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Diaphragm			4	5.6	8	11	16	22	
	∞	141′-∞	86′-∞	61′−∞	43′−∞	31′4″−∞	21′6″-∞	15′7″-∞	
	60′	42′–105′	35′–198′	30′3″−∞	25′–∞	20′7″-∞	15′10″-∞	12′4″-∞	
	30′	24′9″–38′	• 22′3″–46′	20'2"-59'	17′8″–99′	15′4″-∞	12′6″-∞	10′3″-∞	
•	20′	17'6"-23'4"	16'3"-26'	15′1″–29′8″	13'8"-37'	12'2"-55'	10'4"-290'	8′9″−∞	
-	15′	13′7″–16′10″	12'9"-18'2"	12′1″–19′10″	11′2″–23′	10′–29′8″	8′10″–50′	7′8″–350'	
=	12′	11′1″–13′2″	10'6"-13'11"	10'-14'8"	9′5″–16′8″	8'8"-19'6"	7′8″–27′1″	6′10″–52′	
ם יי	10′	9'4"-10'10"	9′–11′5″	8′7″–12′1″	8'2"-13'2"	7′7″–14′10″	6′10″–19′	6′1″–27′5″	
=	8′	7′7″–8′6″	7′5″–8′10″	7′2″–9′2″	6′10″–9′9″	6'6"-10'7"	6′–12′5″	5′5″-15′8″	
_	7′	6'8"-7'4"	6'6"-7'7"	6′5″-7′10″	6′1″–8′3″ .	5′9″–8′10″	5′5″–10′1″	4′12″–12′1″	
3	6′	5′9″-6′3″	5′8″-6′5″	5′6″-6′7″	5′4″-6′11″	5′2″-7′4″	4'91/2"-8'1"	4'51/2"-9'4"	
50	5′	4′10¹/8″— 5′2″	4′9″–5′3″	4′7 ⁷ /8″- 5′5″	4'6 ³ /8"- 5'7"	4'4 ¹ /2"- 5'10"	4'15/8"-	3′10³/₄″– 7′1″	
2 5 -	4′	3'10 ³ / ₄ " 4'1 ¹ / ₄ "	3′10¹/₅″— 4′2″	3′9³/8″-4′2 ⁷ /8″	3'83/8"-	3'7 ¹ /4"- 4'6"	3'53/8"-	3′3³/8″- 5′2″	
	3,5′	3′5¹/8″— 3′6 ⁷ /8″	3'4 ⁵ /8"- 3'7 ¹ /2"	3′4″- 3′8¹/8″	3'31/4"-	3'2 ³ /8"- 3'10 ¹ / ₂ "	3′1″- 4′ ⁷ /8″	2'11 ³ /8"- 4'4 ¹ /8	
	3′	2′11³/8″— 3′⁵/8″	2′11″– 3′1″	2′10¹/2″- 3′1¹/2″	2′10″-	2'93/8"-	2'81/4"-	2′7¹/8″- 3′6 ⁷ /8	
Di	aphra	gm * 3.5	5.6	8	11	16	22	<u> </u>	

^{*} If more critical definition is required — in order to insure perfect sharpness in giant enlargements — use the I o w e r diaphragm figures to indicate the depth-of-field available.

Close-ups from $39^{1/2}$ to $18^{1/2}$ " with Rolleinars 1

Scale of focus	Depth of field (in inches) behind in front of the object with diaphragm Reproduction Size								
in feet	5,6	8	11	16	22	approx.	(sq. in.):		
œ	3 15/16" 2 3/4"	4 23/32" 3 3/4"	6 11/16" 5 1/8"	10 5/8" 6 29/32"	16 1/8" 8 21/32"	1 : 13.5	29 1/2″ x 29 1/2		
30'	2 11/16" 2 9/32"	3 3/4" 3 1/8"	5 11/32" 4 1/16"	8 1/16" 5 27/32"	12 5/8" 7 17/32"	1 : 12	263/8" x 263/8		
12'	1 27/32" 1 23/32"	2 23/32" 2 15/32"	3 15/16" 3 7/32"	6 7/32" 4 13/32"	9 1/16" 5 29/32"	1:10.5	23 1/4" x 23 1/4		
8'	1 1/2"	2 5/32" 1 15/16"	3 1/8" 2 9/16"	4 7/8" 3 17/32"	7 5/32" 4 11/16"	1:9	20 1/8" x 20 1/		
6'	1 3/16" 1 3/32"	1 27/32" 1 21/32"	2 9/16" 2 1/8"	3 15/16" 2 7/8"	5 29/32" 3 15/16"	1 : 8	173/8" x 173/		
4'		1 5/16" 1 3/16"	1 25/32"	2 3/8" 2 3/16"	3 5/8" 2 3/4"	1:7	153/8" x 153/		
3.5'	25/32" 21/32"	1 3/16" 1 3/32"	1 9/16" 1 5/16"	2 5/32"	3 7/32"	1 : 6	13" x 13"		

