canvas, clamping



TECHNICAL SERVICE

KUNDENDIENST

14.12.1973

Träger, Kurven, Klemmung / carrier, cams, clamping

Zustand / state 1

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	038-067.000-011	15	1	Mitnehmerhaken	catch
2	042-252.016-366	15	1	Gewindebuchse	bushing
3	042-252.016-368	13	1	Rändelschraube	knurled screw
4	042-614.005-069	43	1	Träger, komplett	carrier, complete
5	042-614.005-074	24	2	Rollenbahn	roller train
6	042-614.005-079	12	1	Anschlagwinkel	stop bracket
7	042-614.005-080	4	1	Plattengummi	small gum plate
8	042-614.005-119	4	16	Zylinderrolle	cylindrical roll
9	042-614.005-120	9	2	Rollenkäfig	roller cage
10	042-614.005-121	6	4	Anschlag	stop
11	042-614.005-153	30	1	Federgehäuse, komplett bestehend aus Position 1, 12 bis 17, 37, 49, 52, 54	spring housing, complete consisting of position 1, 12 to 17, 37, 49, 52, 54
12	042-614.005-154	20	1	Federgehäuse	spring housing
13	042-614.005-155	16	1	Lagerbuchse	bearing bush
14	042-614.005-158	13	1	Uhrfeder	flat coil spring
15	042-614.005-159	16	1	Achse für Uhrfeder	shaft for flat coil spring
16	042-614.005-161	15	1	Deckel für Federgehäuse	cover for spring housing
17	042-614.005-162	20	1	Laufrolle	roller
18	042-614.005-168	17	1	Stahlband	steel band
19	042-614.005-169	10	1	Druckplatte	pressure plate
20	042-614.005-178 *	24	1	Vergrößerungsskala	enlarging scale
21	042-614.005-192	17	1	Bolzen	bolt
22	042-614.005-193	17	1	Bolzen für Klemmplatte	bolt for clamping plate

TECHNICAL SERVICE

KUNDENDIENST

4.12. 1973

Zustand/state 1

Träger, Kurven, Klemmung / carrier, cams, clamping

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
23	042-614.005-195	19	1	Klemmplatte			clamping plate
24	042-614.005-196	12	1	Zeiger			pointer
25	042-614.005-201	12	1	Scheibe			disc
26	042-614.005-209	15	1	Achse			shaft
27	042-614.005-214	23	1	Kurve für 100mm-Objektiv			cam for 100mm-objective
28	042-614.005-216	13	1	Gewindebolzen			screw bolt
29	042-614.005-217	12	1	Justierschraube			adjusting screw
31	042-614.005-227	11	1	Anschlagbolzen			stop bolt
32	042-614.005-231	8	1	Druckfeder			pressure spring
33	302-031.033-000	18	1	Halbkugelknopf			hemispherical knob
34	700-132.163-000	3	4	Zylinderstift	3 m 6 x 14	DIN 7	cylindrical pin
35	700-257.213-000	4	1	Zylinderstift	6 m 6 x 12	DIN 7	cylindrical pin
36	700-447.233-000	6	4	Senkschraube	AM 3,5 x 8	DIN 63	countersunk head screw
37	700-663.233-000	5	3	Zylinderschraube	AM 2,6 x 4	DIN 84	cylindrical head screw
38	700-717.163-000	4	2	Zylinderschraube	AM 3 x 8	DIN 84	cylindrical head screw
39	700-811.233-000	6	3	Zylinderschraube 2 für Position 12 1 für Position 26	AM 4 x 10	DIN 84	cylindrical head screw 2 for position 12 1 for position 26
40	701-001.213-000	3	2	Zylinderschraube	AM 2,6 x 4	DIN 85	cylindrical head screw
41	701-005.213-000	3	4	Zylinderschraube	AM 2,6 x 5	DIN 85	cylindrical head screw
42	701-815.213-000	1	1	Scheibe	5,3	DIN 125	washer
43	701-815.213-000	1	2	Scheibe	8,4	DIN 125	washer
44	702-700.163-000	4	1	Gewindestift	M 4 x 8	DIN 553	threaded pin
45	703-123.213-000	4	8	Zylinderschraube	M 4 x 10	DIN 912	cylindrical head screw

Träger, Kurven, Klemmung / carrier, cams, clamping

Zustand / state 1

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
46	703-466.233-000	5	2	Linsenschraube	M 2,6 x 4	DIN 920	oval head screw
47	704-238.213-000	5	1	Sechskantmutter	M 5	DIN 934	hexagon nut
48	704-246.213-000	5	2	Sechskantmutter	M 8	DIN 934	hexagon nut
49	705-211.000-000	2	1	Spannstift	2 x 12	DIN 7343	clamp bolt
50	705-672.163-000	2	8	Scheibe	015-121.042-261		washer
51	706-144.163-000	3	6	Scheibe	015-121.052-281		washer
52	706-358.163-000	9	1	Zapfenschraube	015-010.359-005		screw with pin
53	706-359.213-000	11	6	Linsenschraube	015-010.052-007		oval head screw
54	706-361.163-000	2	1	Scheibe	015-012.007-016		washer
55	706-362.000-000	2	1	Scheibe	015-012.010-008		washer
56	707-153.220-000	3	1	Scheibe	015-121.103-132		washer
57			1	Kurve für 60mm-Objektiv			cam for 60mm-objective
	042-614.005-360 ** 22			Brennweiten-Gruppe 0			group of focal distance 0
	042-614.005-365 ** 22			" " " 1		" " " "	1
	042-614.005-370 ** 22			" " " 2		" " " "	2
	042-614.005-375 ** 22			" " " 3		" " " "	3
	042-614.005-379 ** 22			" " " 4		" " " "	4

 * für FOCOTAR 1:4, 5/95 mm
 nicht mehr lieferbar

** bei Bedarf

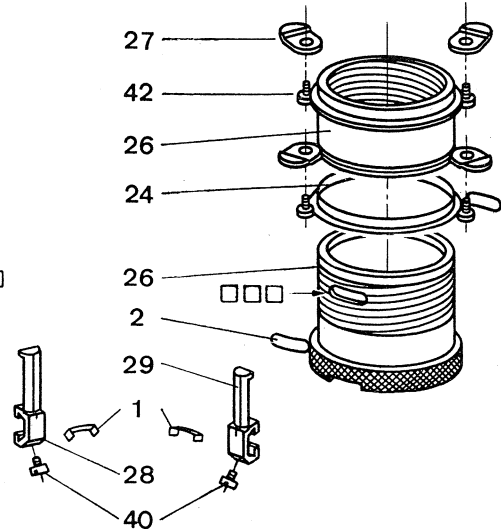
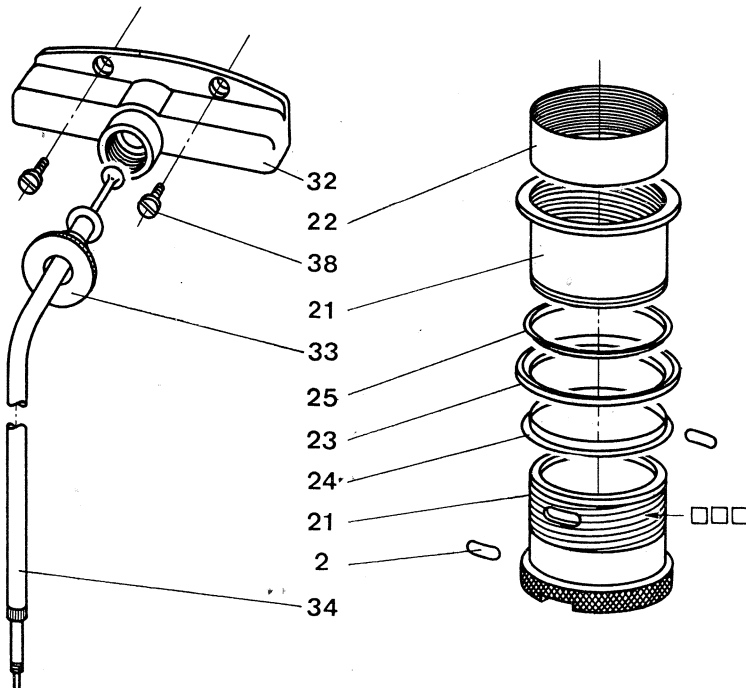
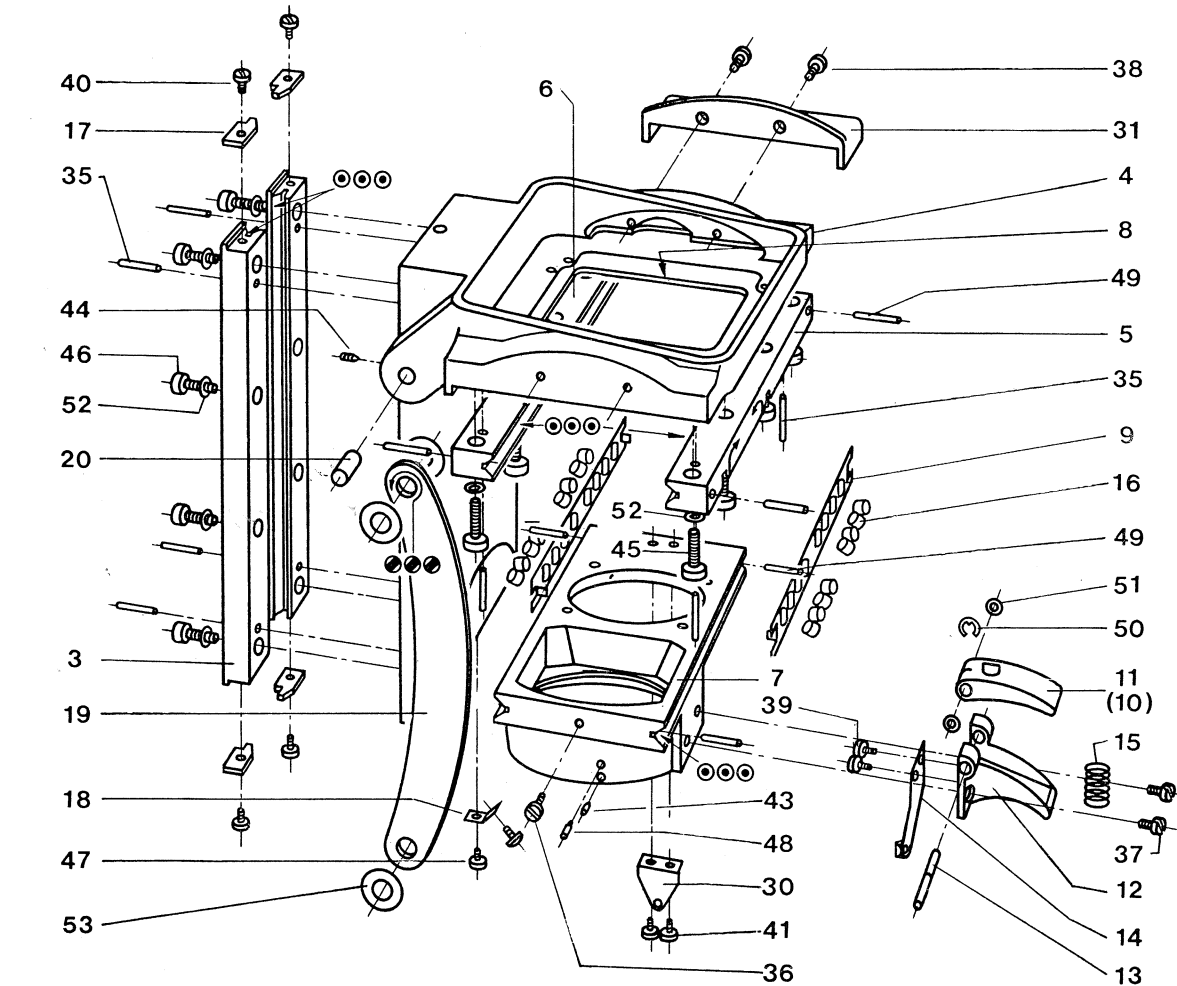
 * for FOCOTAR 1:4, 5/95 mm
 no longer available

** when needed

TECHNICAL SERVICE

KUNDENDIENST

14.12.1973



□ □ □ 340
 ○ ○ ○ 602

Objektivführung, Wechselschlitten / objective guide, focusing stage

Zustand / state 1

TECHNICAL SERVICE

KUNDENDIENST

14.12. 1973

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	042-484. 003-063	4	2	Blattfeder	flat spring
2	042-487. 006-007	3	4	Bremsfeder	brake spring
3	042-614. 005-074	24	2	Rollenbahn	roller train
4	042-614. 005-085	36	1	Führungsstück	guide piece
5	042-614. 005-086	20	1	Rollenbahn	roller train
6	042-614. 005-087	20	1	Rollenbahn	roller train
7	042-614. 005-090	26	1	Objektivschlitten mit Samtstreifen bestehend aus Position 8, 36, 44, 49, 50	lens carrier with felt strip consisting of position 8, 36, 44, 49, 50
8	042-614. 005-092	7	1	Samtstreifen	felt strip
9	042-614. 005-093	9	2	Rollenkäfig	roller cage
10	042-614. 005-098	22	1	Rasthebel, komplett, bestehend aus Position 11-14, 40, 51	rest lever, complete, consisting of position 11-14, 40, 51
11	042-614. 005-099	16	1	Rasthebel	rest lever
12	042-614. 005-102	20	1	Lagerbock	bearing block
13	042-614. 005-103	10	1	Achse	shaft
14	042-614. 005-106	11	1	Raste	rest
15	042-614. 005-112	9	1	Druckfeder	pressure spring
16	042-614. 005-119	4	16	Zylinderrolle	cylindrical roller
17	042-614. 005-121	6	4	Anschlag	stop
18	042-614. 005-170	10	1	Druckplatte	pressure plate
19	042-614. 005-237	18	1	Verbindungsstück	connecting piece
20	042-614. 005-238	7	1	Zylinderstift	cylindrical pin
21	042-614. 005-246	32	1	Einstellschnecke, komplett bestehend aus Position 2, 22-25	focusing mount, complete consisting of position 2, 22-25

Zustand/state 1

Objektivführung, Wechselschlitten / objective guide, focusing stage

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
22	042-614.005-249	15	1	Abdeckring			cover ring
23	042-614.005-251	13	1	Vorschraubring			retaining ring
24	042-614.005-252	15	2	Gewinding			threaded ring
25	042-614.005-253	12	1	Zwischenring			intermediate ring
26	042-614.005-261	31	1	Einstellschnecke, komplett, bestehend aus Position 2 und 24			focusing mount, complete, consisting of position 2 and 24
27	042-614.005-267	11	4	Klammer			cramp
28	042-614.005-271	20	1	Anschlagraste			stop rest
29	042-614.005-272	20	1	Anschlagraste			stop rest
30	042-614.005-279	13	1	Raste			rest
31	042-614.005-320	15	1	Halter			holder
32	042-614.005-322	16	1	Halter			holder
33	042-614.005-324	17	1	Klemmnippel			clamping nipple
34	042-614.005-328	18	1	Drahtauslöser			wire release
35	700-126.163-000	3	8	Zylinderstift	3 m 6 x 14	DIN 7	cylindrical pin
36	700-717.183-000	3	1	Zylinderschraube	AM 3 x 8	DIN 84	cylindrical head screw
37	700-803.233-000	6	2	Zylinderschraube	AM 4 x 6	DIN 84	cylindrical head screw
38	700-805.233-000	6	4	Zylinderschraube	AM 4 x 8	DIN 84	cylindrical head screw
39	701-005.163-000	3	2	Zylinderschraube	AM 2,6 x 5	DIN 85	cylindrical head screw
40	701-005.213-000	3	6	Zylinderschraube 4 für Position 17 1 für Position 28 1 für Position 29	AM 2,6 x 5	DIN 85	cylindrical head screw 4 for position 17 1 for position 28 1 for position 29
41	701-024.213-000	3	2	Zylinderschraube	AM 3 x 5	DIN 85	cylindrical head screw
42	701-028.233-000	5	4	Zylinderschraube	AM 3 x 6	DIN 85	cylindrical head screw

TECHNICAL SERVICE

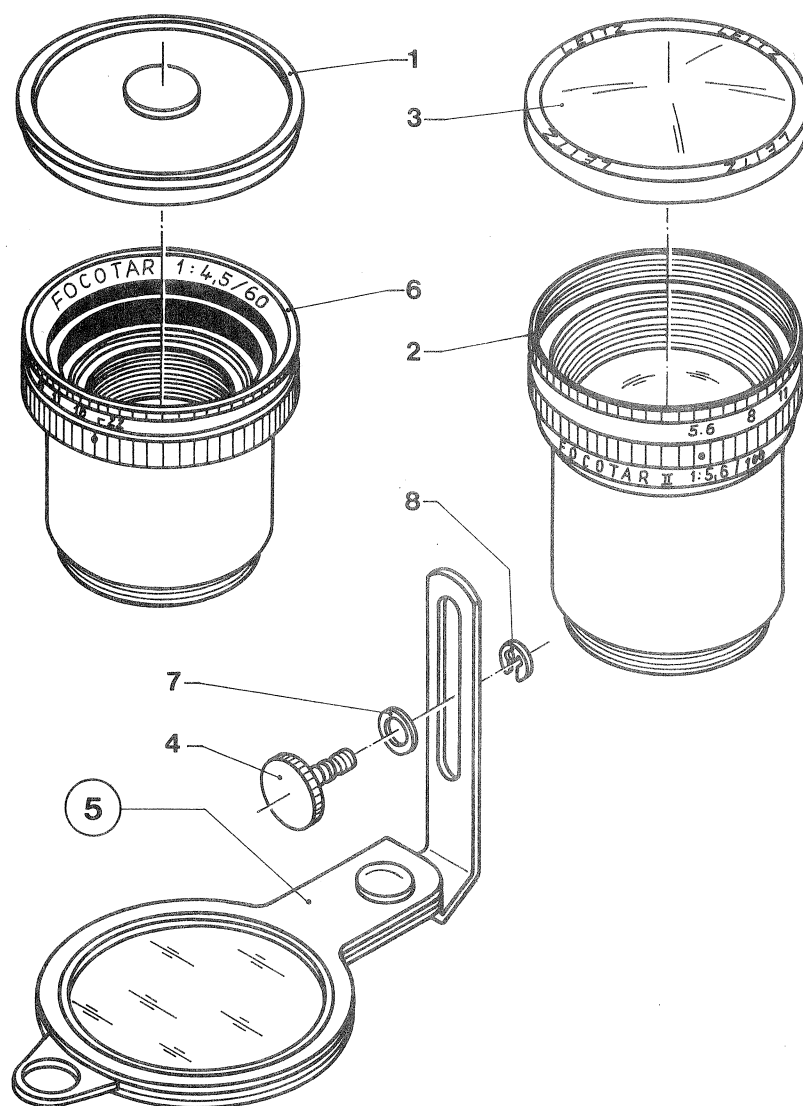
KUNDENDIENST

14.12. 1973

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
43	702-679.183-000	4	1	Gewindestift	M	3 x 4 DIN 553	threaded pin
44	702-681.163-000	4	1	Gewindestift	M	3 x 6 DIN 553	threaded pin
45	703-123.163-000	4	8	Zylinderschraube	M	4 x 10 DIN 912	cylindrical head screw
46	703-123.213-000	4	8	Zylinderschraube	M	4 x 10 DIN 912	cylindrical head screw
47	703-466.233-000	5	2	Linsenschraube	M	2,6 x 4 DIN 920	oval head screw
48	703-927.183-000	4	1	Gewindestift	M	3 x 4 x 1,6 DIN 926	threaded pin
49	704-447.163-000	1	8	Steckkerbstift		2,5 x 10 DIN 1474	grooved pin
				2 für Position 5			2 for position 5
				2 für Position 6			2 for position 6
				4 für Position 7			4 for position 7
50	704-782.000-000	1	1	Sicherungsscheibe		2,3 DIN 6799	c-clip
51	705-556.163-000	3	*	Scheibe		015-121.032-071	washer
52	705-672.163-000	3	16	Scheibe		015-121.042-261	washer
				8 für Position 3			8 for position 3
				4 für Position 5			4 for position 5
				4 für Position 6			4 for position 6
53	706-363.163-000	3	4	Scheibe		015-121.065-302	washer

* nach Bedarf

* when needed



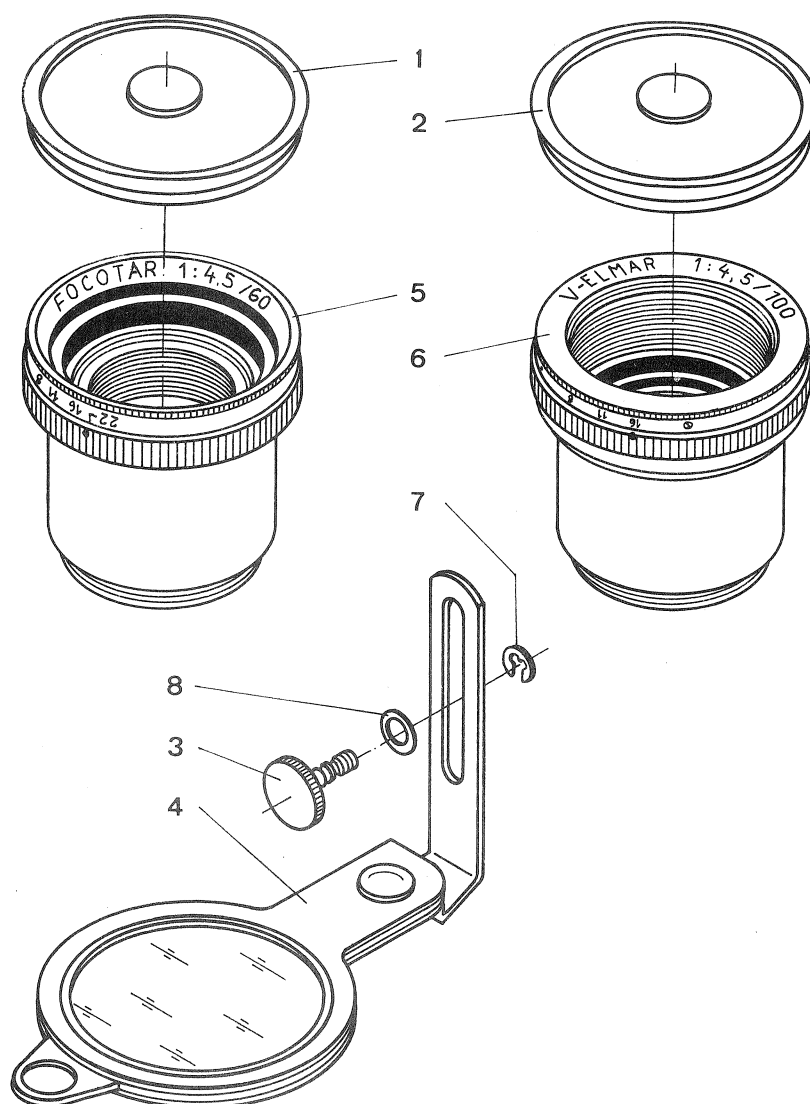
Objektive, Rotfilter-/ objectives, red filter

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung		Description
1	028-860.053-000	8	1	Schutzkappe		cover
2	040-252.001-000	63	1	Objektiv FOCOTAR-II 1:5, 6/100mm		lens FOCOTAR-II 1:5, 6/100mm
3	040-252.001-068	8	1	Schutzkappe		cover
4	042-597.007-009	11	1	Rändelschraube		knurled screw
5	042-614.018-000	21	1	Rotfilter, komplett einschließlich Position 4, 7 und 8		red filter, complete pos. 4, 7 and 8 included
6	042-633.002-000	60	1	Objektiv FOCOTAR 1:4,5/60mm		lens FOCOTAR 1:4,5/60mm
7	705-988.000-000	2	1	Scheibe	015-122.044-271	washer
8	704-784.000-000	1	1	Sicherungsscheibe	3, 2 DIN 6799	c-clip

TECHNICAL SERVICE

KUNDENDIENST

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Objektive, Rotfilter / objectives, red filter