Close-ups from $19^{3}/_{4}$ to $12^{1}/_{2}$ " with Rolleinars 2

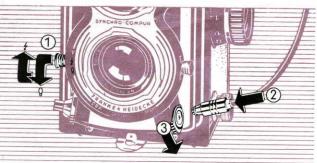
Scale of focus in feet	Depth of field	(in inches) behir	ont of the object	with diaphragm	Reproduc- tion Size approx.	Field covered (sq. in.):
· · · · · · · · · · · · · · · · · · ·	1 3/32" 1 1/32"	1 9/16" 1 11/32"	2 3/8" 1 7/8"	3 3/8" 2 17/32"	1 : 6.5	145/8" x 145/8"
30'	31/32″ 29/32″	1 3/8"	2 <u>3/32"</u> 1 11/16"	3" 2 9/32"	1 : 6.3	13 3/4" x 13 3/4"
1 2'	27/32"	1 3/16" 1 3/32"	1 13/16" 1 15/32"	2 9/16"	1 : 5.8	125/8" x 125/8"
8'	3/4" 21/32"	1 1/32" 31/32"	1 9/16" 1 5/16"	2 7/32" 1 25/32"	1 : 5.4	11 3/4″ x 11 3/4″
6'	21/32"	29/32″ 27/32″	1 3/8" 1 5/32"	1 15/16" 1 9/16"	1:4.9	10 5/8" × 10 5/8"
4'	17/32"	23/32"	1 3/32" 15/16"	1 9/16" 1 1/4"	1 : 4.5	97/8″ × 97/8″
3.5'	7/16"	11/16″ 5/8″	31/32" 29/32"	1 <u>7/16"</u> 1 5/32"	1:4	85/8" x 85/8"

Close-ups from 121/2 to 91/2" with Rolleinars 3

Scale of focus in feet	Depth of fiel (in inches	d behind of the in front	e object with [diaphragm	Reproduc- tion Size approx.	Field covered (sq. in.):
8	21/32″ 19/32″	1 1/32″ 7/8″	1 13/32" 1 3/16"	1 : 4.5	93/4" × 93/4"
30'	5/8″ 9/16″	15/16" 13/16"	1 5/16" 1 3/32"	1 : 4.3	91/2" x 91/2"
12'	9/16"	27/32" 3/4"	1 1/8"	1:4	83/4" x 83/4"
8 ′	<u>1/2″</u> 15/32″	25/32" 11/16"	1 3/32" 29/32"	1 : 3.8	8" × 8"
6'	15/32" 7/16"	23/32"	1"	1:3.5	71/2" x 71/2"
4'	13/32″ 13/32″	19/32" 17/32"	13/16" 23/32"	1:3.3	7" × 7"
3.5'	3/8"	17/32"	3/4" 21/32"	1:3	63/4" × 63/4"

= 1/1000 of the focal length f reproduction is sharply Circle of confusion The scale behind zone

Flash Shots



Choice of Contact: Pull knob ① and set on ∮ for electronic flash (→ page 26); this X-contact is also automatically used with self-timer shots (→ page 27) — set on ② when using M-type flash bulbs (→ page 26).

Connecting the Flash Cord: Insert the tip 2 into the flash connector socket; locks automatically.

Choosing Shutter Speed and Diaphragm: Always in accordance with the distance between flash and subject. See the exposure table provided by the maker of the flash unit. First set speed, then the diaphragm, separately (>> page 12, "special case"). To Disconnect Flash Cord: Press the knurled rim safety ring downward (3) and pull the tip out.

In modern flash technique the shutter takes over the task of electrically firing the flash at the correct instant. Operation is due to the built-in electrical contact. Two settings are provided (>> page 25), to accommodate the needs of different kinds of flash and also to make possible the use of higher speeds when the camera is hand held.

Choice of Contact: This depends on when and for how long the shutter is to remain open and also the length of the flash illumination interval. The X-Contact is used with rapid firing equipment having short intervals of illumination. Most flash bulbs ignite, however, after a short delay (approximately 16.5 ms) and "burn" for a somewhat longer period. For these "M" type bulbs, the "M" designated contact is used. It assures the proper coincidence of the peak output of the flash bulb and the period when the shutter is open, even when the most rapid speeds, up to 1/500th sec., are used.

The table on page 26 groups the best known brands by name and gives the required contact settings and the possible working range of the shutter. More complete information, however, may be gathered by a study of the material furnished by the different lamp manufacturers.

When Synchro Lever is set	Ö	4
Proper contact* is	M-Contact	X-Contact
Source of flash	Flash bulbs and electric firing flash powder (capsule flash)	Electronic flash and some flash guns with short duration of flash
* Time of contact is	16.5 thousandths of a sec. before shutter is half opened	Immediately before full shutter opening

The selection of flash lamp-type depends on the light output required by the subject. Many makes are available in three groups (normal, medium and high light output). The selection is dependent on the taking conditions, especially as to whether a room of shallow or great depth is to be illuminated.