Zustand / state 2

TECHNICAL SERVICE

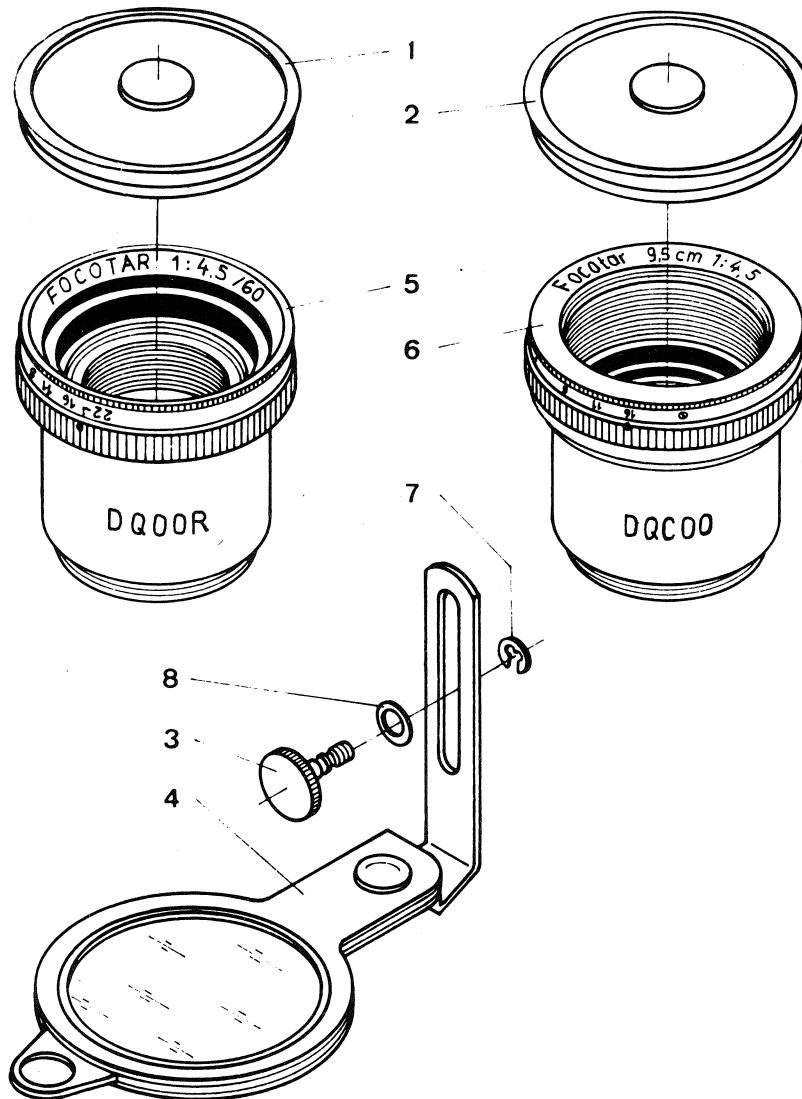
KUNDENDIENST

4.12.1978

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	028-860.053-000	8	1	Schutzkappe	cover
2	028-860.054-000	8	1	Schutzkappe	cover
3	042-597.007-009	11	1	Rändelschraube	knurled screw
4	042-614.018-000	21	1	Rotfilter, komplett einschließlich Position 3, 7 und 8	red filter, complete position 3, 7 and 8 inclusive
5	042-633.002-000	60	1	Objektiv Focotar 1:4, 5/60mm	objective Focotar 1:4, 5/60mm
6	nicht mehr lieferbar *		1	Objektiv V-Elmar 1:4, 5/100mm	objective V-Elmar 1:4, 5/100mm
7	704-784.000-000	1	1	Sicherungsscheibe 3, 2 DIN 6799	c-clip
8	705-988.000-000	2	1	Scheibe 015-122.044-271	washer

*Ersatz: FOCOTAR II 1:5,6/100mm
Seite 6.3

*spare part: FOCOTAR II 1:5,6/100mm
page 6.3



Objektive, Rotfilter / objectives, red filter

Zustand / state 1

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	028-860.053-000	8	1	Schutzkappe	cover
2	028-860.054-000	8	1	Schutzkappe	cover
3	042-597.007-009	11	1	Rändelschraube	knurled screw
4	042-614.018-000	21	1	Rotfilter, komplett einschließlich Position 3, 7 und 8	red filter, complete position 3, 7 and 8 inclusive
5	042-633.002-000	60	1	Objektiv Focotar 1:4, 5/60 mm	objective Focotar 1:4, 5/60 mm
6	nicht mehr lieferbar *		1	Objektiv Focotar 1:4, 5/95 mm	objective Focotar 1:4, 5/95 mm
7	704-784.000-000	1	1	Sicherungsscheibe 3, 2 DIN 6799	c-clip
8	705-988.000-000	2	1	Scheibe 015-122.044-271	washer

* Ersatz: FOCOTAR II 1:5,6/100mm

Seite 6.3

siehe Umbauanleitung

Seite 101.1

* spare part: FOCOTAR II 1:5,6/100mm

page 6.3

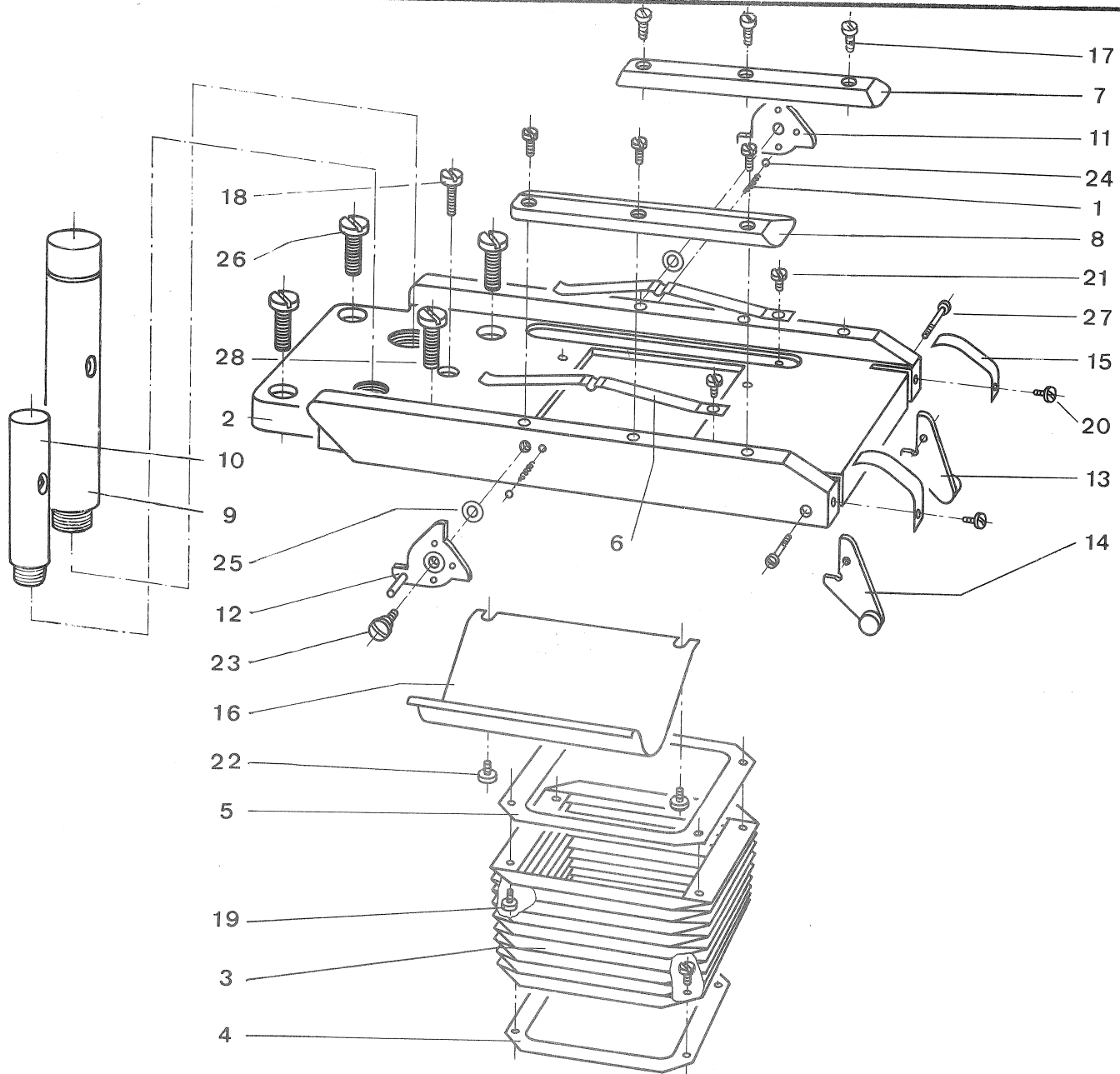
see conversions

page 101.1

TECHNICAL SERVICE

KUNDENDIENST

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Tischplatte, Balgen / stage plate, bellows

Zustand / state 1

TECHNICAL SERVICE

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Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
1	042-601.001-046	4	2	Druckfeder			pressure spring
2	042-614.005-124	35	1	Tischplatte			stage plate
3	042-614.005-127	25	1	Balgen			bellows
4	042-614.005-128	11	1	Halteblech			holding
5	042-614.005-129	11	1	Halteblech			holding
6	042-614.005-285	9	2	Rastfeder			catch spring
7	042-614.005-287	26	1	Anschlagleiste, rechts			stopping ledge, right
8	042-614.005-288	26	1	Anschlagleiste, links			stopping ledge, left
9	042-614.005-290	18	1	Führungsbolzen			guide bolt
10	042-614.005-291	16	1	Gewindebolzen			threaded bolt
11	042-614.005-293	13	1	Anschlag, rechts			stopping, right
12	042-614.005-297	13	1	Anschlag, links			stopping, left
13	042-614.005-304	14	1	Rasthebel, rechts			rest lever, right
14	042-614.005-310	14	1	Rasthebel, links			rest lever, left
15	042-614.005-317	12	2	Gleitfeder			slide spring
16	042-614.005-345	14	2	Filmschale			film tray
17	700-807.000-000	6	6	Zylinderschraube	M	4 x 8	DIN 84 cylindrical head screw
18	700-819.418-000 *	5	1	Zylinderschraube	AM	4 x 18	DIN 84 cylindrical head screw
19	701-005.233-000	5	8	Zylinderschraube	AM 2,6	x 5	DIN 85 cylindrical head screw
20	701-028.213-000	4	2	Zylinderschraube	AM	3 x 6	DIN 85 cylindrical head screw
21	701-028.233-000	6	2	Zylinderschraube	AM	3 x 6	DIN 85 cylindrical head screw
22	701-078.233-000	6	4	Zylinderschraube	AM	4 x 6	DIN 85 cylindrical head screw
23	703-745.213-000	4	2	Linsenschraube	M	3 x 1,6	DIN 923 oval head screw
24	704-612.000-000	1	2	Kugel	ø 2,5 III		DIN 5401 ball

Zustand/state 1

Tischplatte, Balgen / stage plate, bellows

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung		Description
25	705-603.163-000	2	2	Scheibe	015-121.035-062	washer
26	705-648.233-000	7	2	Zylinderschraube	AM 6 x 18 DIN 84	cylindrical head screw
27	706-355.233-000	7	2	Zylinderschraube	015-010.031-015	cylindrical head screw
28	706-757.233-000	7	2	Zylinderschraube	AM 6 x 15 DIN 84	cylindrical head screw

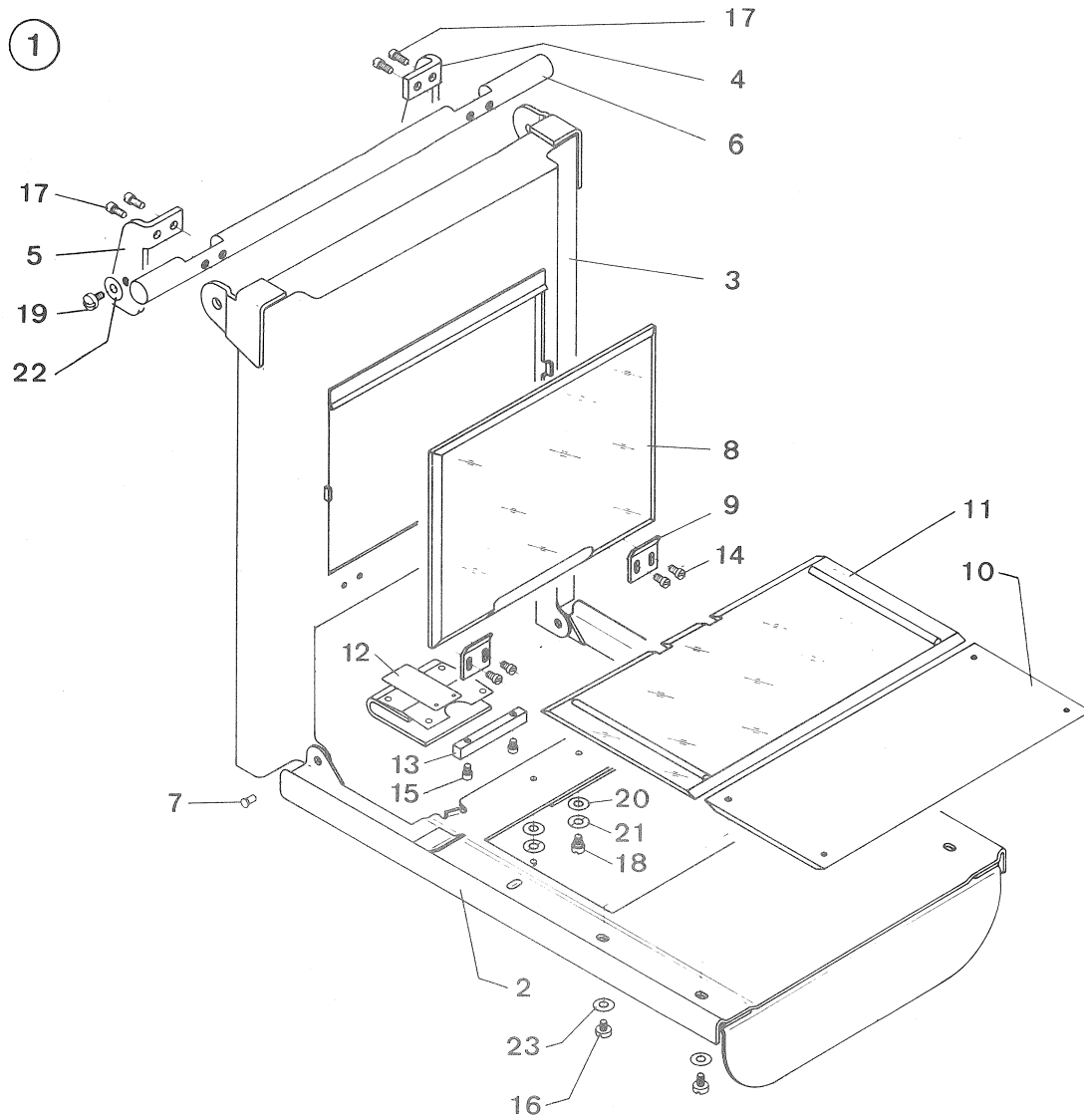
* wird nur für den Versand benötigt
zum Festhalten des Führungsstückes

* is only being used to
hold the guide piece
in shipment

TECHNICAL SERVICE

KUNDENDIENST

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Filmhalter 6 x 9 cm / negative carrier 6 x 9 cm

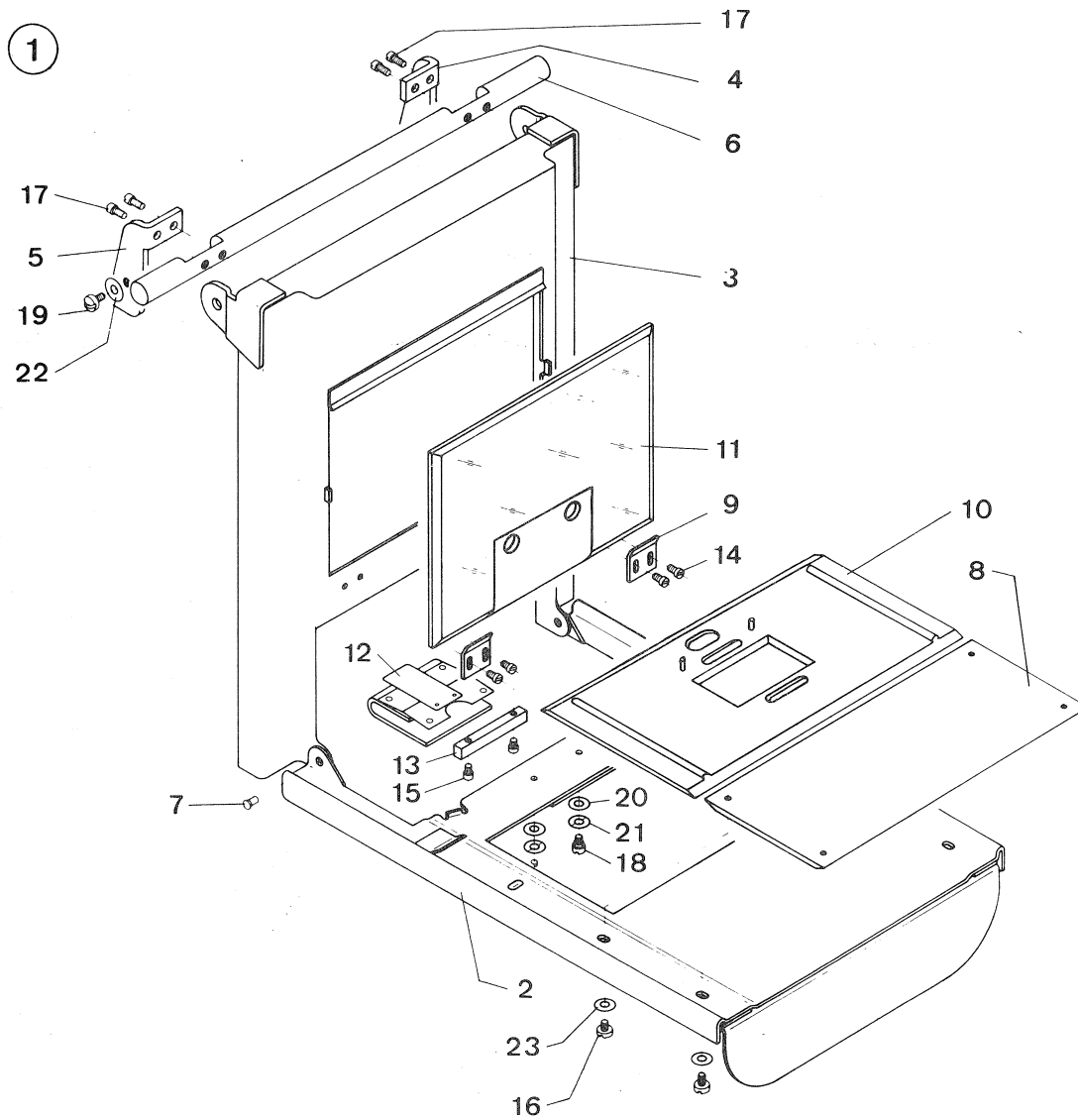
Zustand/ state 1

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	042-614.009-000	52	-	Filmhalter, komplett mit allen auf diesem Blatt aufgeführten Teilen	negative carrier, complete with all parts listed on this page
2	042-614.009-005	22	1	Filmhalter, Unterteil	negative carrier, lower part
3	042-614.009-014	23	1	Filmhalter, Oberteil	negative carrier, upper part
4	042-614.009-024	13	1	Exzenterhebel, rechts	eccentric lever, right
5	042-614.009-025	13	1	Exzenterhebel, links	eccentric lever, left
6	042-614.009-028	15	1	Stange	bar
7	042-614.009-032	10	2	Hohlriet	tubular rivet
8	042-614.009-035	28	1	Glasplatte, obere	glass plate, upper
9	042-614.009-036	10	2	Haltefeder	retaining spring
10	042-614.009-039	20	1	Platte	plate
11	042-614.009-041	29	1	Glasplatte, untere	glass plate, lower
12	042-614.009-044	16	1	Schieber, komplett einschließlich Position 13 und 15	slide, complete position 13 and 15 inclusive
13	042-614.029-026	12	1	Anschlagleiste	stop ledge
14	700-965.233-000	4	4	Linsenschraube	AM 2 x 2 DIN 85 oval head screw
15	700-971.233-000	4	2	Linsenschraube	AM 2 x 4 DIN 85 oval head screw
16	700-997.233-000	5	4	Linsenschraube	AM 2,6 x 3 DIN 85 oval head screw
17	701-008.213-000	3	4	Linsenschraube	AM 2,6 x 6 DIN 85 oval head screw
18	703-714.233-000	4	2	Linsenschraube	M 2 x 1,6 DIN 923 oval head screw
19	703-732.233-000	5	2	Linsenschraube	M 2,6 x 2 x 2 DIN 923 oval head screw
20	705-535.163-000	2	2	Scheibe	015-121.032-061 washer
21	705-537.163-000	3	2	Sattelfeder	015-125.032-121 saddle spring
22	706-113.163-000	3	2	Scheibe	015-121.033-352 washer
23	706-255.163-000	2	4	Scheibe	015-121.023-282 washer

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Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	17 876		-	Filmhalter mit einseitigem Glasandruck für Format 24 x 36 mm, komplett mit allen auf diesem Blatt aufgeführten Teilen, siehe Gesamtkatalog	glass negative carrier with single-glass pressure plate for 35 mm negative, complete with all parts listed on this page see general catalogue
2	042-614. 009-005	22	1	Filmhalter, Unterteil	negative carrier, lower part
3	042-614. 009-014	23	1	Filmhalter, Oberteil	negative carrier, upper part
4	042-614. 009-024	13	1	Exzenterhebel, rechts	eccentric lever, right
5	042-614. 009-025	13	1	Exzenterhebel, links	eccentric lever, left
6	042-614. 009-028	15	1	Stange	bar
7	042-614. 009-032	10	2	Hohlriet	tubular rivet
8	042-614. 009-039	20	1	Platte	plate
9	042-614. 029-006	11	2	Haltefeder	retaining spring
10	042-614. 029-007	33	1	Blende, komplett	diaphragm, complete
11	042-614. 029-015	28	1	Glasplatte	glass plate
12	042-614. 029-020	18	1	Schieber, komplett, einschließlich Position 13 und 15	slide, complete, position 13 and 15 inclusive
13	042-614. 029-026	12	1	Anschlagleiste	stop ledge
14	700-965. 233-000	4	4	Linsenschraube AM 2 x 2 DIN 85	oval head screw
15	700-971. 233-000	4	2	Linsenschraube AM 2 x 4 DIN 85	oval head screw
16	700-997. 233-000	5	4	Linsenschraube AM 2,6 x 3 DIN 85	oval head screw
17	701-008. 213-000	3	4	Linsenschraube AM 2,6 x 6 DIN 85	oval head screw
18	703-714. 233-000	4	2	Linsenschraube M 2 x 1,6 DIN 923	oval head screw
19	703-732. 233-000	5	2	Linsenschraube M 2,6 x 2 x 2 DIN 923	oval head screw
20	705-535. 163-000	2	2	Scheibe 015-121. 032-061	washer

Zustand/state 1

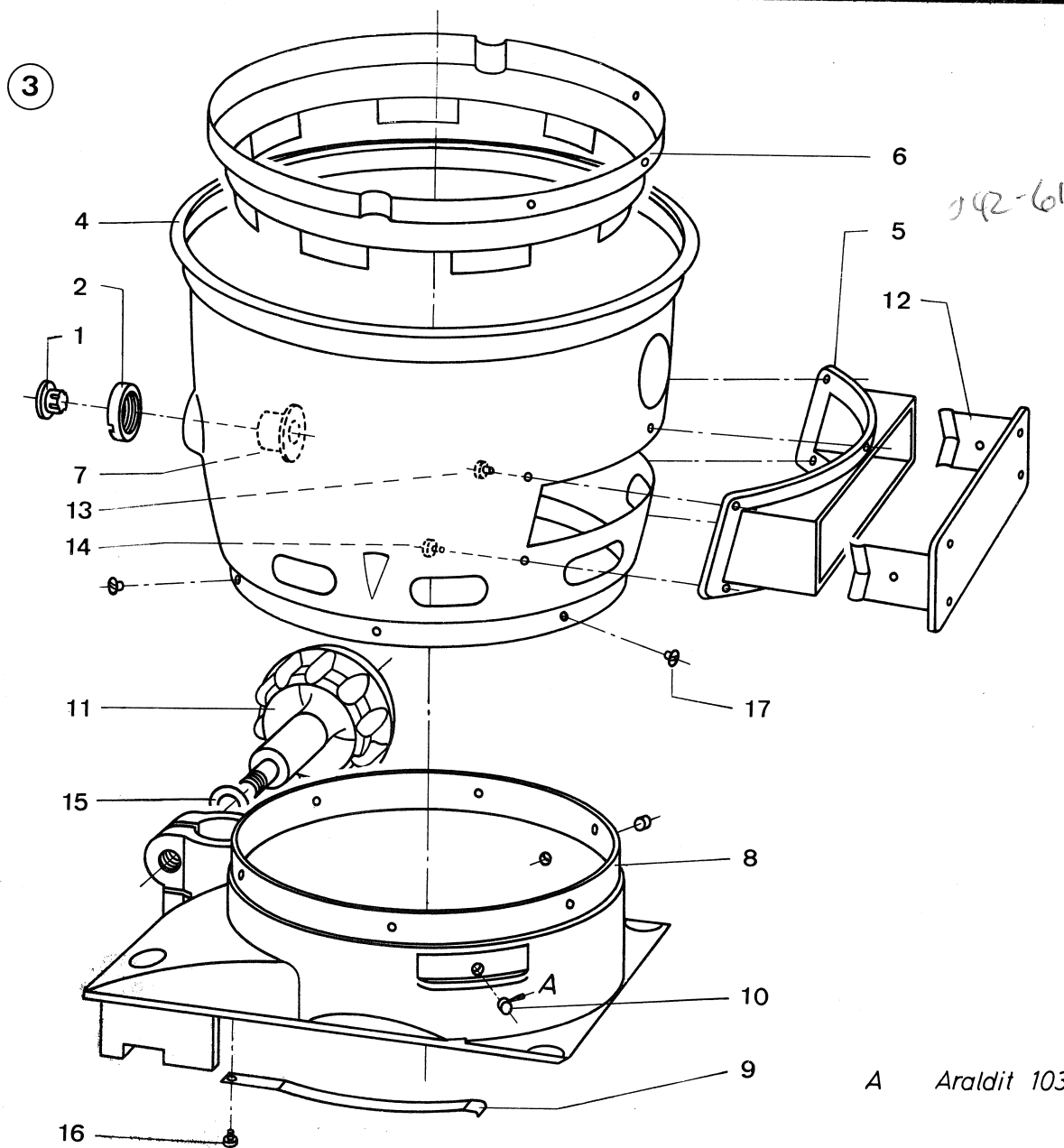
Filmhalter 17 876 negative carrier

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
21	705-537.163-000	3	2	Sattelfeder	015-125.032-121 saddle spring
22	706-113.163-000	3	2	Scheibe	015-121.033-352 washer
23	706-255.163-000	2	4	Scheibe	015-121.023-282 washer

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A Araldit 103

TECHNICAL SERVICE

KUNDENDIENST

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142-614-201-000

Lampengehäuse-Unterteil / lamp housing lower part

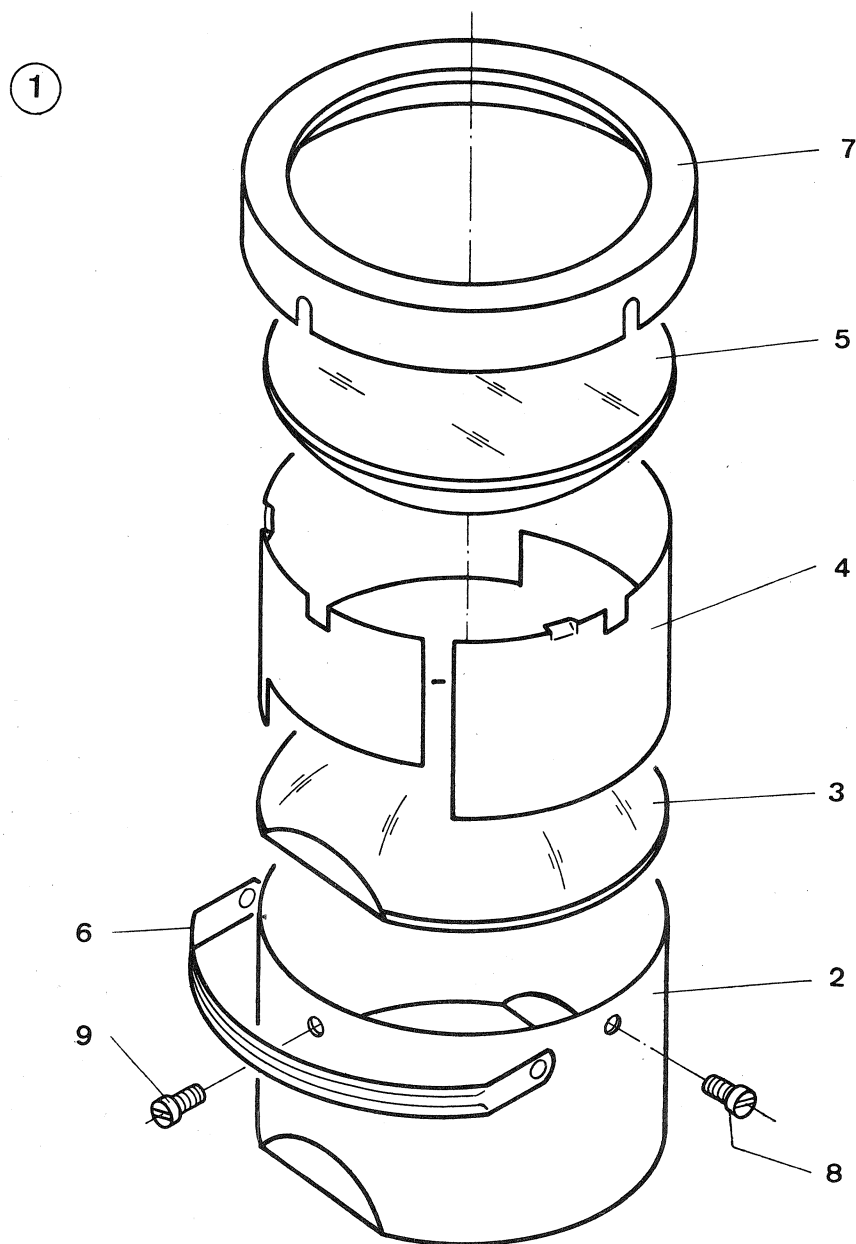
Zustand / state 1

TECHNICAL SERVICE

KUNDENDIENST

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Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	016-015.001-005	3	1	Gleitschutz	sliding protection
2	042-506.001-015	15	1	Vorschraubring	retaining ring
3	042-614.006-001	49	-	Lampengehäuse-Unterteil, komplett, mit allen auf diesem Blatt aufgeführ- ten Teilen, jedoch ohne Position 12	lamp housing lower part, complete, with all parts, listed on this page, without position 12
4	042-614.006-005	27	1	Gehäusemantel	housing
5	042-614.006-007	19	1	Schieberführung	guide for slide
6	042-614.006-010	17	1	Blende	sliding diaphragm
7	042-614.006-011	15	1	Führungsbuchse	guide bush
8	042-614.006-013	36	1	Lampenhausträger	carrier for lamp housing
9	042-614.006-016	11	2	Blattfeder	flat spring
10	042-614.006-028	12	2	Gewindebuchse	threaded bush
11	042-614.006-032	18	1	Halbkugelknopf	hemispherical knob
12	042-614.019-001	18	1	Lichtabschluß	light stop
13	701-000.233-000	5	3	Linsenschraube	M 2,6 x 4 DIN 85 oval head screw
14	701-004.233-000	5	3	Linsenschraube	M 2,6 x 5 DIN 85 oval head screw
15	705-869.000-000	3	1	Scheibe	015-121.084-072 washer
16	705-990.233-000	6	2	Linsenschraube	M 3 x 6 DIN 85 oval head screw
17	706-129.233-000	5	6	Linsenschraube	015-010.032-007 oval head screw

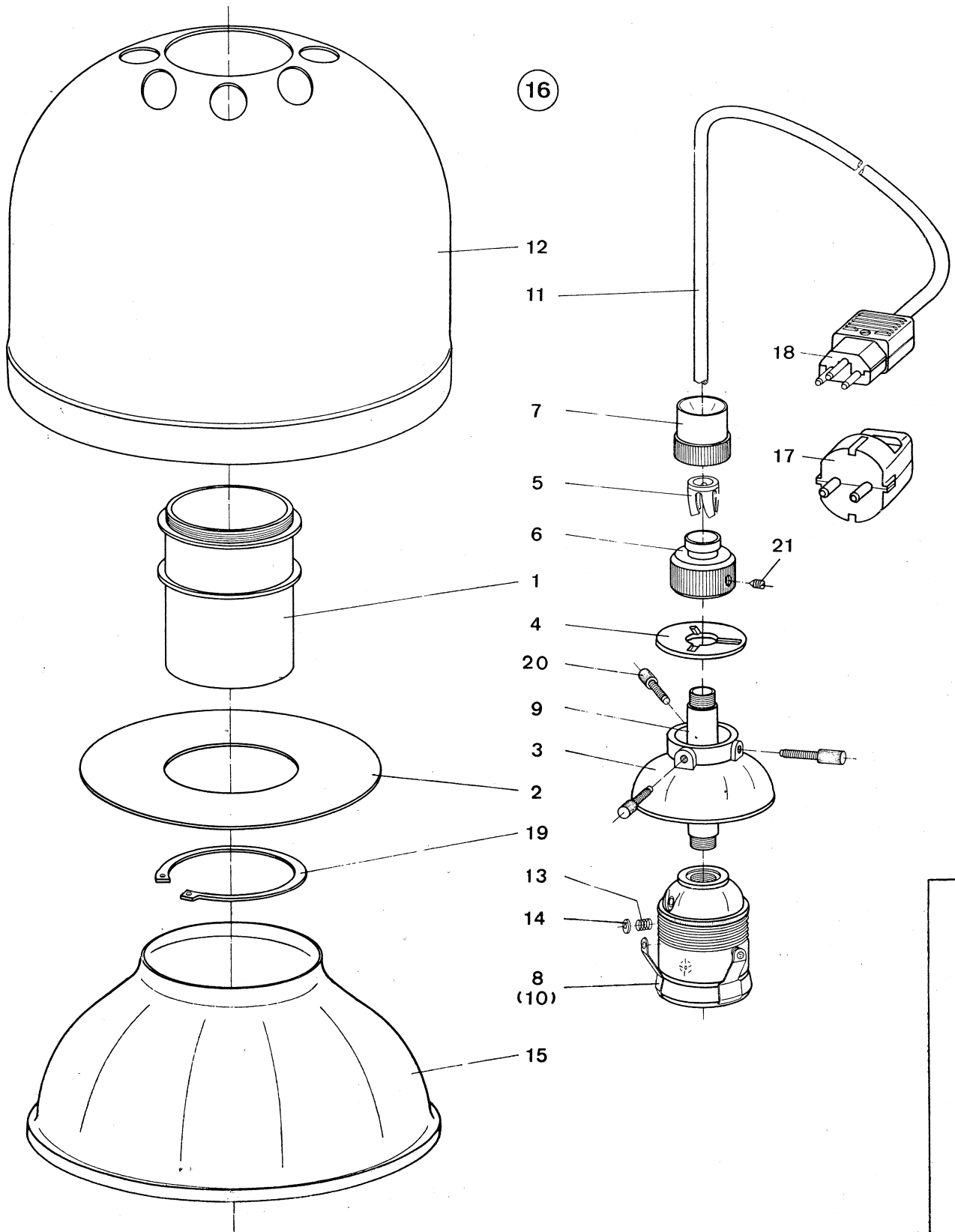


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TECHNICAL SERVICE

KUNDENDIENST

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Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung		Description	
1	042-614.007-001	49	-	Doppelkondensor, komplett mit allen auf diesem Blatt aufgeführten Teilen		double condenser, complete with all parts listed on this page	
2	042-614.007-005	20	1	Fassung		mount	
3	042-614.007-006	32	1	Beleuchtungslinse		lens	
4	042-614.007-007	21	1	Zwischenstück		intermediate piece	
5	042-614.007-008	31	1	Beleuchtungslinse		lens	
6	042-614.007-010	12	1	Griff		handle	
7	042-614.007-013	14	1	Abschlußring		end ring	
8	703-745.233-000	6	2	Linsenschraube	M 3 x 1,6	DIN 923	oval head screw
9	705-990.233-000	6	2	Linsenschraube	M 3 x 6	DIN 85	oval head screw



Lampengehäuse-Oberteil / lamp housing upper part

Zustand / state 1

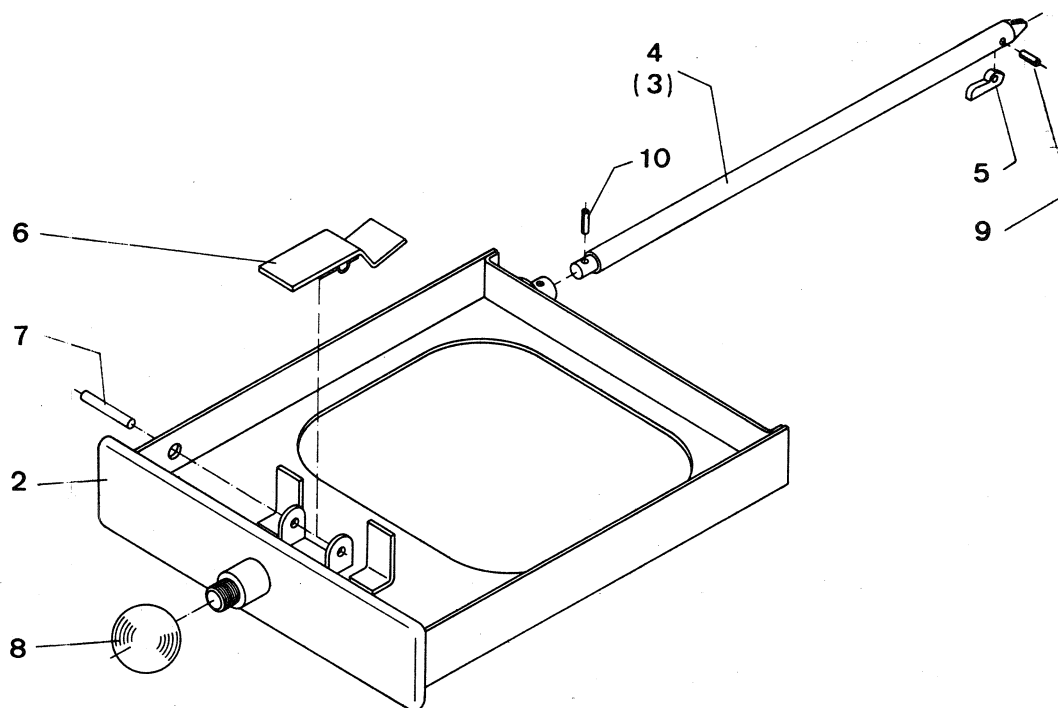
TECHNICAL SERVICE

KUNDENDIENST

14.12.1973

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	042-484.005-004	19	1	Zwischenrohr	intermediate tube
2	042-484.005-005	13	1	Lichtblende, klein	light stop, small
3	042-484.005-007	19	1	Abschlußkappe	stop plate
4	042-484.005-016	12	1	Blende	sliding diaphragm
5	042-484.005-039	12	1	Einsatz	insert
6	042-484.005-041	18	1	Rändelring	knurled ring
7	042-484.005-042	18	1	Kappe	cap
8	042-484.005-044	19	1	Lampenfassung	lamp socket
9	042-484.005-047	16	1	Rohr	tube
10	042-484.063-012	30	1	Lampenfassung mit Zubehör, bestehend aus Position 3 bis 9, 11, 18, 20 und 21	lamp socket with accessory, consisting of position 3 to 9, 11, 18, 20 and 21
11	042-484.063-014	19	1	Silicon-Kabel	silicon cable
12	042-614.008-005	21	1	Lampenhalkugel	lamp housing hemispherical
13	042-614.008-035	5	3	Druckfeder	pressure spring
14	042-614.008-036	5	3	Federteller	spring plate
15	042-614.008-039	18	1	Lichtblende, groß	light stop, large
16	042-614.066-000	30 41	-	Lampengehäuse-Oberteil, komplett, mit allen auf diesem Blatt aufgeführ- ten Teilen, jedoch ohne Position 17	lamp housing upper part, complete, with all parts listed on this page, without position 17
17	302-016.035-001	15	1	Schuko-Stecker	schuko-plug
18	302-016.039-011	13	1	Stecker	plug
19	702-425.000-000	12	1	Sicherungsring	56 x 2 DIN 471 safety ring
20	706-223.213-000	11	3	Zentrierschraube	015-010.047-041 centring screw
21	707-127.163-000	4	1	Gewindestift	AM 4 x 5 DIN 916 threaded pin

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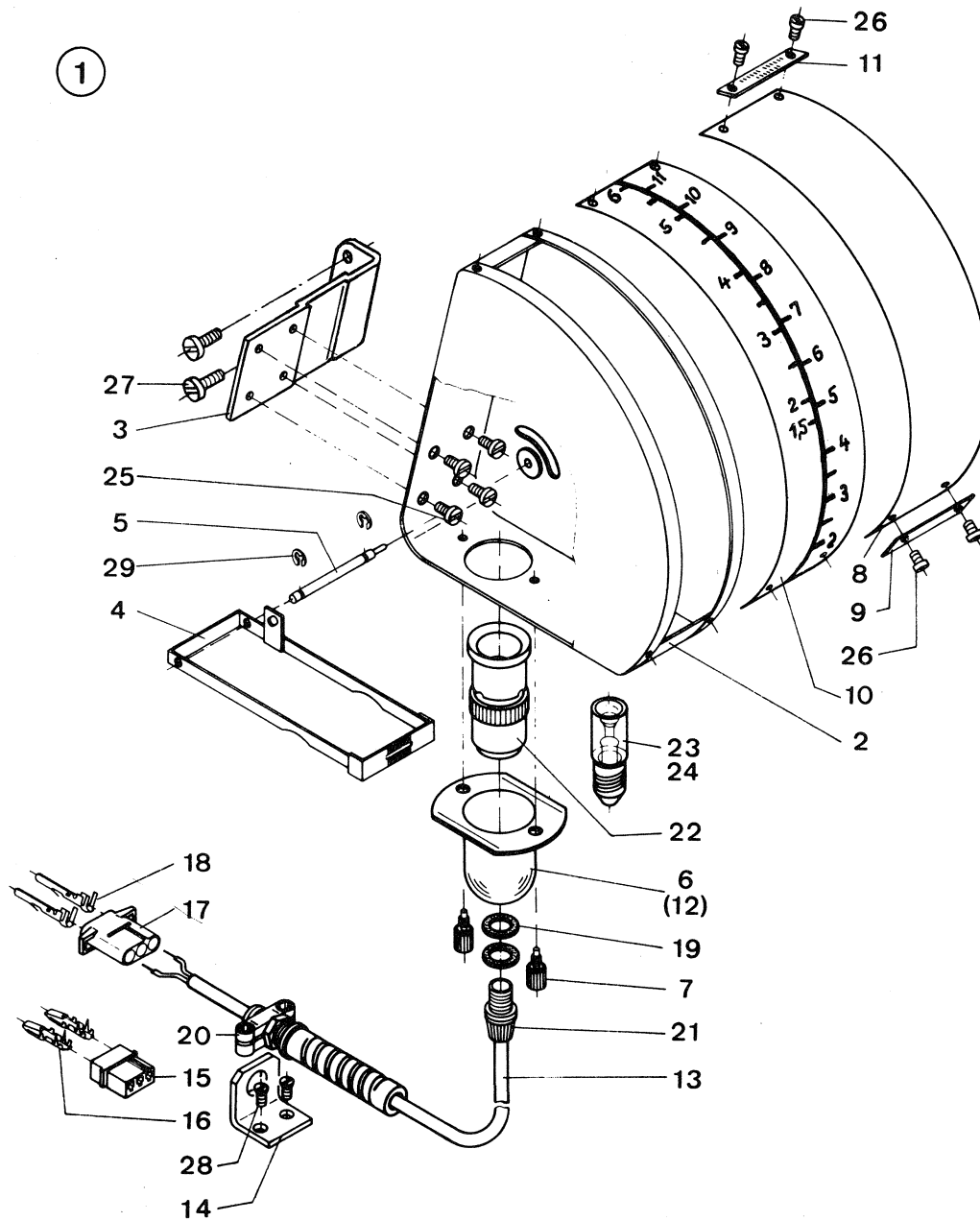


Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung		Description	
1	17 864	-	-	Filter-Schieber, komplett mit allen auf diesem Blatt aufgeführ- ten Teilen siehe Gesamtkatalog		filter drawer, complete with all parts listed on this page see general catalogue	
2	042-614.011-005	24	1	Filterschieber		filter drawer	
3	042-614.011-016	18	1	Stange, komplett, bestehend aus Position 4, 5 und 9		shaft, complete, consisting of position 4, 5 and 9	
4	042-614.011-017	17	1	Stange		shaft	
5	042-614.011-018	11	1	Rastnase		locking pawl	
6	042-614.011-025	16	1	Hebel		lever	
7	700-136.163-000	3	1	Zylinderstift	3 m 6 x 20	DIN 7	cylindrical pin
8	701-924.000-000	10	1	Kugelknopf	C 25	DIN 319	ball head
9	705-199.000-000	2	1	Spiralstift	N 1, 5 x 6	LN 123 06	spiral pin
10	705-209.000-000	2	1	Spiralstift	N 2 x 8	LN 123 06	spiral pin

TECHNICAL SERVICE

KUNDENDIENST

14.12.1973



Vergrößerungsanzeiger / enlargement indicator

Zustand / state 1

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	17 862		-	Vergrößerungsanzeiger, komplett mit allen auf diesem Blatt aufgeführten Teilen, jedoch ohne Position 15 und 16, Position 23 oder 24 nach Wahl, siehe Gesamtkatalog	enlargement indicator, complete with all parts listed on this page without position 15 and 16, position 23 or 24 by choice, see general catalogue
2	042-614. 016-005	25	1	Gehäuse	housing
3	042-614. 016-014	17	1	Winkel	angle
4	042-614. 016-019	23	1	Zeiger	pointer
5	042-614. 016-027	12	1	Achse	shaft
6	042-614. 016-035	23	1	Lampenhalter	lamp holder
7	042-614. 016-036	14	2	Rändelschraube	knurled screw
8	042-614. 016-046	15	1	Deckplatte	cover plate
9	042-614. 016-048	11	1	Halteplatte	hold plate
10	042-614. 016-050	20	1	Skala	scale
11	042-614. 016-051	15	1	Halteplatte	hold plate
12	042-614. 016-073	27	1	Kabel mit Lampenfassung, komplett, bestehend aus Position 6, 7, 13 bis 20	cable with lamp socket, complete, consisting of position 6, 7, 13 to 20
13	042-614. 016-074	17	1	Kunststoffschlauchleitung	synthetic cable
14	042-614. 016-078	15	1	Winkel	angle
15	302-014. 001-002	8	1	AMP-Steckgehäuse	AMP-flat contact housing
16	302-014. 001-003	5	2	AMP-Flachkontakt	AMP-flat contact
17	302-014. 003-001	7	1	AMP-Stiftgehäuse	AMP-pin housing
18	302-014. 003-003	5	2	AMP-Stiftkontakt	AMP-pin contact
19	302-015. 000-006	5	2	Glimmerscheibe	mica washer
20	302-021. 014-001	13	1	Netzkabeldurchführung	cable protection
21	302-021. 037-001	5	1	Zugentlastung	traction relief

TECHNICAL SERVICE

KUNDENDIENST

14.12. 1973

Zustand/state¹

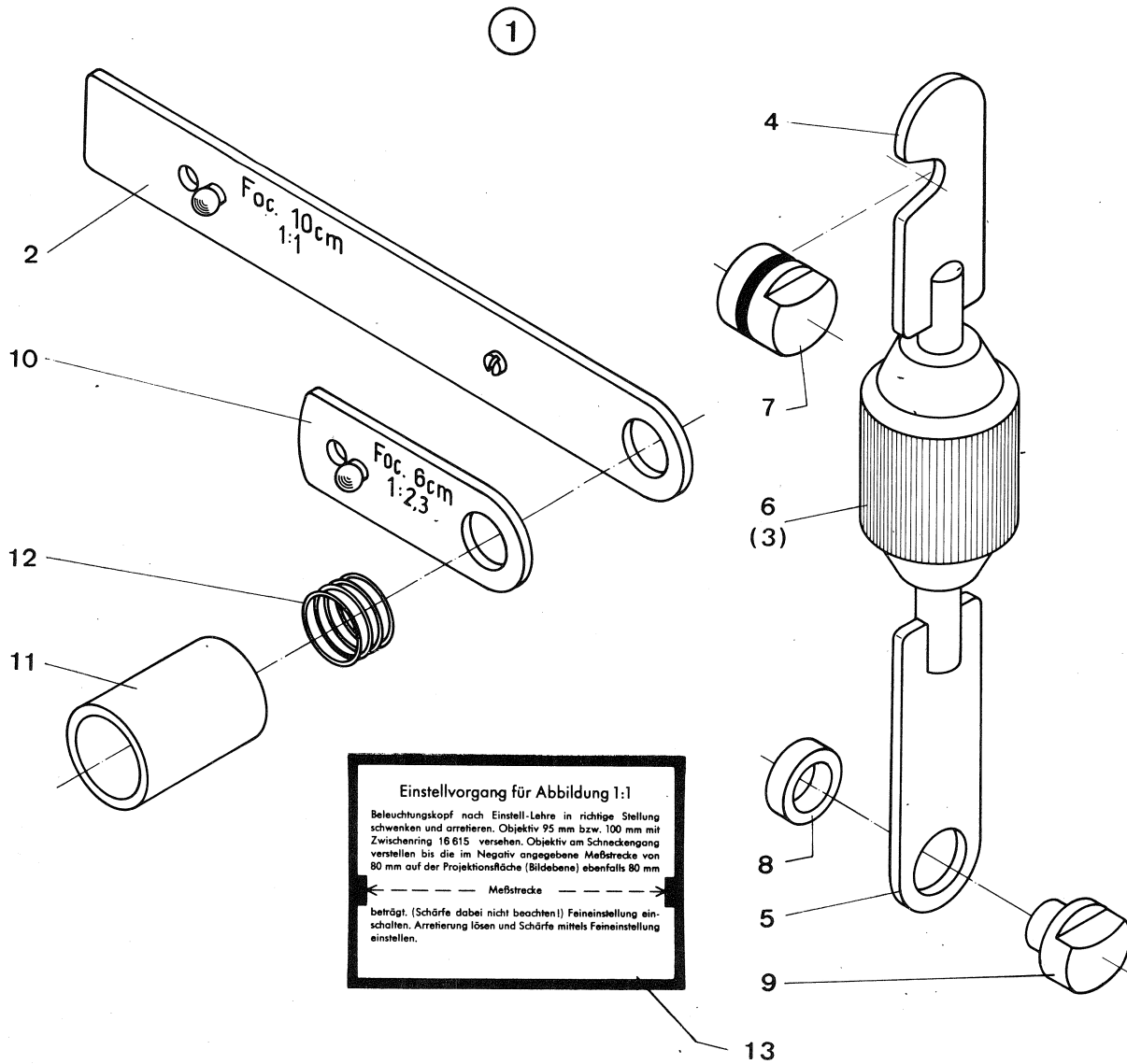
Vergrößerungsanzeiger / enlargement indicator

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
22	302-033.001-000	11	1	Lampenfassung	E 14		lamp mount E 14
23	302-053.002-001	12	1	Glimmlampe	110 V		glow lamp 110 V
24	302-053.002-002	12	1	Glimmlampe	220 V		glow lamp 220 V
25	700-702.183-000	4	4	Zylinderschraube	M 3 x 4	DIN 84	cylindrical head screw
26	701-001.233-000	5	4	Linsenschraube	M 2,6 x 4	DIN 85	oval head screw
27	701-087.233-000	6	2	Linsenschraube	M 4 x 12	DIN 85	oval head screw
28	701-629.233-000	6	2	Senkholzschraube	3 x 15	DIN 97	countersunk head wood screw
29	704-781.000-000	1	2	Sicherungsscheibe	1,9	DIN 6799	c-clip

TECHNICAL SERVICE

KUNDENDIENST

14.12. 1973



Zusatz-Einstellvorrichtung / supplementary setting gauge

Zustand / state 1

TECHNICAL SERVICE

KUNDENDIENST

14.12.1973

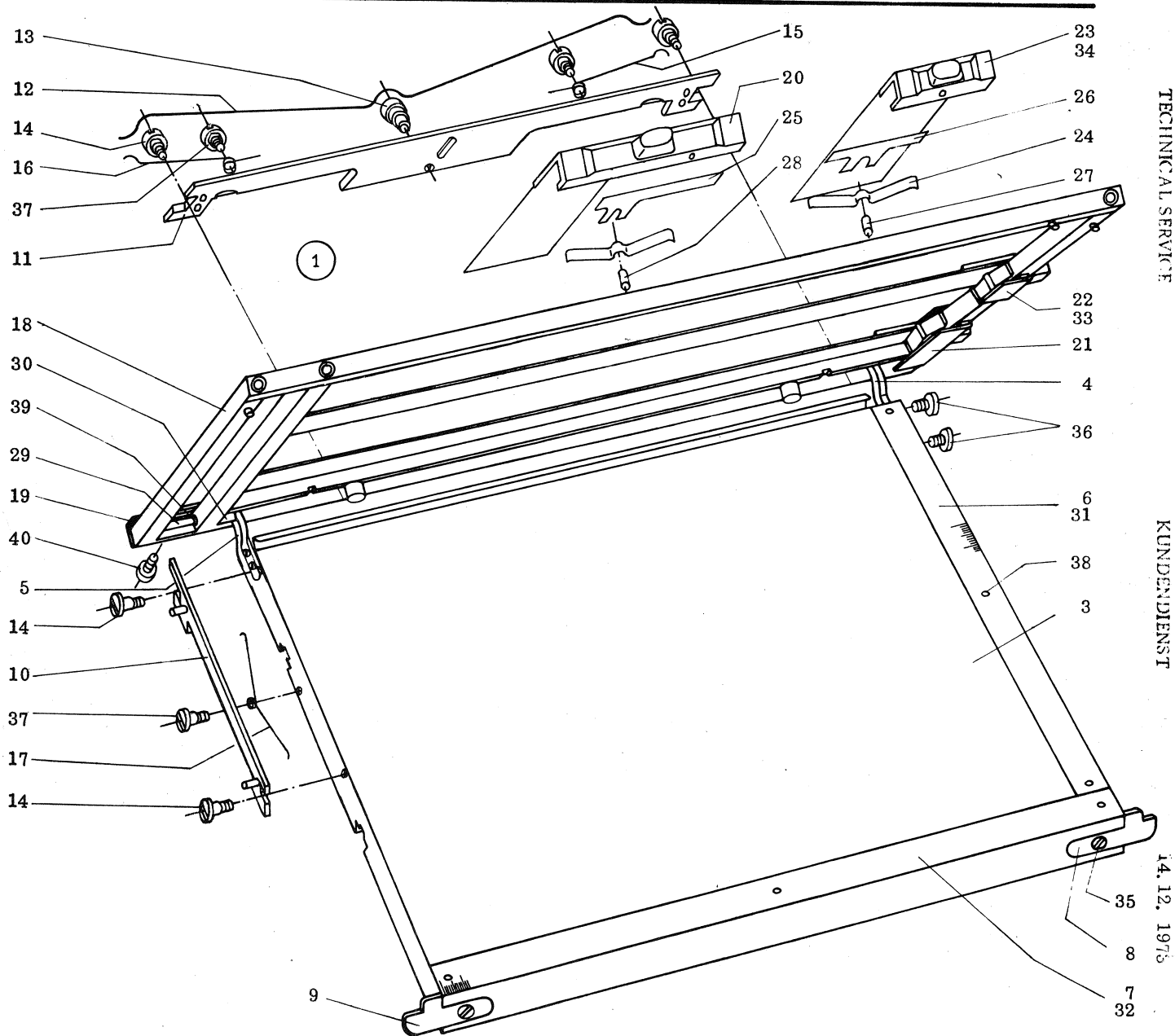
Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	17 861 * **		-	Zusatz-Einstellvorrichtung komplett, mit allen auf diesem Blatt aufgeführten Teilen, siehe Gesamtkatalog	supplementary setting gauge with all parts listed on this page see general catalogue
2	042-614. 037-013	20	1	Abstandsleiste, komplett	distance ledge, complete
3	042-614. 039-004	33	1	Feineinstellung, komplett, bestehend aus Position 4 bis 6	precision adjustment, complete, consisting of position 4 to 6
4	042-614. 039-005	21	1	Einstell-Oberteil, komplett	adjustment upper part, complete
5	042-614. 039-016	21	1	Einstell-Unterteil, komplett	adjustment lower part, complete
6	042-614. 039-022	20	1	Einstellmutter	adjustment nut
7	042-614. 039-025	17	1	Mutter	nut
8	042-614. 039-026	11	1	Zwischenring	intermediate ring
9	042-614. 039-027	17	1	Mutter	nut
10	042-614. 039-039	20	1	Abstandsleiste, komplett	distance ledge, complete
11	042-614. 039-046	16	1	Griff	handle
12	042-614. 039-047	12	1	Druckfeder	pressure spring
13	042-614. 039-049	13	1	Einstell-Testfilm	adjustment test film

* zusätzlich für Abbildungsverhältnis 1:1 - - Zwischenring 16 615
additional to scale 1:1 - - intermediate ring 16 615

zusätzlich für Abbildungsverhältnis 1:2,3 - - Zwischenring 16 617
additional to scale 1:2,3 - - intermediate ring 16 617

** für FOCOTAR 1:4, 5/95 mm nicht mehr lieferbar
no longer available for FOCOTAR 1:4, 5/95 mm

Zustand/state 1 17 588 Metall-Vergrößerungsrahmen 18x24 cm / 8x10" metal masking frame 17 594



17 588 Metall-Vergrößerungsrahmen 18x24 cm / 8x10" metal masking frame 17 594

Zustand / state 1

TECHNICAL SERVICE

KUNDENDIENST

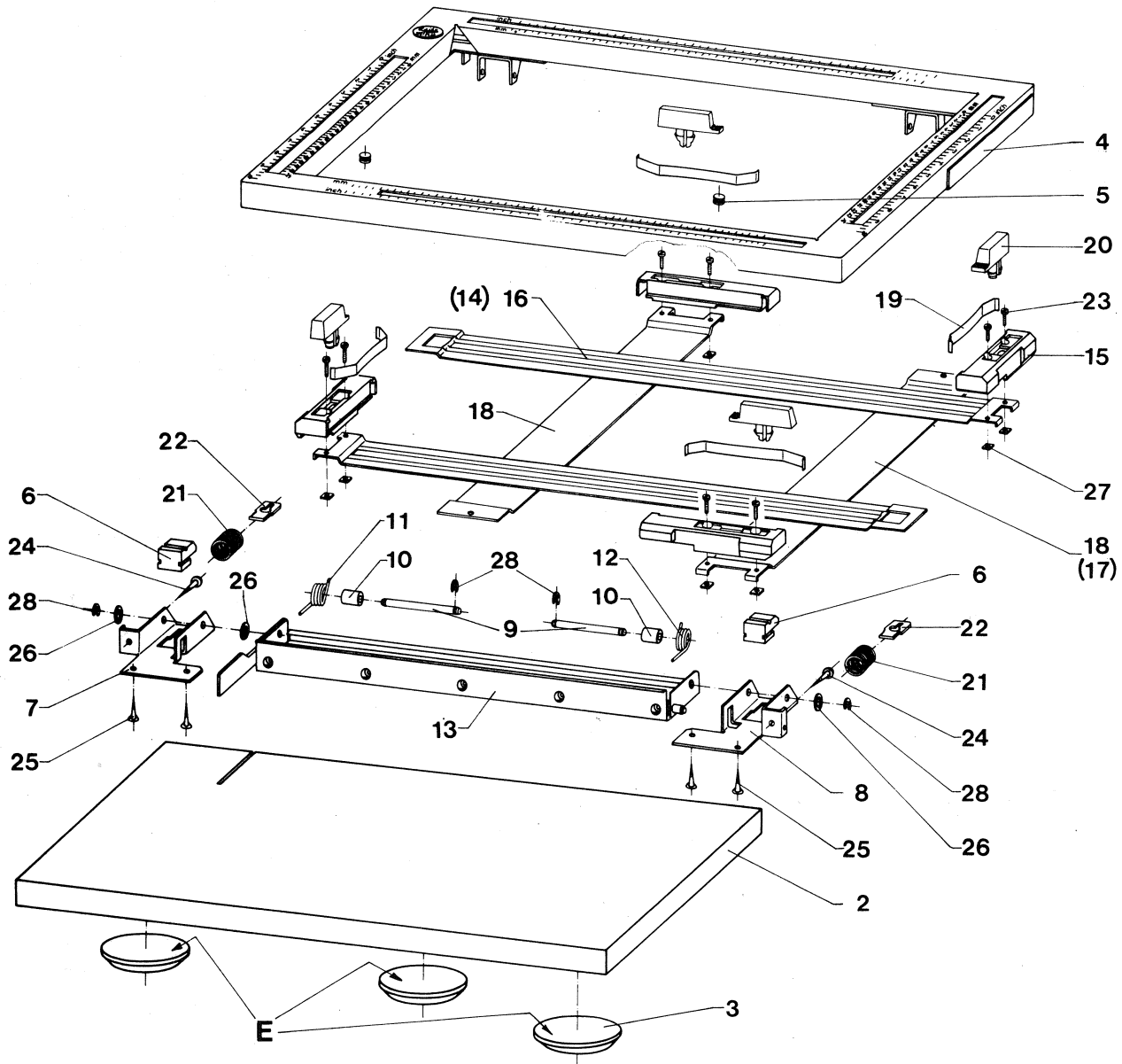
14.12. 1973

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	nicht mehr lieferbar no longer available	-		Metall-Vergrößerungsrahmen 18x24 cm	metal masking frame 8x10"
2	nicht mehr lieferbar no longer available	-		Grundplatte	base plate
3	042-233.001-008	17	1	Deckplatte	cover plate
4	042-233.001-009	15	1	Lagerplatte, rechts	bearing plate, right
5	042-233.001-010	15	1	Lagerplatte, links	bearing plate, left
6	042-233.001-013	16	1	Skalenleiste kurz, metrische Teilung	dividing ledge short, metric scale
7	042-233.001-014	16	1	Skalenleiste lang, metrische Teilung	dividing ledge long, metric scale
8	042-233.001-016	11	1	Auflageleiste rechts	resting ledge right
9	042-233.001-017	11	1	Auflageleiste links	resting ledge left
10	042-233.001-022	17	1	Auflageleiste kurz	stopping ledge short
11	042-233.001-029	21	1	Anschlagleiste lang	stopping ledge long
12	042-233.001-032	12	1	Feder	spring
13	042-233.001-033	9	1	Schafmiet	rivet
14	042-233.001-037	11	4	Ansatzschraube	shoulder screw
15	042-233.001-039	10	1	Torsionsfeder, rechts	torsion spring, right
16	042-233.001-040	10	1	Torsionsfeder, links	torsion spring, left
17	042-233.001-041	11	1	Torsionsfeder	torsion spring
18	042-233.001-047	33	1	Rahmen	frame
19	042-233.001-054	17	1	Winkelleiste	angled ledge
20	042-233.001-060	20	1	Führungsstück mit Maskenband	guide piece with masking strip
21	042-233.001-069	20	1	Führungsstück mit Maskenband	guide piece with masking strip
22	042-233.001-078	20	1	Führungsstück mit Maskenband lang, metrische Teilung	guide piece with masking strip long, metric scale

Zustand/state 1 17 588 Metall-Vergrößerungsrahmen 18x24 cm / 8x10" metal masking frame 17 594

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
23	042-233.001-087	20	1	Führungsstück mit Maskenband kurz metrische Teilung	guide piece with masking strip shorte, metric scale
24	042-233.001-095	9	4	Blattfeder	flat spring
25	042-233.001-096	9	2	Zwischenlage	intermediate piece
26	042-233.001-097	9	2	Zwischenlage	intermediate piece
27	042-233.001-098	10	2	Stift	pin
28	042-233.001-099	10	2	Stift	pin
29	042-233.001-104	11	1	Gelenkachse	hinge axle
30	042-233.001-105	9	2	Zwischenhülse	intermediate sleeve
31	042-233.002-007	16	1	Skalenleiste kurz, Zollteilung	dividing ledge short, inch scale
32	042-233.002-008	16	1	Skalenleiste lang, Zollteilung	dividing ledge long, inch scale
33	042-233.002-040	20	1	Führungsstück mit Maskenband lang Zollteilung	guide piece with masking strip long inch scale
34	042-233.002-047	20	1	Führungsstück mit Maskenband kurz Zollteilung	guide piece with masking strip short inch scale
35	700-472.200-000	6	2	Senkschraube	M 4 x 8 DIN 63 countersunk screw
36	700-475.220-000	6	4	Senkschraube	M 4 x 10 DIN 63 countersunk screw
37	703-752.220-000	6	3	Linsenschraube	M 3 x 2,5 DIN 923 oval head screw
38	704-507.220-000	1	7	Kerbnagel	1,4 x 6 DIN 1477 pin
39	704-782.220-000	1	1	Sicherungsscheibe	3,2 DIN 6799 c-clip
40	705-990.220-000	6	4	Linsenschraube	M 3 x 6 DIN 85 oval head screw

Vergrößerungsrahmen 24 x 30 / 10 x 12" masking frame



E = EC 880

Vergrößerungsrahmen 24 x 30 / 10 x 12" masking frame

ERNST LEITZ WETZLAR GMBH

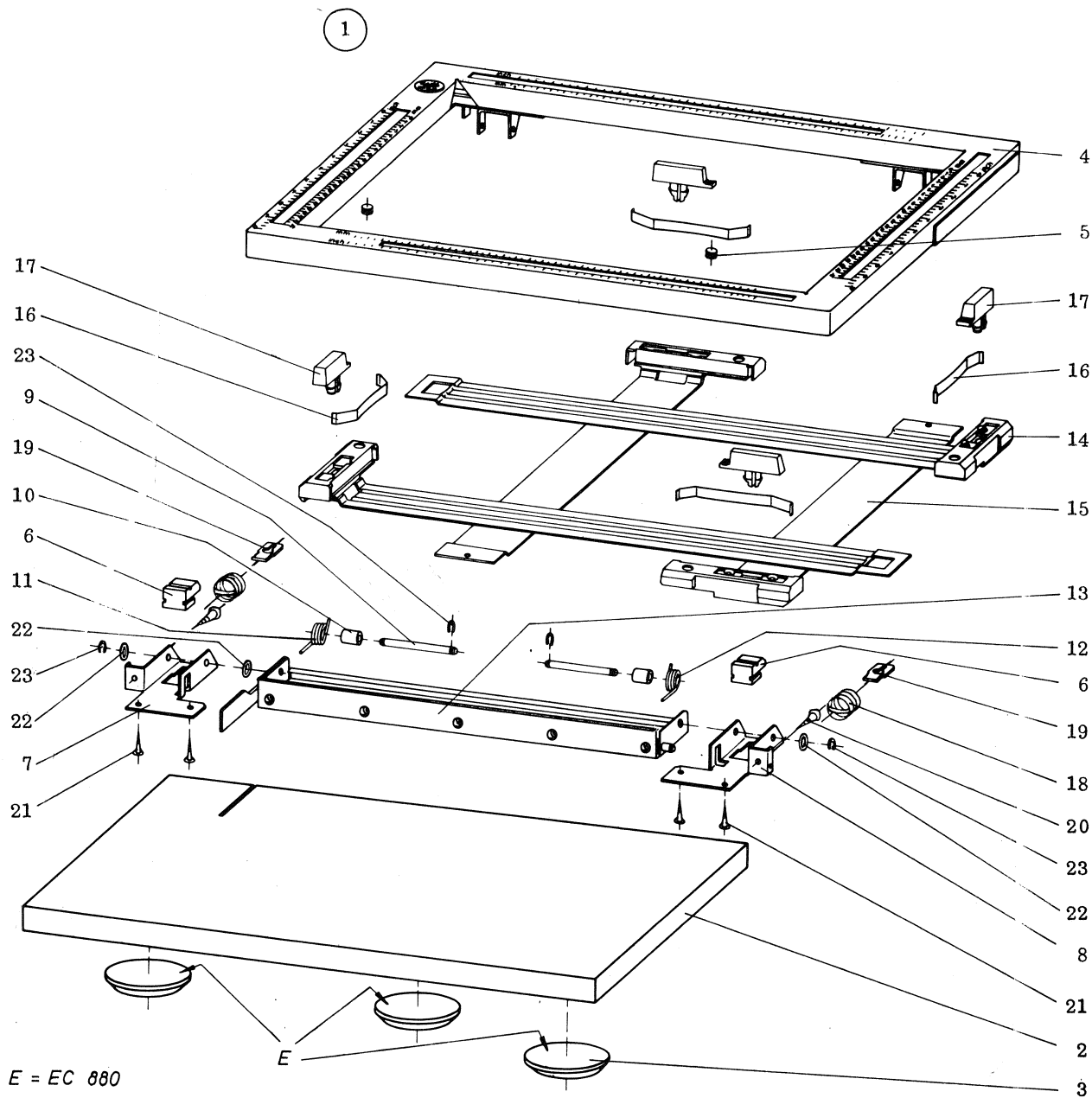
SERVICE INFORMATION

29.10.1977

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	17 584			Vergrößerungsrahmen, komplett mit allen auf diesem Blatt aufgeführten Teilen, siehe Gesamtkatalog	masking frame, complete with a ll parts listed on this page see general catalogue
2	045-200.001-004	32	1	Platte komplett einschließlich Position 3	plate complete position 3 inclusive
3	045-200.001-007	9	4	Gummipuffer	rubber puffer
4	045-200.001-020	41	1	Rahmen	frame
5	045-200.001-022	8	2	Anschlagknopf	stop
6	045-200.001-024	9	2	Anschlagstütze	stop support
7	045-200.001-026	16	1	Gelenkhalter, links	joint plate, left
8	045-200.001-027	16	1	Gelenkhalter, rechts	joint plate, right
9	045-200.001-032	9	2	Gelenkbolzen	joint bolt
10	045-200.001-033	6	2	Buchse	bush
11	045-200.001-035	6	1	Schenkelfeder, links	leg spring, left
12	045-200.001-036	6	1	Schenkelfeder, rechts	leg spring, right
13	045-200.001-039	16	1	Klemmblech	clamping plate
14	045-200.001-045	22	2	Gleitstück mit Maskenband, oben bestehend aus Pos. 15, 16, 23, 27	sliding piece with masking strip, upper consisting of pos. 15, 16, 23, 27
15	045-200.001-046	15	4	Gleitstück	sliding piece
16	045-200.001-047	22	2	Maskenband oben	masking strip upper
17	045-200.001-050	21	2	Gleitstück mit Maskenband unten bestehend aus Pos. 15, 18, 23, 27	sliding piece with masking strip, lower consisting of pos. 15, 18, 23, 27
18	045-200.001-052	21	2	Maskenband unten	masking strip lower
19	045-200.001-058	6	4	Gleitfeder	sliding spring
20	045-200.001-060	12	4	Griff	handle
21	045-200.001-065	8	2	Zugfeder	tension spring

Vergrößerungsrahmen 24 x 30 / 10 x 12" masking frame

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung		Description
22	045-200.001-066	8	2	Einschraubblech		threaded sheet
23	700-724.220-000	6	8	Schraube	M 3 x 12 DIN 84	screw
24	701-475.220-000	6	2	Halbrundholzschraube	4 x 30 DIN 96	oval head wood screw
25	701-629.220-000	6	4	Senkholzschraube	3 x 15 DIN 97	countersunk wood screw
26	702-137.220-000	2	3	Scheibe	5, 3 DIN 433	washer
27	702-752.220-000	5	8	Mutter	M 3 DIN 562	nut
28	704-784.220-000	1	4	Sicherungsschraube	3, 2 DIN 6799	c-clip



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14.12. 1973

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	17 584	-		Vergrößerungsrahmen, komplett mit allen auf diesem Blatt aufgeführten Teilen, siehe Gesamtkatalog	masking frame, complete, with all parts listed on this page see general catalogue
2	045-200.001-004	32	1	Platte, komplett einschließlich Position 3	plate, complete, position 3 inclusive
3	045-200.001-007	9	4	Gummipuffer	rubber buffer
4	045-200.001-020	41	1	Rahmen	frame
5	045-200.001-022	8	2	Anschlagknopf	stop
6	045-200.001-024	9	2	Anschlagstütze	stop support
7	045-200.001-026	16	1	Gelenkhalter, links	joint plate, left
8	045-200.001-027	16	1	Gelenkhalter, rechts	joint plate, right
9	045-200.001-032	9	2	Gelenkbolzen	joint bolt
10	045-200.001-033	6	2	Buchse	bush
11	045-200.001-035	6	1	Schenkelfeder, links	leg spring, left
12	045-200.001-036	6	1	Schenkelfeder, rechts	leg spring, right
13	045-200.001-039	16	1	Klemmblech	clamping plate
14	045-200.001-045	22	2	Gleitstück mit Maskenband, oben	sliding piece with masking strip, upper
15	045-200.001-050	21	2	Gleitstück mit Maskenband, unten	sliding piece with masking strip, lower
16	045-200.001-058	6	4	Gleitfeder	sliding spring
17	045-200.001-060	12	4	Griff	handle
18	045-200.001-065	8	2	Zugfeder	tension spring
19	045-200.001-066	8	2	Einschraublech	threaded sheet
20	701-475.210-000	6	2	Halbrundholzschraube	4 x 30 DIN 96 oval head wood screw
21	701-629.210-000	6	4	Senkholzschraube	3 x 15 DIN 97 countersunk wood screw

17.1

FOCOMAT IIc

Leitz
WETZLAR

Zustand/state 1

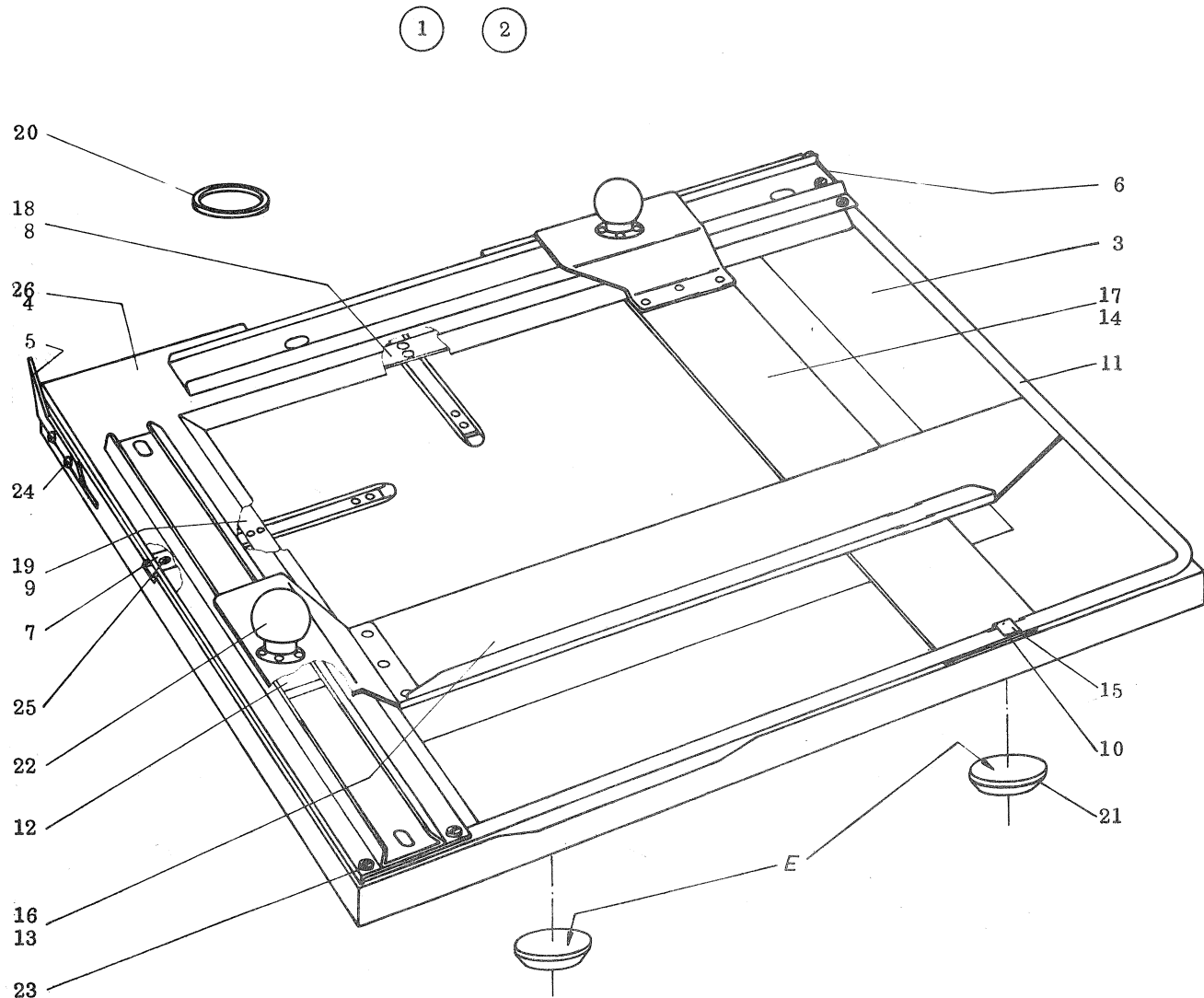
Vergrößerungsrahmen 24 x 30 / 10 x 12" masking frame

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung			Description
22	702-137.210-000	2	3	Scheibe	5, 3	DIN 433	washer
23	704-784.210-000	1	4	Sicherungsscheibe	3, 2	DIN 6799	c-clip

TECHNICAL SERVICE

KUNDENDIENST

14. 12. 1973



E = EC 880

Vergrößerungsrahmen 30x40 cm / 12x16" masking frame

Zustand / state 1

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung	Description
1	17 586	* -		Vergrößerungsrahmen 30 x 40 cm komplett, siehe Gesamtkatalog	masking frame 30 x 40 cm, complete see general catalogue
2	17 630	* -		Vergrößerungsrahmen 12 x 16 Zoll komplett, siehe Gesamtkatalog	masking frame 12 x 16 Zoll, complete see general catalogue
3	042-640.001-010	* -	1	Grundplatte, einschließlich Position 7 und 25	base plate, position 7 and 25 inclusive
4	042-640.001-012	50	1	Schwenkrahmen, einschließlich Posi- tion 13 und 14	swing frame, position 13 and 14 inclusive
5	042-640.001-026	18	1	Lagerplatte, links	bearing plate, left
6	042-640.001-033	18	1	Lagerplatte, rechts	bearing plate, right
7	042-640.001-050	22	2	Schwalbenschwanzführung	dovetail guide
8	042-640.001-058	22	1	Anschlag lang, metrische Teilung	stop long, metric scale
9	042-640.001-068	22	1	Anschlag kurz, metrische Teilung	stop short, metric scale
10	042-640.001-103	3	2	Niet	rivet
11	042-640.001-113	23	1	Schutzstange	protection bar
12	042-640.001-117	16	2	Klemmstück	clamping plate
13	042-640.001-133	29	1	Skalenblech lang, metrische Teilung einschließlich Position 12 und 22	masking strip long, metric scale position 12 and 22 inclusive
14	042-640.001-135	32	1	Skalenblech kurz, metrische Teilung einschließlich Position 12 und 22	masking strip short, metric scale position 12 and 22 inclusive
15	042-640.001-153	15	1	Bügel	guide angle
16	042-640.002-018	29	1	Skalenblech lang, Zollteilung einschließlich Position 12 und 22	masking strip long, inch scale position 12 and 22 inclusive
17	042-640.002-019	32	1	Skalenblech kurz, Zollteilung einschließlich Position 12 und 22	masking strip short, inch scale position 12 and 22 inclusive
18	042-640.002-040	22	1	Anschlag lang, Zollteilung	stop long, inch scale

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30. 3. 1977

Zustand/state 1

Vergrößerungsrahmen 30x40 cm / 12x16" masking frame

Nr. No.	Bestell-Nr. Part-No.	PG	Stück Nos.	Benennung		Description
19	042-640. 002-049	22	1	Anschlag kurz, Zollteilung		stop short, inch scale
20	042-640. 004-000	11	1	Zwischenring für Säulendurchmesser 40 mm		distanc ring for column 40 dia
21	045-200. 001-007	9	5	Gummipuffer		rubber buffer
22	042-640. 001-160	16	2	Kugelschraube		ball shape screw
23	701-053. 233-000	6	4	Linsenschraube	M 3, 5 x 6	DIN 85 oval head screw
24	701-458. 220-000	6	4	Halbrundholzschraube	3, 5 x 20	DIN 96 oval head wood screw
25	701-594. 220-000	4	2	Senkholzschraube	2, 4 x 10	DIN 97 countersung wood screw
26	042-640. 002-010	50	1	Schwenkrahmen, einschließlich Position 16 und 17		swing frame, position 16 and 17 inclusive

TECHNICAL SERVICE

KUNDENDIENST

30. 3. 1977

* Vergrößerungsrahmen und Grundplatten für Schwalbenschwanzklemmung sind nicht mehr lieferbar.

* Masking frame and base plates for dovetail clamping are no longer available.

Wartungsanleitung	maintenance instruction	75.1
		76.1
		77.1
		78.1
		79.1
		80.1
		81.1
Justieranleitung	alignment instruction	83.1
		84.1
		85.1
		86.1
		87.1
Lampenzentrierung	lamp centering	88.1
Umbau zur Verwendung des 100 mm Objektives	conversion for the use the 100 mm objective	101.1
		102.1
		103.1
Montage und Anwendung der Zusatzeinstellvorrichtung 17 861	mounting and use of the supplementary setting gauge 17 861	105.1
		106.1
		107.1

Maintenance of the FOCOMAT IIc

Enlargers in commercial or professional use should undergo **regular maintenance** to maintain their mechanical and optical precision, easy movement and electrical safety.

The repair of every instrument should be followed by a complete inspection and adjustment corresponding to the maintenance work listed below.

The automatic focusing mechanism should be re-adjusted only **after** a complete inspection of the instrument has been carried out.

Maintenance work on the FOCOMAT IIc enlarger comprises the following:

- 1 Checking the instrument to identify defective components and the extent of any necessary repairs.
- 2 Cleaning, lubrication and adjustment, as well as any further necessary repairs
- 3 Adjustment of the automatic focusing mechanism and lamp centration

The special tools including the adjustment device required for maintenance and repair see page 201.1

As a first step, please note:

If non-Leitz accessories are used with the FOCOMAT IIc the instrument should be switched on by the owner or user, who should remove the accessories before the start of maintenance. For reasons of safety the upper lamp housing must

be removed from the instrument only **after** the mains plug or the plug of the lamp cable has been disconnected from its socket.

The position of the height adjustment ring must be checked before work is begun and left in the same position after the end of maintenance. If, however, the column clamping piece has not been placed at the correct level for the paper level of the masking frame used, the user of the instrument must have his attention drawn to this error. It must be pointed out to him that maintenance of the correct clamping level is essential to the proper functioning of the automatic focusing mechanism.

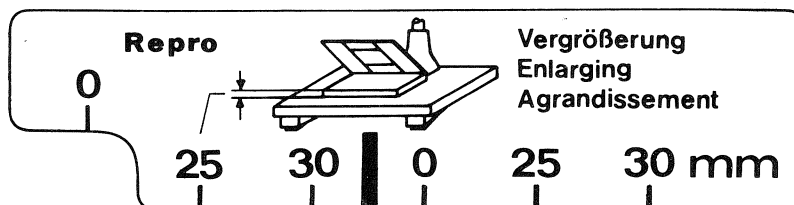
Of the 6 different settings of the height adjustment ring only the three positions to the right of the centre line are designed for enlarging. The three settings to the left of the centre line are required only with copying with the copying darkslide 17 880.

Paper on the baseboard = Ring position : 0

For all masking frames,
25 mm high = Ring position : 25

For masking frames
17 586 and 17 630 = Ring position : 30

Masking frames of different paper level = Ring position : 0
plus intermediate ring = paper level



1 Checking and dismantling

The FOCOMAT IIc must be dismantled in the order given below. At the same time the components and functional units should be checked for any replacements or repairs needed.

The following points should be noted during checking:

- | | | |
|-----|-----------------------------|---|
| 1.1 | Mains plug | Damage to cable and plug and earth connection |
| 1.2 | Upper lamp hood | 150 W (250) opal lamp : excessive blackening, heat- resistant cable, cable insulation in the lamp mount, damage to lamp mount or plug |
| 1.3 | Condenser | Correct installation, damage, formation of surface film, missing screws |
| 1.4 | Film holder | Pressure plates : attachment, damage, scratches, missing screws
Film clamping device : attachment, function
Bottom part of film holder : wear of the guide legs and stop blocks
Eccentric lever : wear of the cam surface, attachment
Negative masks : right-way-round insertion, deformation |
| 1.5 | Lenses | External and internal state of cleanliness, damaged lens surfaces, diaphragm action, loose elements, wrongly opened. |
| 1.6 | Red filter | Attachment, damage |
| 1.7 | Bottom part of lamp housing | Attachment, screws, spring pressure, guide bush for filter slide
wear and tear of the two front edges of the carrier caused by the eccentric lever of the film holder
Filter slide : ease of movement, stop
Light tightness : spring clamp, seating |
| 1.8 | Film stops | Attachment, function, engagement |
| 1.9 | Film troughs | Damaged surface, attachment, deformation |

1.10	Lens carrier	Changing slide : easy movement, engagement, holding spring Helical focusing mounts : moving too easily, wear Missing or damaged catches, catch springs, or screws
1.11	Cable release	Attachment, damage, function
1.12	Cams	Attachment, cam roller movement, damage
1.13	Clamping	Clamping plate, clamping bolt, and hemispherical knob : wear of the guide surfaces or threads, attachment Pointer : attachment and adjustment
1.14	Parallelogram	Ease of movement, lateral play, noise caused by traction springs Vertical adjustment on the column : ease of movement, clamping, missing screws
1.15	Enlargement indicator	Glow lamp, electrical connection : damage, attachment, function of pointer Unscrew screws 2.3/17 and lift the parallelogram from the column
1.16	Baseboard and column	Electrical installation including safety plug connections, safety guard, switch function, loose or brittle rubber feet, mask storage box, attachment and function of the clamping device column attachment

At the conclusion of these tests the owner of the instrument should be informed about

the state of the instrument	necessary repairs required in addition to maintenance
difficulty of movement, wrong adjustment, wear and tear owing to	new components required - because of wear and tear to improve the operational standards
- normal use	
- age, humidity	accessories available - to simplify operations to enlarge the range of applications
- wrong handling	
- lack of, or wrong maintenance	newly included in the production programme

Repair Instructions

TECHNICAL SERVICE

KUNDENDIENST

19. 7. 1974

- 2 Cleaning, lubrication, and adjustment of the instrument
- 2.1 Lenses Blow away dust and clean the external lens surface
- 2.2 Condenser Unscrew screws, dismantle, clean lenses and reassemble. The bracket must be mounted parallel to the bevels
- 2.3 Film holder Replace damaged pressure plates or eccentric lever, tighten all fixtures. Apply lubricant 410 to the underside of the guide surfaces.
- 2.4 Baseboard and column Check electrical connections and function of the switches and tighten all screws
Check the clamping for the masking frame, tighten the fixing screw of the dovetail bar
Check the attachment of the column socket, clean the column and lightly apply lubricant 410 to it. The nut must move freely
- 2.5 Parallelogram Push the clamping piece with parallelogram onto the column and connect the nut with the clamping piece with the 3 shoulder screws 2.3/17
Set the height adjustment ring 2.3/4 at position 0-enlargement (to the right of the centre line), turn the nut downwards and place it on the height adjustment ring. Check easy movement and axial play of the parallelogram. Lubricate bearing points and spring suspensions. Renew bolt 4.1/21 if the guide surfaces are ground down by the clamping plate 4.1/23. Clean and lubricate all surfaces and threads.

2.6 Lens carrier

Check the roller guides for free movement, clean them and apply lubricant 602

Remove the catches from both lens focusing mounts, unscrew the helical collars and clean all the threads. Apply lubricant 340 to the threads and screw in the helical collars together with the springs 5.1/2

Thread engagement : recess of the inner helical collar.

In the 100 mm helical mount : left rear

60 mm helical mount : right rear

The helical focusing mounts must be screwed positively (not too freely). Insert the catches with leaf springs. Tighten screws and check the engagement of the catch springs.

Screw the lenses in position

Attach the red filter, adjust working level for the 100 mm lens.

Screw cable release with clamping nipple and protective collar in and check its function during repeated lens change. Check the lift of the changing slide. The 60 mm cam roller must be pushed out sufficiently far (adjustable with screw 5.1/36) and must slide back automatically during changeover.

Tighten all the 22 fixing screws on the stage plate. Bend the film troughs slightly upwards and check the catch springs 7.1/6 for even alignment. If the stop surfaces are damaged the catch 7.1/13 and 7.1/14 must be replaced.

Check the attachment of the guide rods 7.1/9 and 7.1/10.

No shiny edges or areas must be present in the interior of the bellows and the lens carrier (shiny areas can be covered with matt varnish after cleaning). A velvet strip must be inserted in the 100 mm tube.

2.7 Lamp housing bottom part

Tighten all the fixing screws and check the evenness of alignment of the two leaf springs 10.1/9. The ends of the springs must rest on the cast body under pressure .

Tighten the securing ring 10.1/2 with key 042-506.001-015 W 1

Push the lamp housing carrier onto the guide rods as far as it will go and clamp in position.

Correctly insert the condenser, the carrying bracket must point towards the column.

Insert the filter slide, readjust the guide rod until the slide moves freely.

Insert the film holder as far as it will go, it must positively engage. When the rod with the two eccentric levers is raised both pressure plates must dis engage across the entire surface and provide sufficient gap for film insertion. When the film holder is closed the pressure of the discs must be identical on all corners (check with film).

2.8 Upper lamp housing

If the insulation of the lamp cable is damaged a new heat- resistant silicon cable 12.1/11 must be fitted. If the lamp mount is damaged a complete lamp installation 12.1/10 must be built in. In the absence of pressure springs 12.1/13 and spring plate 12.1/14, 3 of each should be built in.

Tighten the connecting cap 12.1/3 and check the movement of the centring screws.

Place lamp housing in position, check the clamping seating, screw in and precentre the lamp.

Adjustment instructions for the automatic focusing mechanism and lamp centration

The setting method used by us for the adjustment of the automatic focusing mechanism permits a precise determination of the focusing plane. Accordingly the most favourable setting can be obtained for each type of lens, and corrections called for by individual properties of the lenses can be allowed for during adjustment.

Sequence of operations

Before adjustment is begun the enlarger must be checked for perfect condition of all mechanical, optical and electrical components, connections and functions. Without this preliminary work adjustment must not be attempted. In addition, the focal length indication of lenses and cams must match.

The column clamping piece with parallelogram arm on the column must be screwed slightly upwards and the height adjustment ring set at the enlargement 0" (to the right of the centre line). Place the adapter 042-614.000-000 W 2 on the height adjustment ring and turn the nut with the column clamping piece down until it rests on the adapter. Tighten the clamping mechanism.

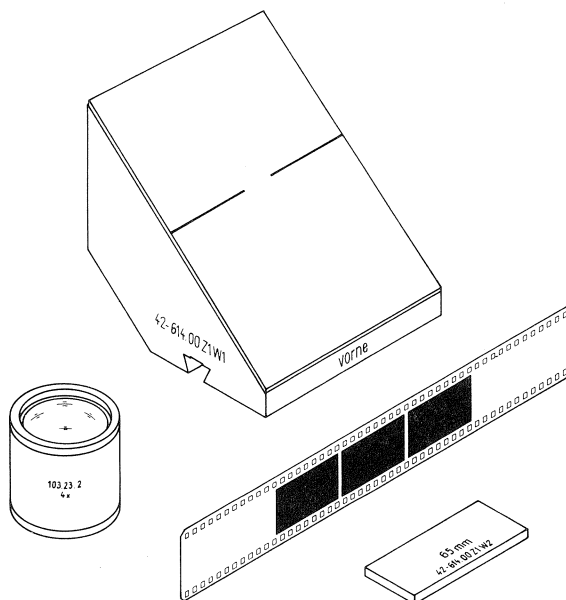
Adjustment of the 60 mm lens

Place the adjustment wedge 042-614.000-000 W 1 on the base-board of the enlarger so that the white focusing area points to the observer with the engraving "vorne" on the lower edge. Move the 60 mm lens into the optical path and insert the 24 x 36 mm negative mask 17 888 in the film holder

Tools required

Adjustment wedge	042-614.000-000 W 1
Adapter	042-614.000-000 W 2
Test negative	042-614.000-000 W 4
Test negative	042-614.000-000 W 5
4 x magnifier	103.23.2

In addition we recommend the purchase of a commercial reading magnifier about 100 mm dia.

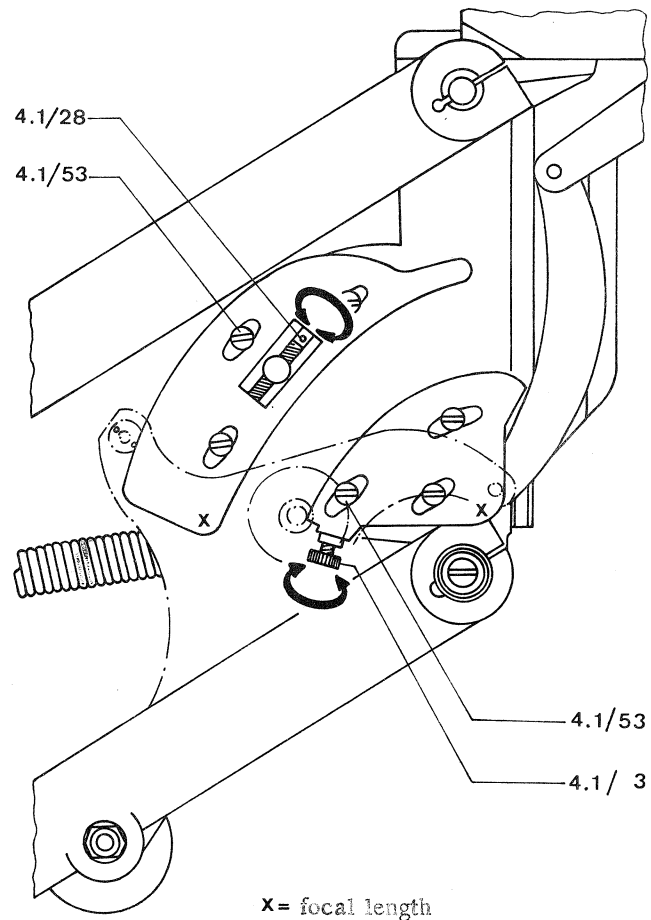


Insert the test negative strip 042-614.000-000 W4 in the film holder and align the centre negative in the window. The lettering must appear right-way-round in projection.

The adjustment of the automatic focusing mechanism is carried out at 2 focusing planes for both lenses. In the upper parallelogram setting the optimum sharpness is determined by rotation of the lens setting ring of the helical focusing mount. This is followed by insertion of the cam in the bottom parallelogram setting for this. These setting procedures must be repeated several times and the cam movement checked at 2 intermediate positions. The required procedure is as follows.

The adjustment is carried out at full aperture

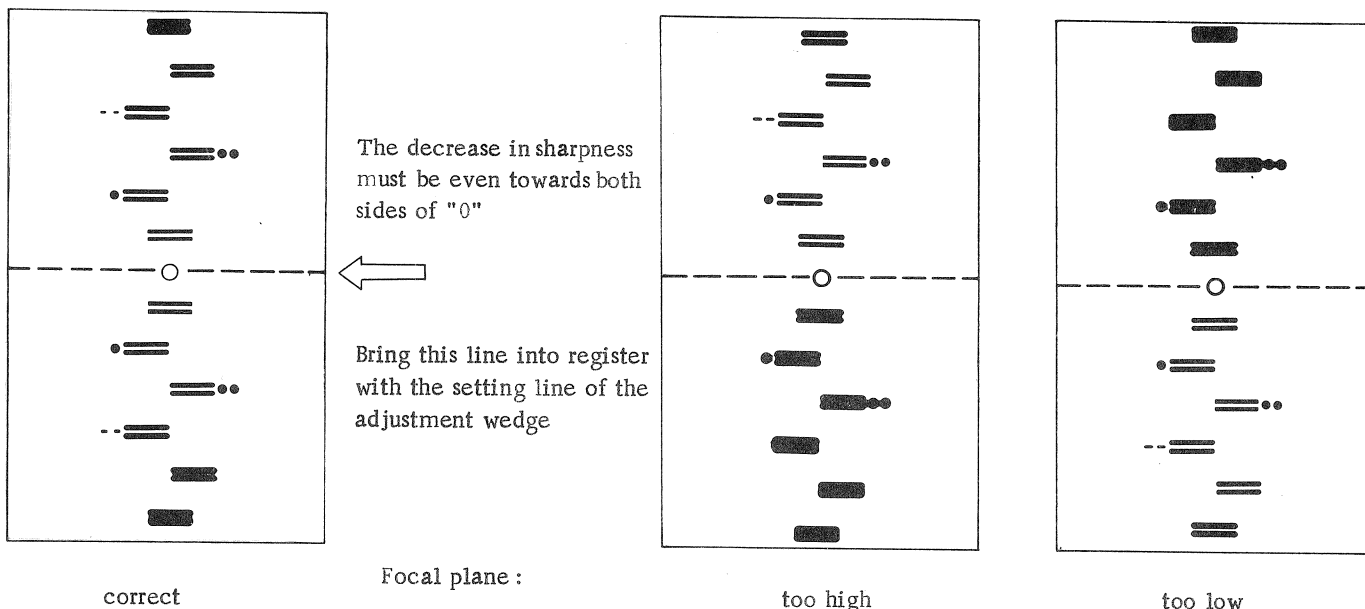
Move the lamp housing into the upper parallelogram position, adjust the adjustment wedge, simultaneously focusing the lens, until the setting lines of the test negative and the adjustment wedge coincide. When the test image is assessed on the oblique surface of the adjustment wedge ensure that the sharpness of the pairs of associated double lines evenly decreases towards the top and bottom starting from "0". Check with the reading glass. If maximum sharpness is at too high or too low a level, the lens setting ring must be adjusted, and fixed with the catch in its optimum position. The lamp housing must now be moved downwards (about 2.5x enlargement) and the adjustment wedge adjusted until the setting lines again coincide. After the 3 cam fixing screws 4.1/53 are released, the cam can be adjusted with the knurled screw 4.1/3 until the associated pairs of double lines show the same resolution. Check with the 4x magnifier. Now retighten the cam fixing screws.



x = focal length

Repair Instructions

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19.7.1974

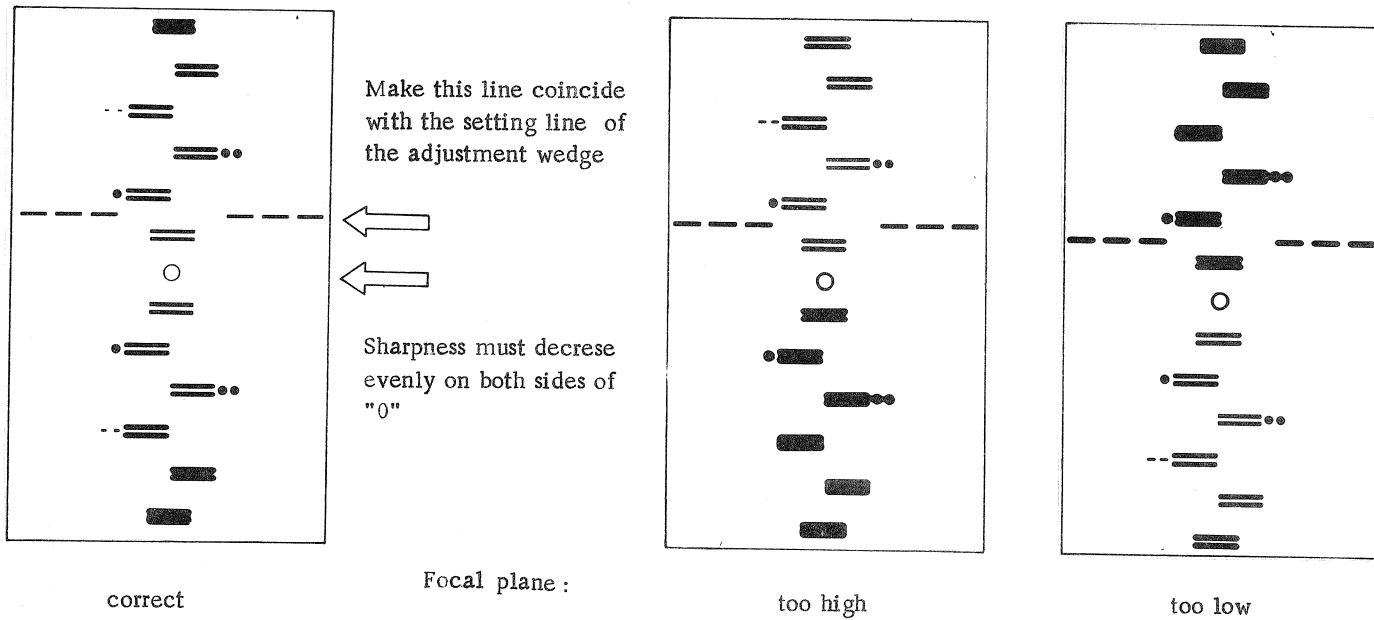
Focusing must now be checked repeatedly in the upper and lower parallelogram position and any changes corrected. Now the cam movement must be checked. To do this the focusing must be checked at 2 intermediate positions at about 5 x and 9 x enlargement. If the deviation exceeds more than 1 pair of lines, the cam roller 3.1/15 must be replaced. Several cam rollers, diameters from 18.4 to 19.8 mm at 0.2 mm intervals are available. Minor differences can be compensated by slight displacement in the upper or lower setting range.

Finally, the position of the focusing plane must be checked when the lens is stopped down to the working aperture of f/8.

Adjustment of the 100 mm lens

Move the 100 mm lens into the optical path, open the diaphragm and insert the test negative strip 042-614.000-000 W 5 in the film holder. Align the centre negative in the window so that the lettering appears right-way-round in projection.

Carry out focusing in the upper parallelogram position by rotating the lens setting ring. Ensure that the setting line displaced in the negative upwards from "0-centre" is made to coincide with the setting line of the adjustment wedge. Assessment of maximum sharpness must, however, be carried out at "0-centre" instead of at the displaced line.



The sharpness of the pairs of double lines arranged above and below "0-centre" must decrease evenly towards both ends.

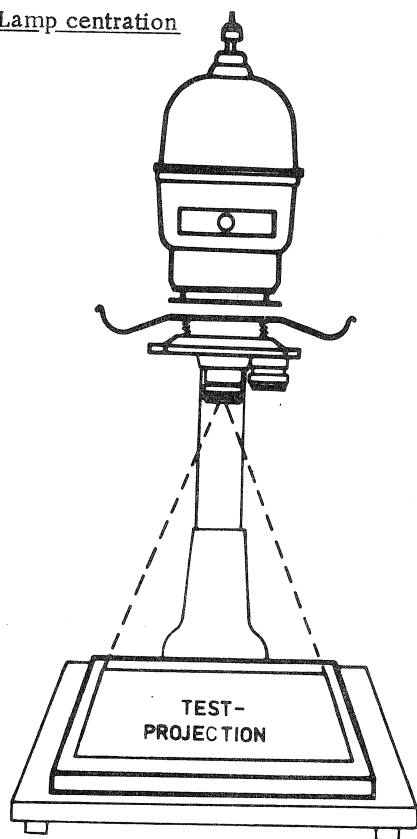
Now move the lamp housing downwards to about 1 x enlargement and adjust the adjustment wedge until the setting lines again coincide. To adjust the cam, release the 3 fixing screws 4.1/53 and adjust the grub screw 4.1/28 with the cylindrical pin 705-523.000-000. In this position, too, the sharpness of the pairs of double lines must decrease evenly, starting from "0-centre".

To check the cam movement, image sharpness is checked at the intermediate positions of about 3x and 5x enlargement. If the deviation exceeds more than one pair of lines the cam roller 3.1/15 must be replaced. Several cam rollers, diameters from 18.4 to 19.8 mm at 0.2 mm intervals are available. Minor differences can be compensated by slight displacement in the upper or lower focusing range.

For the subsequent control of the lateral course of the plane of sharpness the 24 x 36 mm negative mask must be withdrawn from the film holder until all 3 negatives of the test film are visible on the projection screen. For the lateral test images the setting ring of the adjustment wedge is not aligned with the upwards displaced, setting line of the test negative but to "0-centre". During observation at full aperture the plane of sharpness must necessarily be higher for the lateral test negatives. The lens should therefore be stopped down to f/8 and the image assessed only in this position. At least 2 pairs of lines below the "0-centre" must be perfectly sharp.

After the completion of the adjustment the fixing screws of the catches and cams must once again be tightened. The test negative and the adapter must be removed from the instrument. The lenses must be stopped down to the working aperture (f/8). The column clamping piece should be adjusted to the height, required for the masking frame used.

Lamp centration

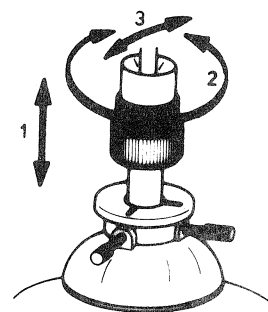


Adjusting the enlargement indicator

Check the opal lamp: use only 150 W (250 W) and renew if it is badly blackened. Insert the film holder without negative and without negative mask, move the 100 mm lens into the optical path and open the lens aperture.

Place a sheet of paper (about A 4) on the focusing plane. To fill the format with the projected image the enlarger head must be raised or lowered into the required position.

Observing the illuminated field on the printing surface first adjust the lamp rod vertically until maximum general illumination has been reached. The shadow caused by the pattern of the lamp filament is now removed from the field by rotation and adjustment of the lamp rod in the directions of the foot of the column. In this position the lamp rod is fixed with the 3 centring screws.



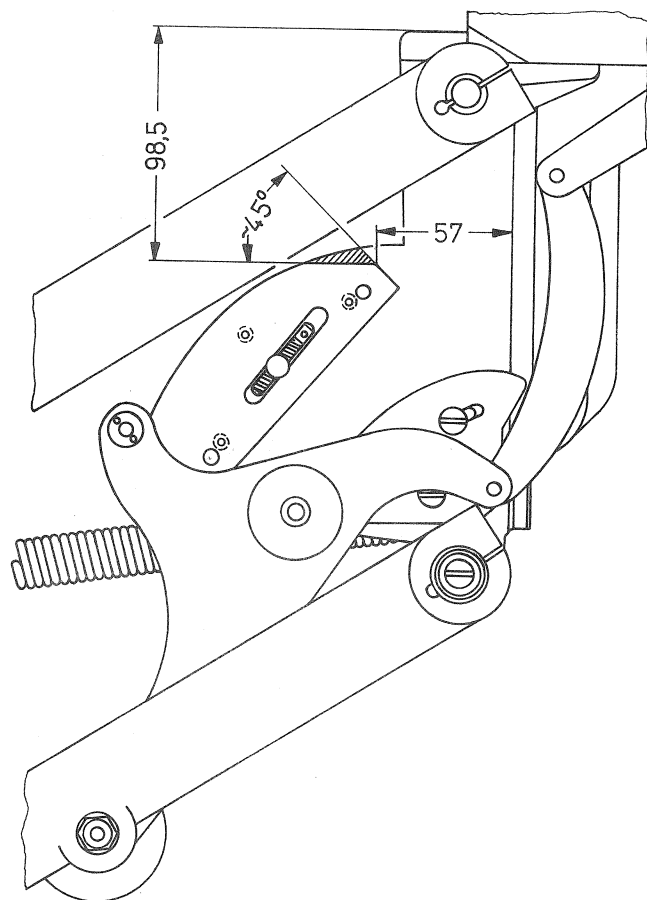
The illumination is controlled, by assessment of the illuminated projected area when the lens is stopped down to the working aperture $f/8$. A photographic test can be carried out by exposure of a sheet of enlarging paper of hard gradation.

Adjustment is carried out with the test negative 042-614.000-000 W 4 in position. Switch on the illumination, move the 60 mm lens into the optical path and vertically adjust the parallelogram until the projected measuring distance (1 cm) measures 50 mm on the scale of the masking frame. Release the screws, set the indicator plate at the indicator line 5 of the scale and retighten the screws.

Conversion for the use of the 100 mm lens

The FOCOMAT IIc enlargers produced from 1956 to 1959 were, in addition to the 60 mm FOCOTAR f/4.5 lens, fitted with the DQCOO 95 mm FOCOTAR f/4.5 lens, see spare parts list, page 6.1. From 1960 onwards the 100 mm V-Elmar f/4.5 lens has been incorporated.

The 95 mm FOCOTAR f/4.5 lens is no longer available. As a replacement, the 100 mm lens, available at the moment, can be built into enlargers fitted with the former lens. This necessitates the remachining for the roller action on the cast flange of the cam mount and the exchange of the 95 mm cam and the enlargement scales.



The following parts are required

100 mm FOCOTAR II 5 5,6/lens	040-252.001-000
Cam for the 100 mm lens	042-614.005-214
Scale	042-614.005-178
Scale for the enlargement indicator	042-614.016-050

Sequence of operations

Exchanging the cam

Move the enlarger head with parallelogram upwards, remove the cam fixing screws 4.1/53. File the cast on the upper end of the cam of the flange area so that with the 100 mm cam the movement of the roller is no longer obstructed. See hatched area in the illustration on the left. During the test the cam must be pushed completely to the rear and the enlarger head with parallelogram must be moved throughout its movement range. The cam roller must not touch the cast flange during its movement over the cam.

Exchanging the enlargement scale

The complete enlargement scale of the 95 mm lens (6 cm/9.5 cm) must be replaced by the scale 4.1/20 (6 cm/10 cm). The scale is mounted with the 4 screws 4.1/36.

After the scale has been mounted check the function of the knurled knob 2. For giant enlargements or corrections of converging verticals the automatic focusing mechanism can be disengaged with it and the lens carrier held engaged in a higher operating position.

For normal enlarging the knurled knob 2 is mounted on pin 1 in its pulled-out position. The catch bolt must not touch the lens carrier (see Fig. 1)

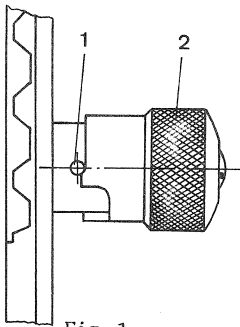


Fig. 1

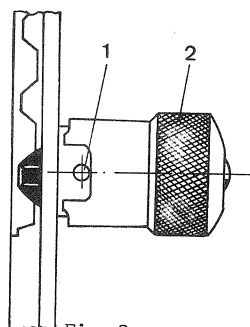


Fig. 2

To disengage the automatic focusing mechanism the knurled knob 2 is turned and slightly raised until the pin 1 moves into the recess of the knurled knob. The catch bolt must then fully engage in the required groove (see Fig. 2) of the lens carrier.

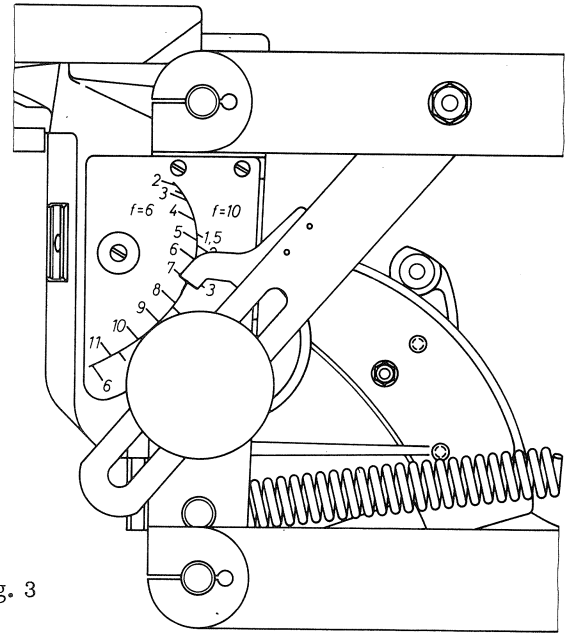
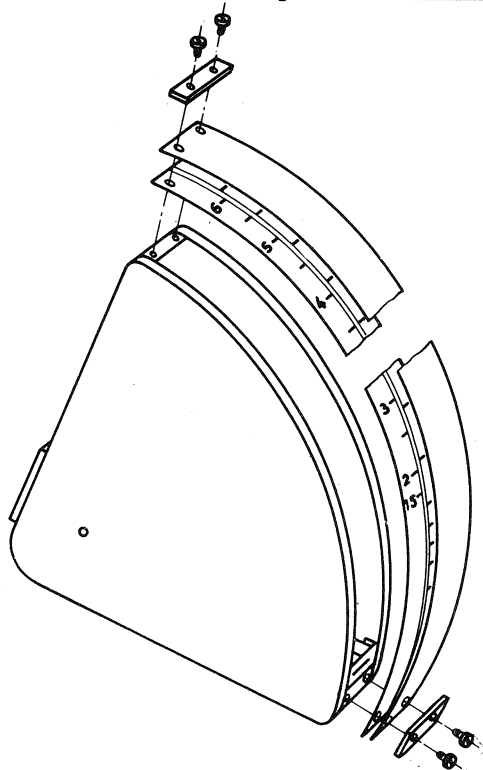


Fig. 3

The enlargement indicator is adjusted with the test negative for the 60 mm FOCOTAR f/4.5 lens (042-614.000-000 W4). This displays a measuring distance "1 cm".

After the lamp has been switched on the test negative must be inserted right-way-round in the film holder and aligned. Vertically adjust the enlarger head with the parallelogram until the projected measuring distance "1 cm" measures 70 mm on the scale of the masking frame. Set the fixing screws of the pointer at the indicator line 7 of the 6 cm scale and tighten the screws.

Exchanging the scale in the enlargement indicator 17 862



Remove the enlargement indicator from the FOCOMAT IIc. Now **unscrew** the fixing screws of the upper and lower holding plate. Lift off the cover plate and the 6 cm/9.5 cm scale underneath.

The 6 cm/10 cm scale is mounted in the reverse order. Scale and coverplate must be a smooth fit.

Check the reading of the enlargement for agreement with the instrument scale.

After completion of the conversion all the functions of the FOCOMAT IIc must be checked and the automatic focusing mechanism adjusted. See the Maintenance Instructions page 75.1 to 86.1. When the cam movement is adjusted for the automatic focusing mechanism it may be necessary to exchange the existing cam roller of the instrument.

Assembly and use of the additional focusing device

The following parts are required :

1 Additional focusing device	17 861	15.1/1
1 Adapter ring	16 615	
1 Adapter ring	16 617	
in addition		
1 Catch	042-614.005-271	5.1/28
1 Leaf spring	042-484.003-063	5.1/1
1 Screw	701-005.213-000	5.1/40

Tools required :

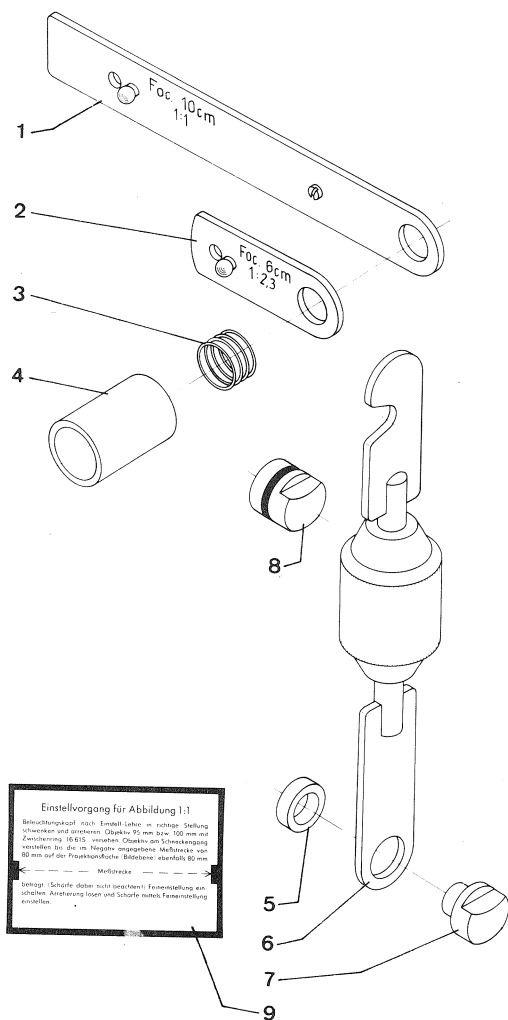
Fixed spanner S W 13 and S W 14

Sequence of operations

Unscrew the handle 3.1/24. This frees a screw and washer with which the assembly parts 1-4 are fixed in the same location in the sequence shown. (The deep side of the bore of part 4 must point outwards)

Remove the hexagon nut from the right-hand lower parallelogram arm and screw on parts 5-7 in the sequence shown.

Exchange the hexagon nut for the nut (8) on the right-hand upper parallelogram arm.



Setting the 1 : 1 reproduction ratio

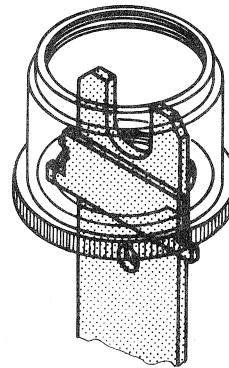
- 1 Insert the test negative (9) right way round.
- 2 Unscrew the 100 mm lens, fit it with the adapter ring, screw it back and open the diaphragm.
- 3 Unlock the spacing bar (1) and move it downwards with the parallelogram until it vertically touches the printing area. Tighten clamping grip 4.1/33 and return the spacing bar to its original position.
- 4 Adjust the helical focusing mount tube until the measuring distance projected by the test negative (9) measures 80 mm on the picture area (read off the scale strip of the masking frame).
- 5 Move the fine adjustment upwards into the nut (8) (if necessary turn the knurled screw until the milled recess engages).
Release clamping grip 4.1/33.
- 6 Focus the image by rotating the knurled nut on the fine adjustment.
Stop lens down to f/11.

Once the determined helical focusing mount setting is fixed with a catch, the setting procedure will be reduced to the following steps:

- 1 Unscrew the 100 mm lens, attach the adapter ring 16 615, replace the lens, open diaphragm and set the helical focusing mount at the 1 : 1 catch.
- 2 Move the parallelogram downwards until, the fine focusing adjustment engages in the knob.

After completion of the 1 : 1 adjustment

- 1 Remove the fine focusing adjustment to the rear.
- 2 Unscrew lens and adapter ring, replace the lens without adapter ring and stop down to f/8. Should the adapter, ring seize, it can be turned out with key 042-614.014-005. See illustration.
Set the helical focusing mount at the normal catch.



Setting 1:2.3 (reduction, e.g. from 6 x 9 cm to 24 x 36 mm)

- 1 Insert the preparation negative
- 2 Unscrew and remove the 100 mm lens.
- 3 Unscrew the 60 mm lens and screw it, together with the adapter ring 16 617, into the 100 mm helical focusing mount collar.
- 4 Move the height adjustment ring into the "0" position and turn the column clamping piece with nut downwards as far as it will go.
- 5 Unlock the spacing bar (2) and move it downwards with the parallelogram until the bar touches the printing surface vertically. Tighten the clamping grip.
- 6 Carry out focusing by turning the rotating focusing mount. Stop lens down to f/11.

After completion of reductions

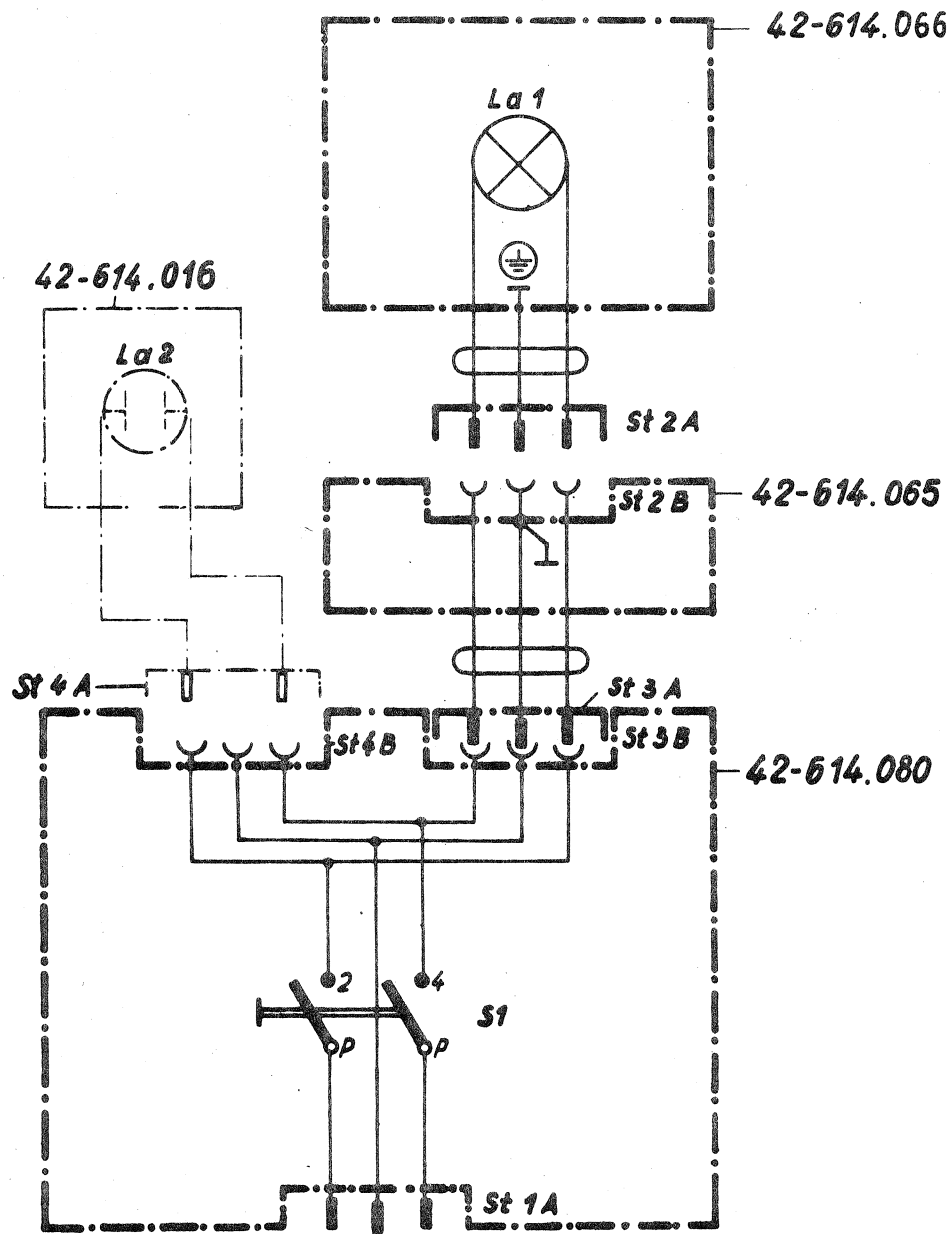
- 1 Move the parallelogram upwards and the g height adjustment ring into the setting required for the masking frame used.
- 2 Unscrew the 60 mm lens with adapter ring, screw in both lenses, stop down to f/8 and set the helical focusing mounts at the normal catches.

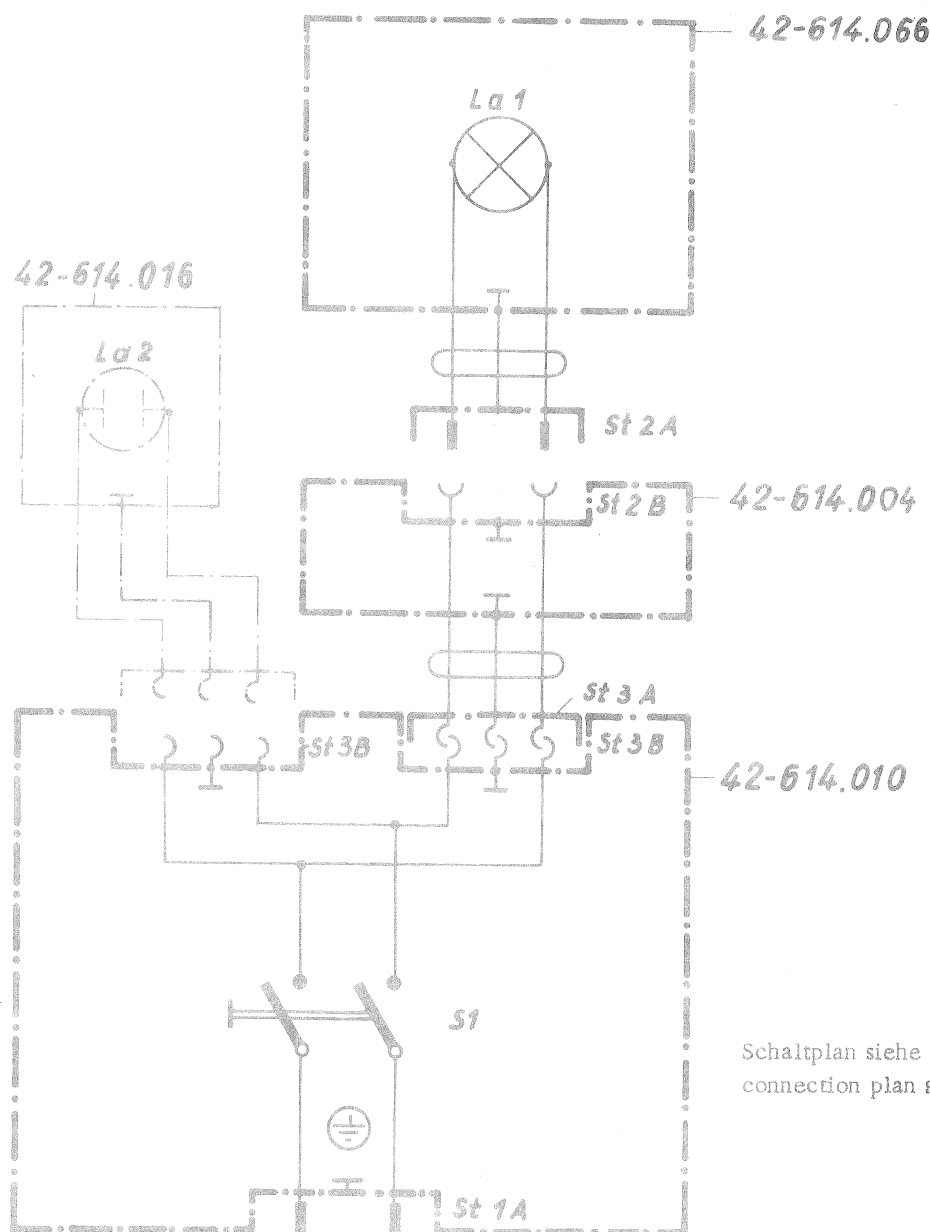
Normalschaltung	mit Steckverbindungen und 2-poliger Einschaltung	standard circuit	with connections and and two-pole switch	_____ 151.4
Normalschaltung	mit Klemmleisten-Installation und 2-poliger Einschaltung	standard circuit	with clamping ledge installation and two-pole switch	_____ 151.3
Normalschaltung	mit Klemmleisten-Installation und 2-poliger Einschaltung	standard circuit	with clamping ledge installation and two-pole switch	_____ 151.2
Normalschaltung	mit Klemmleisten-Installation 1-poliger Umschaltung	standard circuit	with clamping ledge installation and single-pole switch-over	_____ 151.1
Spezialschaltung	mit Spannungskonstanthalter Klemmleisten-Installation und 2-poliger Ein- und Umschaltung	special circuit	with voltage stabilizer clamping ledge installation and two-pole switch on and switch-over	_____ 152.2
Spezialschaltung	mit Spannungskonstanthalter Klemmleisten-Installation und 1-poliger Umschaltung	special circuit	with voltage stabilizer ledge installation and single-pole switch-over	_____ 152.1
Spezialschaltung	mit Sparschaltgerät, Klemmleisten-Installation und 2-poliger Ein- und Um- schaltung	special circuit	with economy power supply, clamping ledge installation and two-pole switch on and switch-over	_____ 153.2
Spezialschaltung	mit Sparschaltgerät, Klemmleisten-Installation und 1-poliger Umschaltung	special circuit	with economy power supply, clamping ledge installation and single-pole switch-over	_____ 153.1

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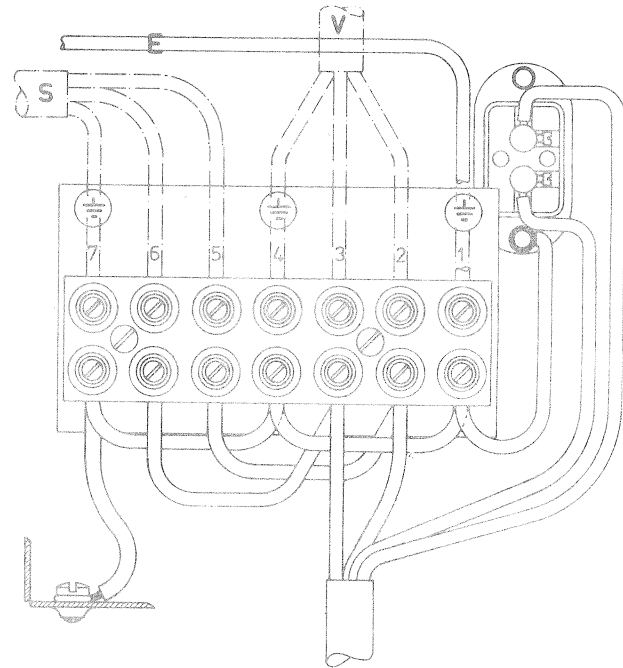
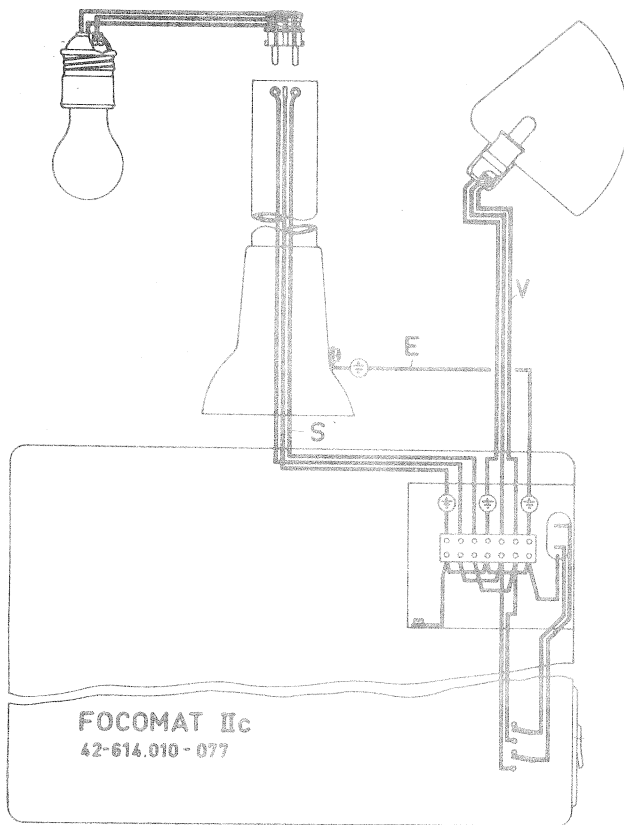
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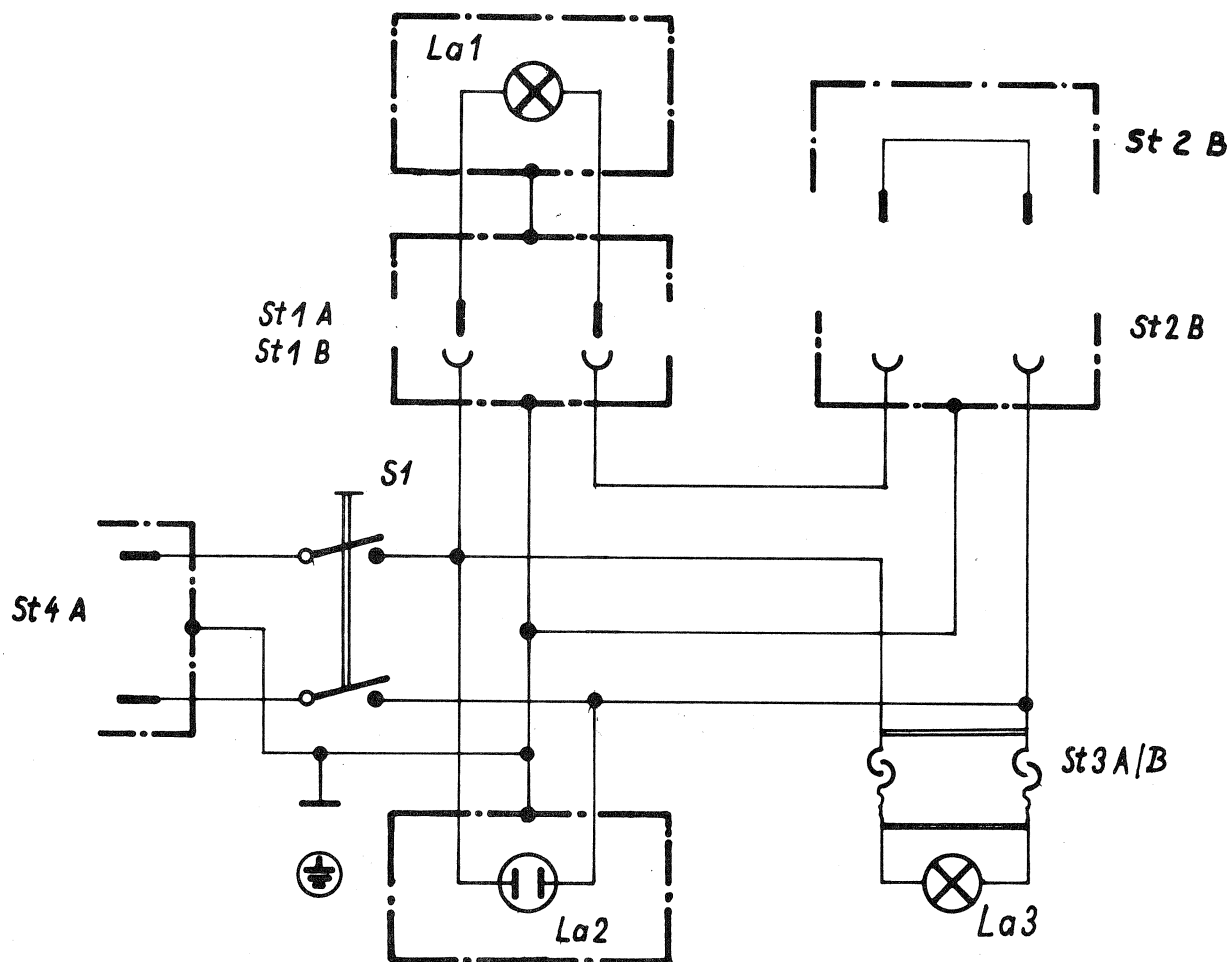
Schaltplan siehe Rückseite
connection plan see back page



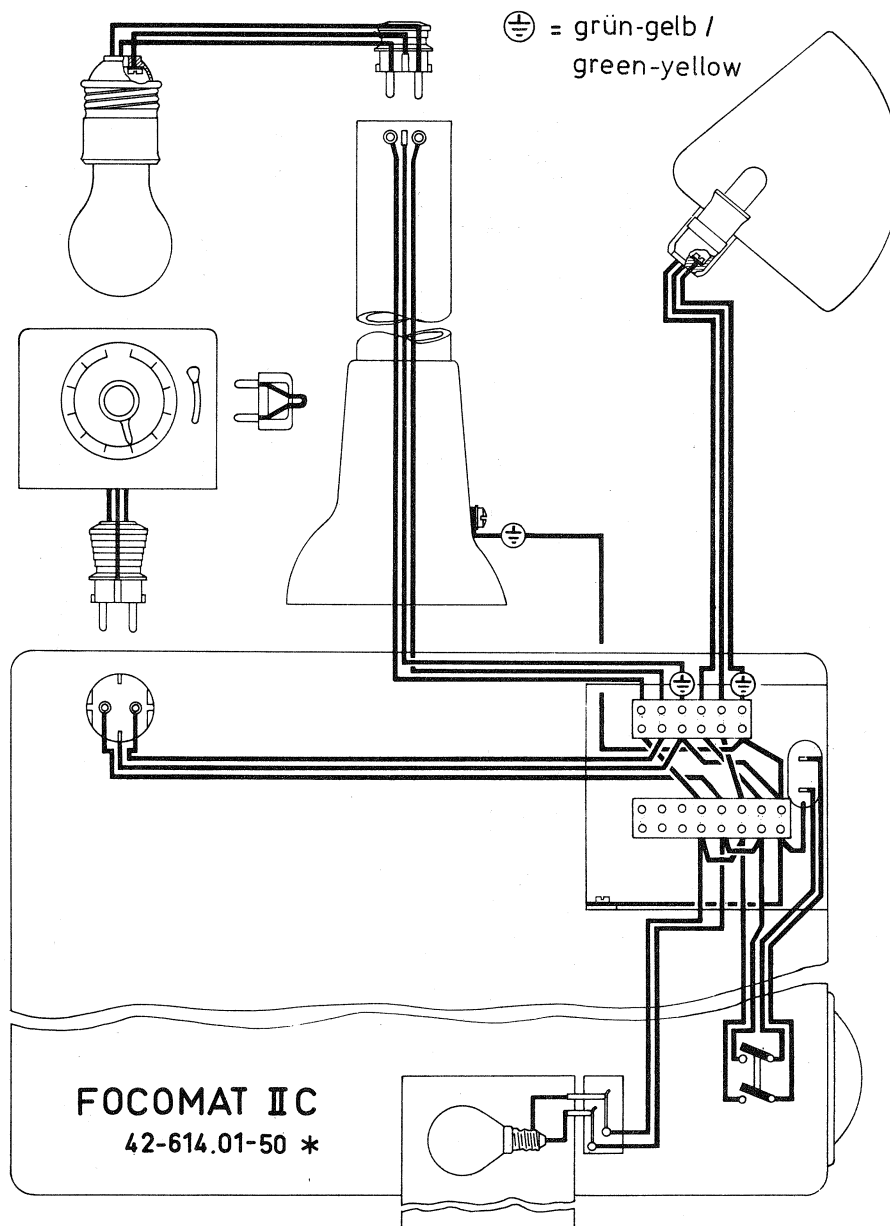
TECHNICAL SERVICE

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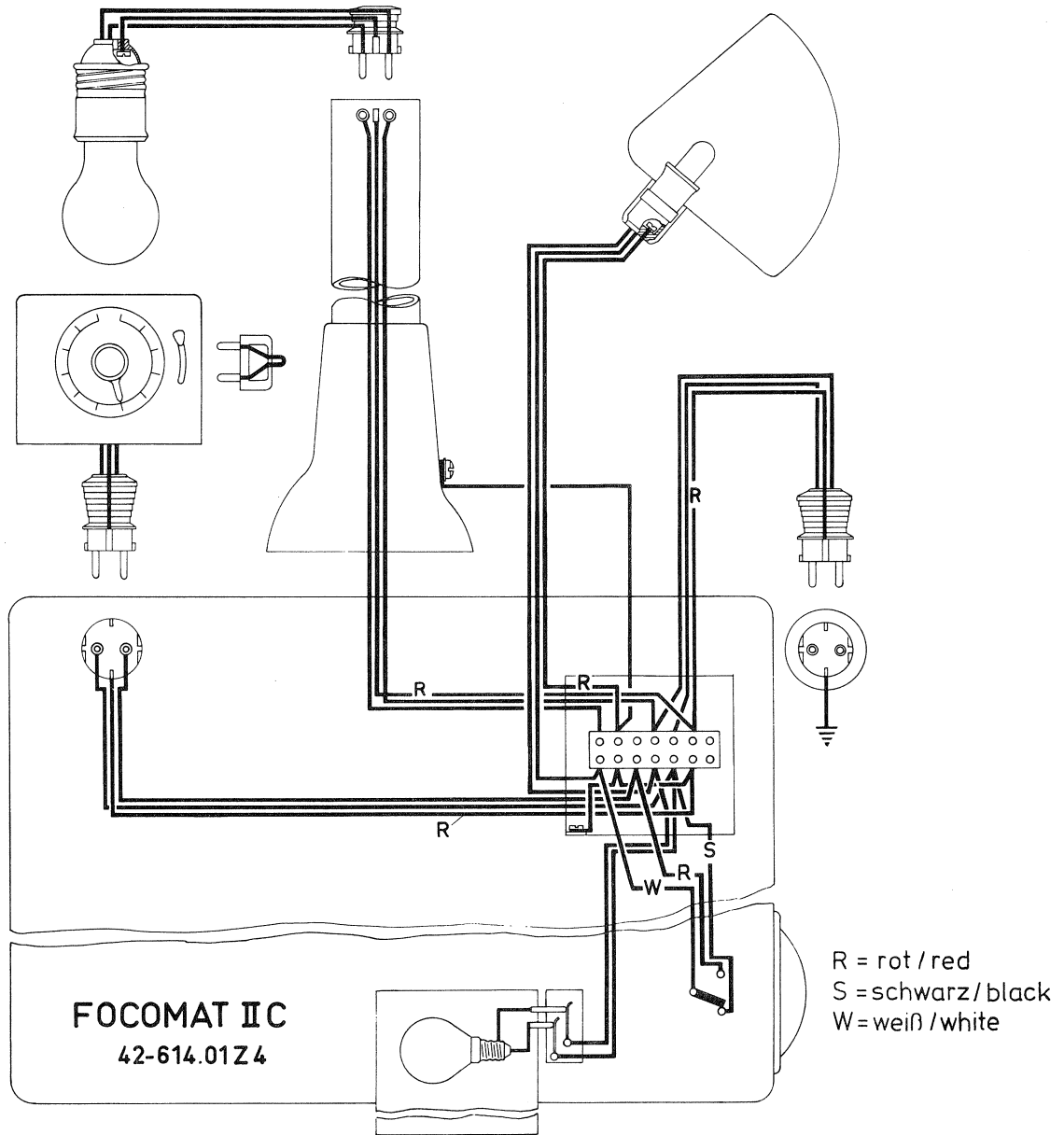
Schaltplan siehe Rückseite
connection plan see back page

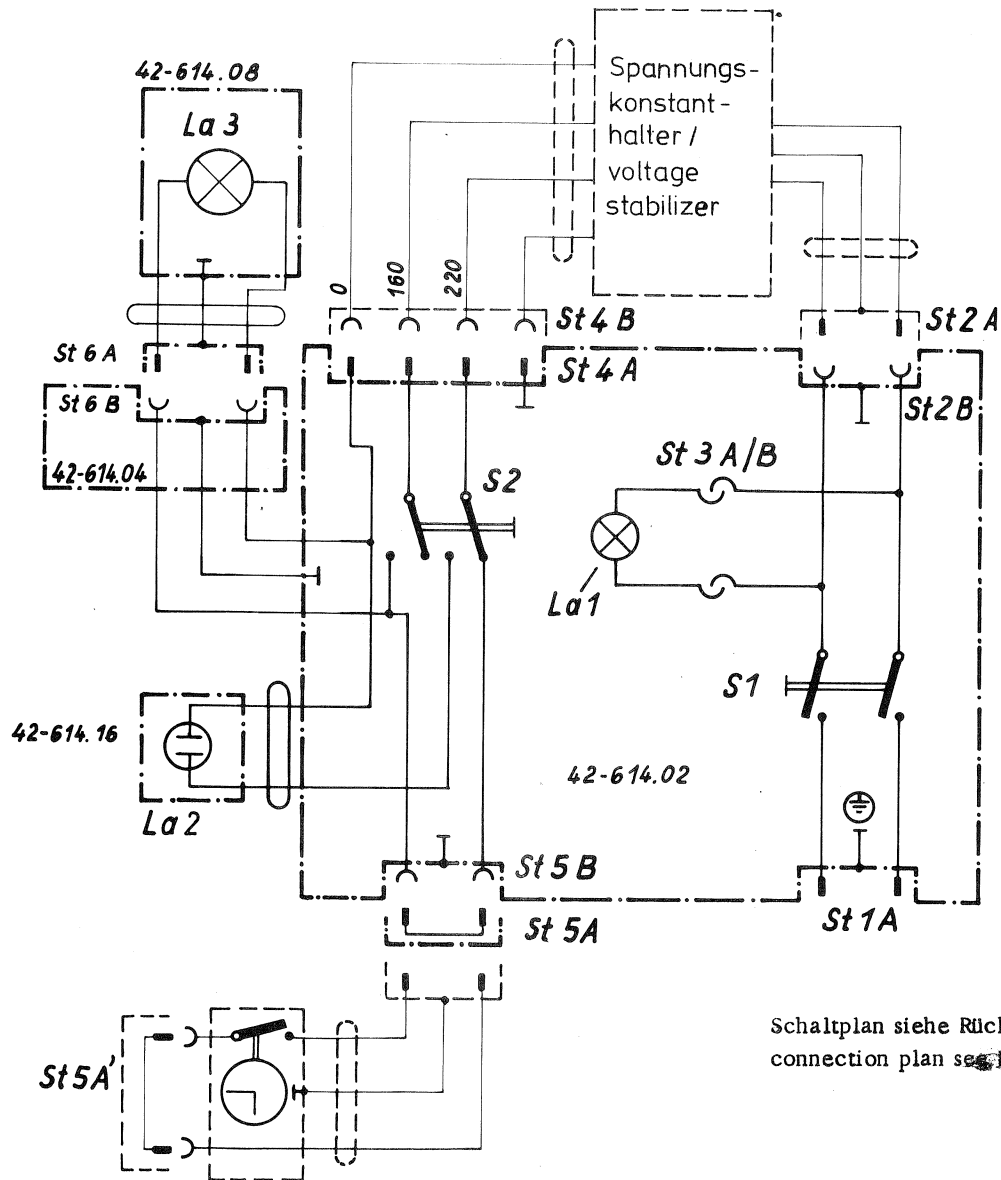


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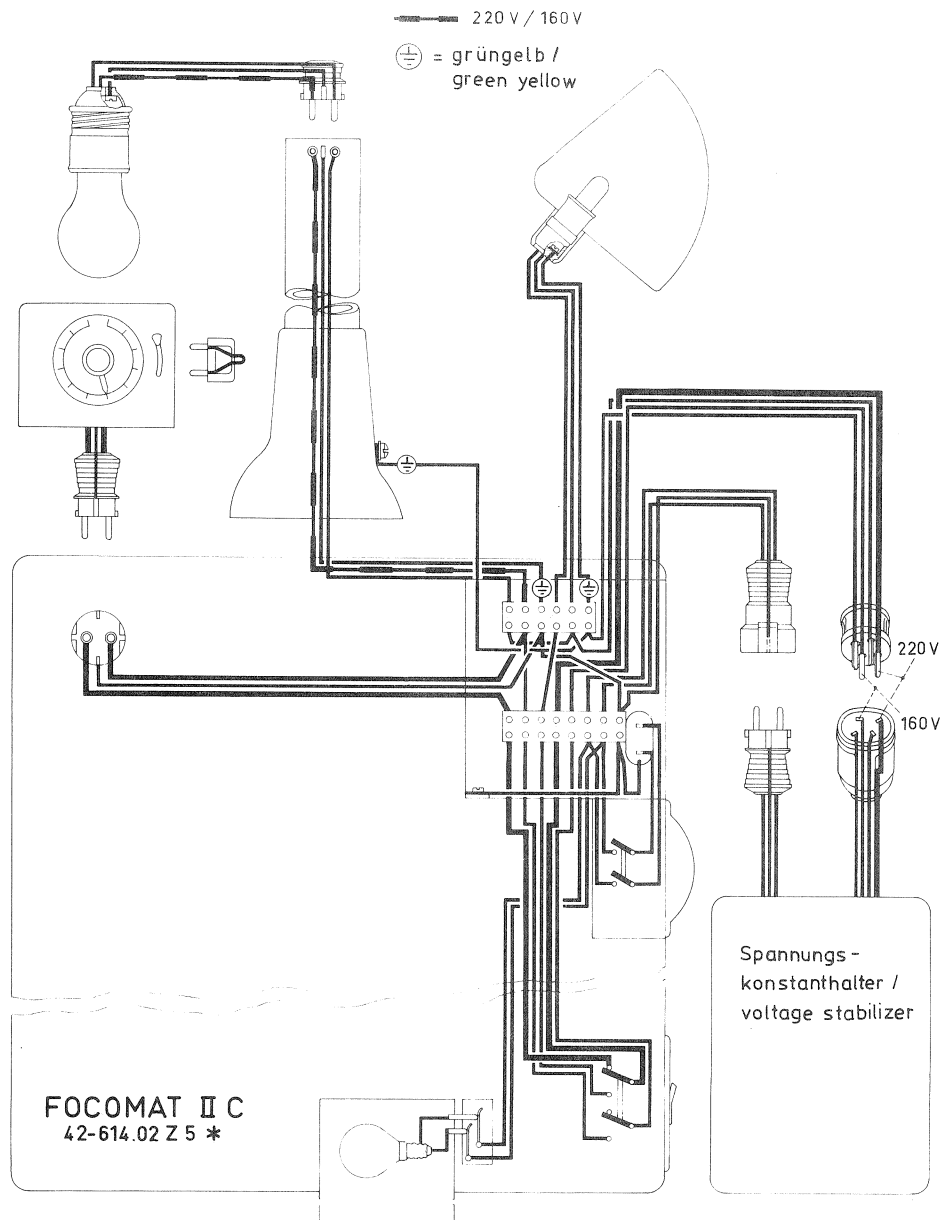
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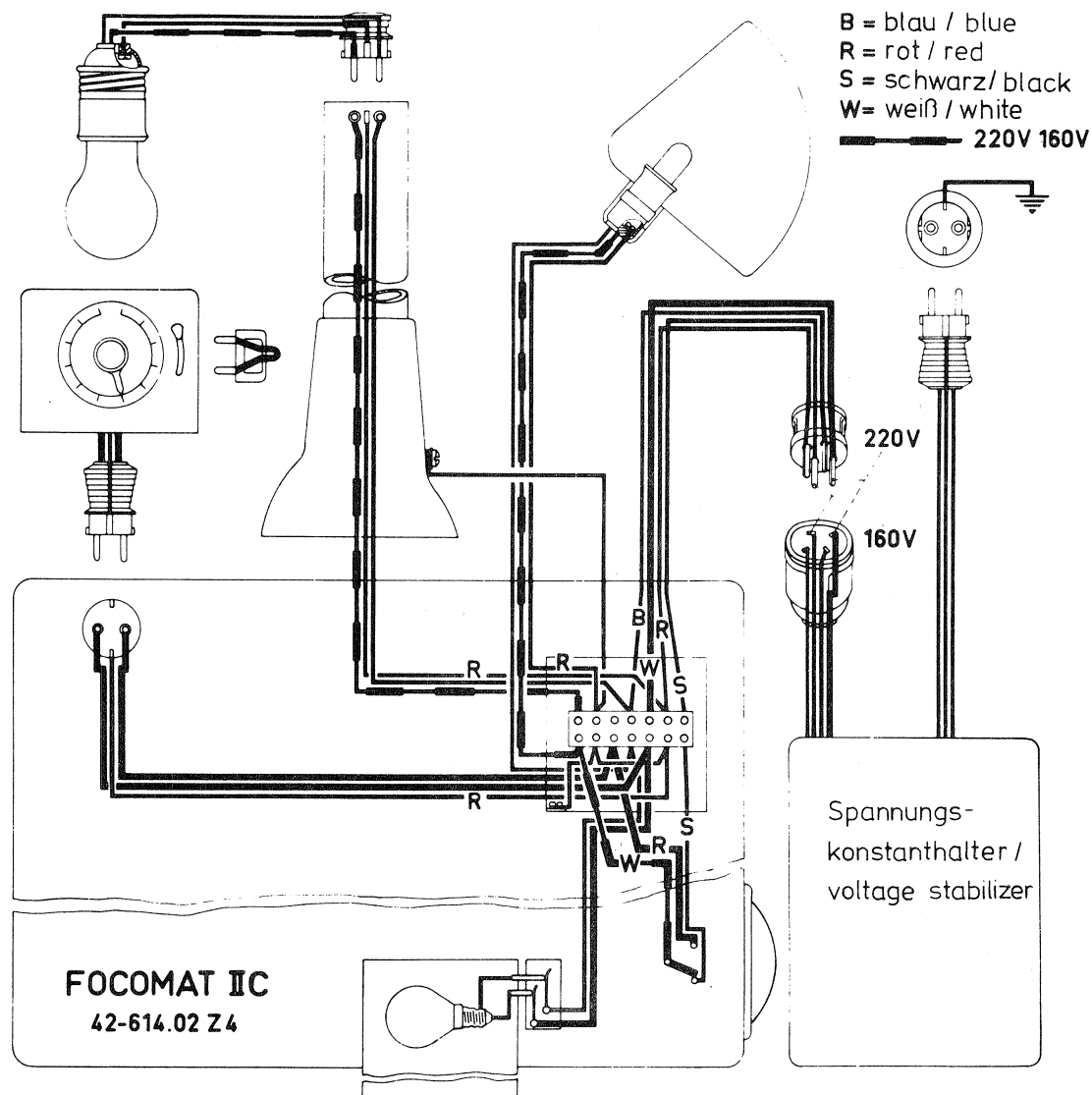
Schaltplan siehe Rückseite
connection plan see back page



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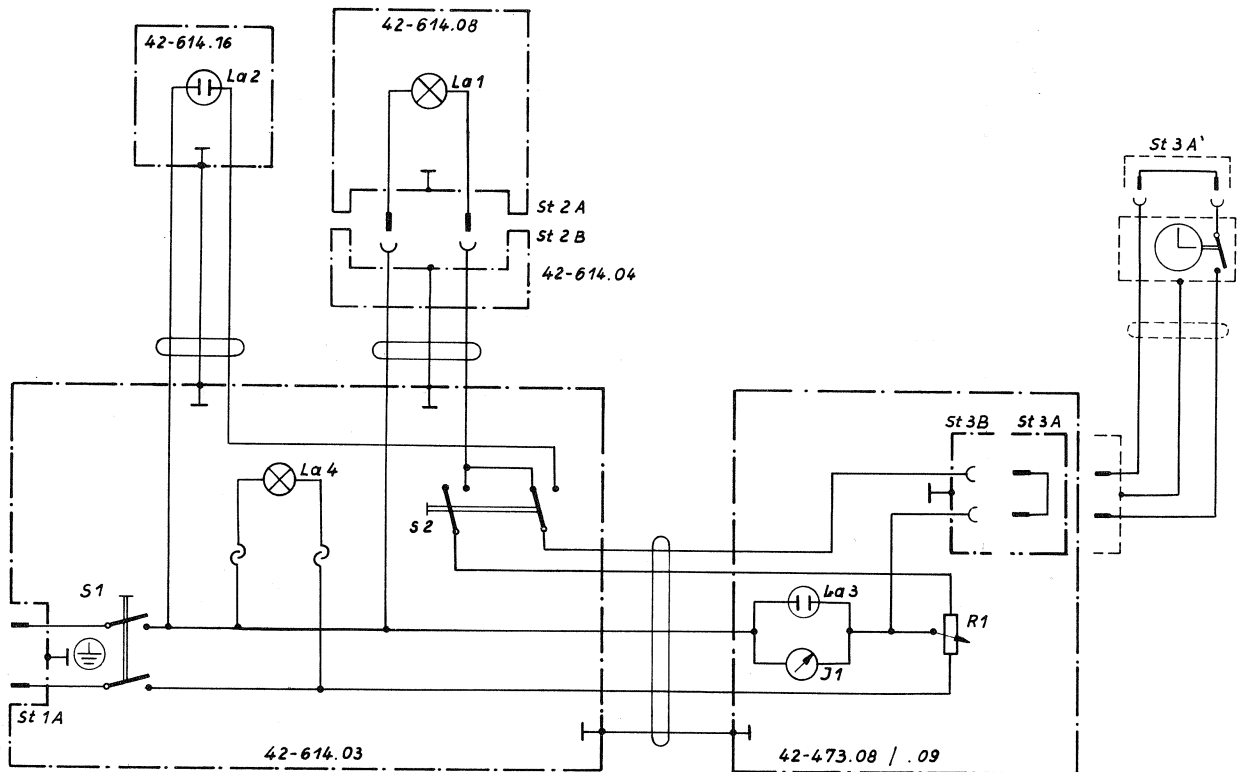
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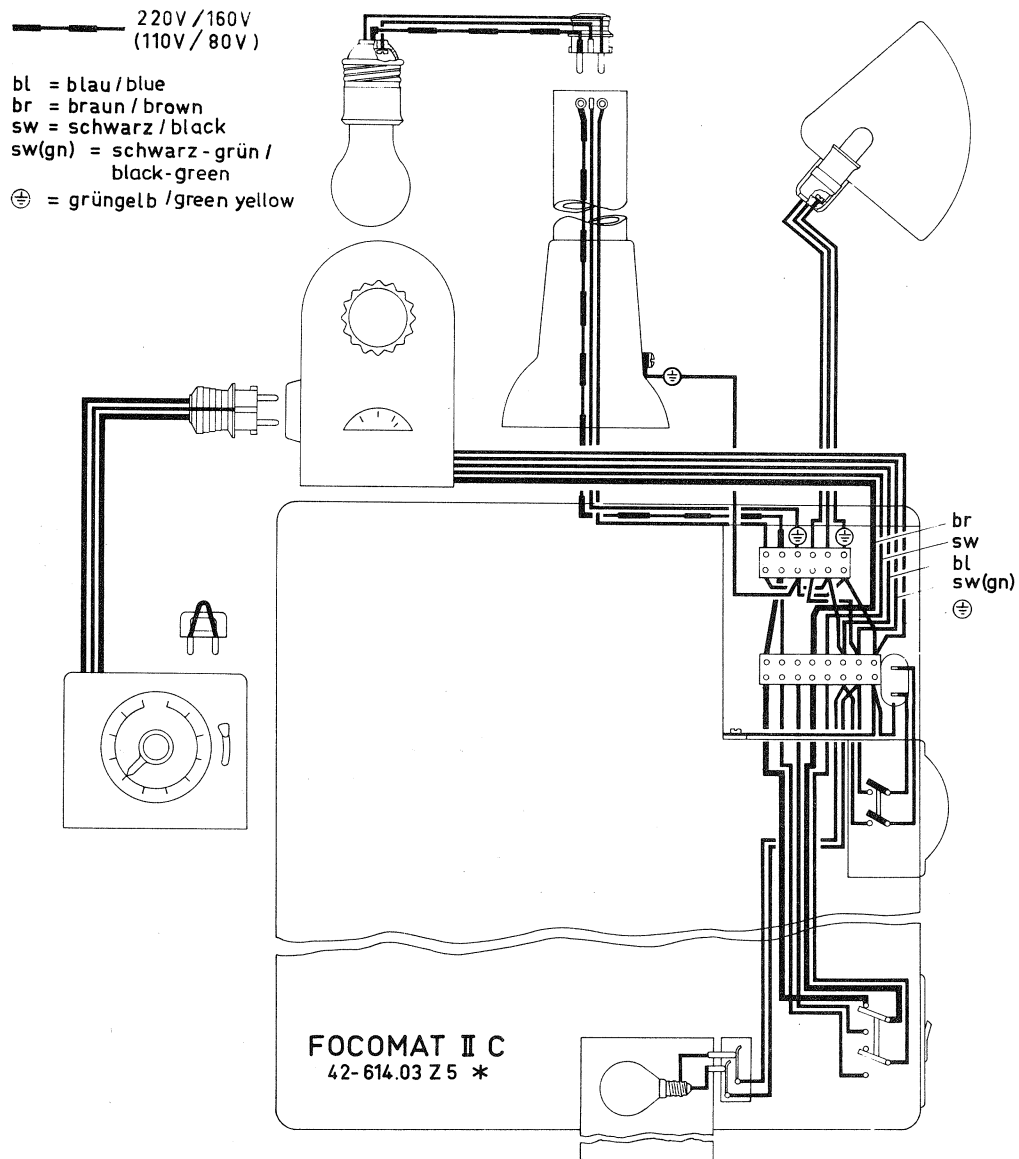
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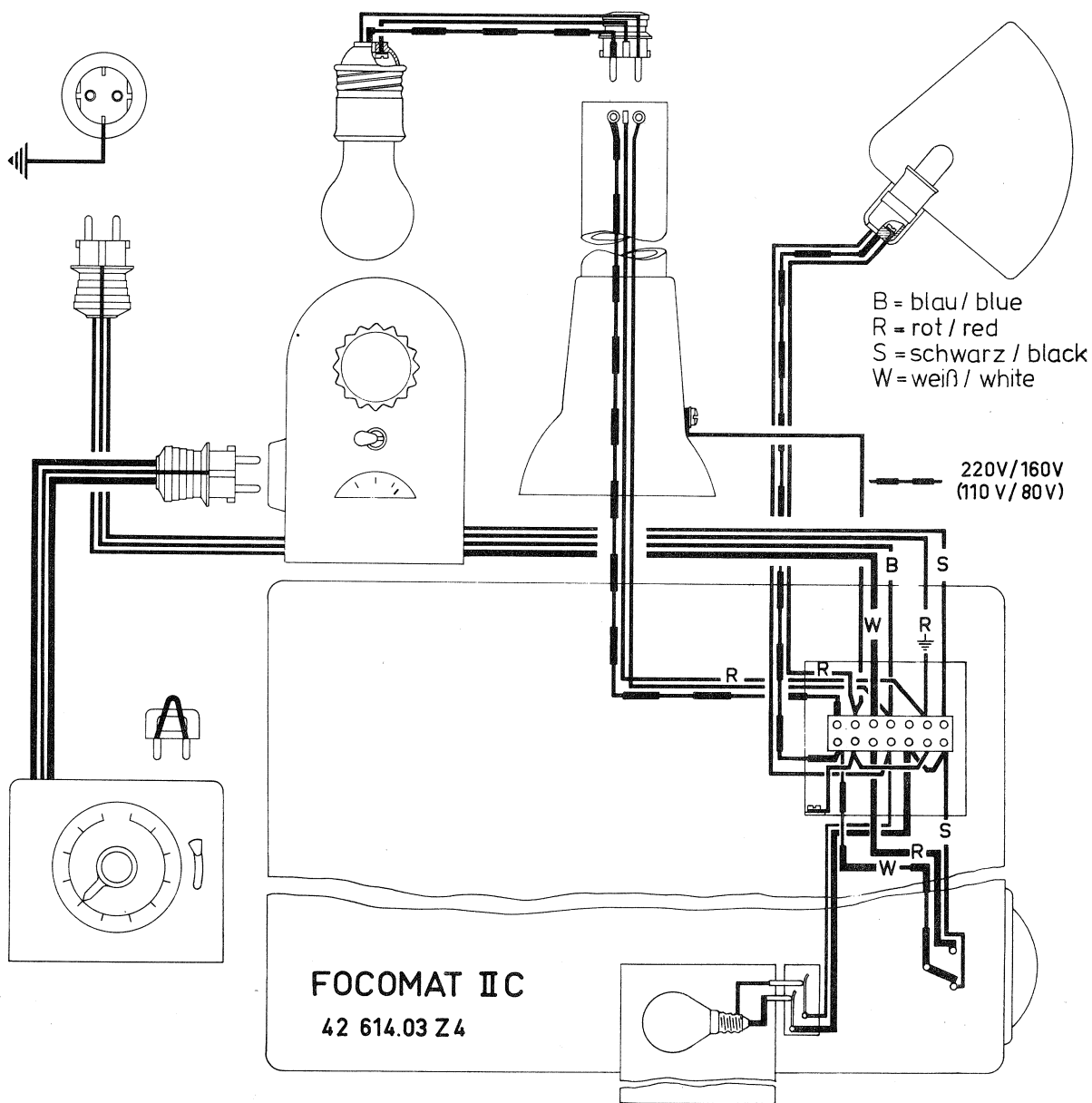
Schaltplan siehe Rückseite
connection plan see back page



TECHNICAL SERVICE

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14.12.1973



wird benötigt für	Seite	Werkzeug	Bestell-Nr.
<u>Grundplatte</u>			
Gerätestecker	1. 2/45	Maulschlüssel	SW 6 DIN 894
Kabeldurchführung	14. 1/20	Maulschlüssel	SW 16 DIN 894
<u>Säule</u>			
Befestigungsschraube und Zwischenring 16 615	2. 3/18	Schlüssel	042-614. 014-005
<u>Parallelogramm und Vergrößerungskopf</u>			
Parallelogrammarme	3. 1/7 bis 10	Innensechskant- schlüssel	5 DIN 911
Befestigungsmutter	4. 1/48	Maulschlüssel	SW 13 DIN 894
Spezialmutter	15. 1/7 und 9	Maulschlüssel	SW 14 DIN 894
Vorschraubring	10. 1/7	Universal-Objektiv und Ringschlüssel OS 8*	
<u>Justierung der automa- tischen Scharfeinstellung</u>	83. 1	Justierkeil Zwischenstück Testnegativ Testnegativ Zylinderstift Lupe 4x Leseglas Ø ca. 100mm**	042-614. 000-000 W 1 042-614. 000-000 W 2 042-614. 000-000 W 4 042-614. 000-000 W 5 705-523. 000-000 103. 23. 2

* nicht von Leitz lieferbar, Lieferfirma: Fa. A. Weber, Optische Werkzeuge
67 Ludwigshafen am Rhein
Kurfürstenstr. 4

** nicht von Leitz lieferbar, handelsübliches Leseglas verwenden.