The power of flash illumination decreases according to the square of the distance: i. e., an object six feet away receives only one-fourth the light as an object at three feet. Distance from flash to subject must therefore be carefully considered in selecting

diaphragm opening. Lamp manufacturers supply easy to use guide numbers which are divided by the distance in feet to obtain the required diaphragm opening.

All commercially available flash guns and electronic flash units may be used. Current-carrying capacity of the contact when several flash lamps are connected simultaneously: 10 ampères at 24 volts for a period up to a maximum of 1/15th sec. For safety reasons one pole of the contact is grounded to the camera body (isolation-test: 700 volts).

Flash Contact and Permissible Shutter Speeds

Shutter Speed: Fastest Slowest Recommended	1/500 1/250 1	•	1 09/1 09/1		001	06/1			1/200 1/60 1			1/125 1/60 1		1/60 1/30 1		1/250 1/30 1	1/125 1/30 1
Contact	×		×		>	<			¥			₹		\$		₹	\$
SOURCE	(1/500–1/2000)	SM	SF (1/200)	SM, SF, SS	M 2 (17,100)	2 M, 12	XM 1, XM 5	PF1, PF5	5, 8, 11, 22	0, 3, 5, 11, 22	Press 25, 40, 0, Bantam 8	2	PF 60, PF 100	50	3	6, 31	Average
FLASH LIGHT SOURCE	1. Electronic Flash	General Electric Westinghouse	Sylvania	West, Japan	General Electric	West, Japan	Osram	Philips (Mazda)	General Electric Westinghouse	West, Japan	Svlvania		Philips (Mazda)	General Electric Westinghouse	Sylvania	General Electric Westinghouse West, Japan	III. Capsule Flash
	_							II.	Flash	Lamp	s						

Explanation of the Table

The "Contact" column indicates when to use X or M.

The shutter speed column designates the range of permissible speeds.

Center: The recommended shutter speed utilizes practically all of the useful light output of the flash. It gives the maximum illumination and permits use of the smallest diaphragm stop for greatest depth-of-field. The following rule applies:

Use the recommended shutter speed for the required contact setting.

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Left: The fastest speeds given indicate the maximum allowable. They should be used chiefly for action and sports.

Right: The shutter speed may be changed at will to the slowest value (1 sec., or even time exp.) so that after the flash some of the existing illumination can be used. Of course, in this case the exposure is made up of the combined illumination from both sources of light.

The colored numbers indicate the intervals during which the actual exposure of the film by the flash occurs. The following distinctions should be made:

- 1. With X-contact, flash duration is always shorter than the length of time the shutter is open. The full flash output is utilized even with the shortest intervals (highest speeds). Slowing down the speed therefore will have no effect on the choice of diaphragm.
- 2. With M-contact, flash duration is encompassed within the recommended speed. With higher speeds, however, only a portion, the peak of the flash is used. It may be necessary to compensate for some loss of light by opening the diaphragm.

These distinctions in the use of the flash and the settings are once more observed in the illustrated table with three examples. The white symbols denote the flash; the relative size denotes the amount of illumination that is made use of.

When the built-in self-timer is used only the X-contact comes into play. M-type flash bulbs can of course be used with X-contact; it is only necessary to double the recommended exposure — thus, 1/30th instead of 1/60th sec. and 1/15th instead of 1/30th sec. These would become the fastest speeds permissible.

Changing the Camera Back



This is done only when changing to the plate adapter:

Taking off the back: Raise the back all the way and then slide, in the same direction, the safety lock lever on the right hinge (1) until it reaches a stop. The back will then come off.

Replacing the back: Insert the back, in raised position, first into the left hand hinge, then the right. Of course, the safety lock lever must be up — lower back, which will automatically lock.

Important! When using the adapter: Remove the empty spool from the camera, taking care however to preserve it for the next use of roll film.

Mask Set for 16 Frames

The mask set is used to reduce the picture format and, simultaneously, to show the reduction in the ground glass and the sports finder. With the masks in place, B II 8 (120) film produces, instead of the normal 12 6×6 cm frames, $16 \times 4 \times 5.5$ cm shots. This picture size includes the important super miniature 4×4 format from which the well known Super-Slides are made. Edge notches are used to indicate the limits of this size.

The film mask – for both 4×5.5 and 4×4 – is inserted before loading the camera. Its insertion automatically switches over the counter mechanism. The white numbers 12 or 16 on the film frame counter dial indicate which of the numbering systems is in operation. Loading and winding as usual.

Either **ground glass mask** is used, depending on whether 4×5.5 or 4×4 is the desired format. They can be substituted one for the other at any time between shots. After removing hood and raising the ground glass, the desired format mask is placed over the 6×6 mask. Parallax compensation is automatically assured.

Either sports finder mask is fitted into place in front of the sports finder opening as needed.



Inserting the Film Mask: Insert the spring loaded side behind the film aperture frame 3, first below 2, then above.

Removing the Hood: Press both spring catches 4 and slide hood towards rear.

To replace: press hood down on track and slide forward until it locks.

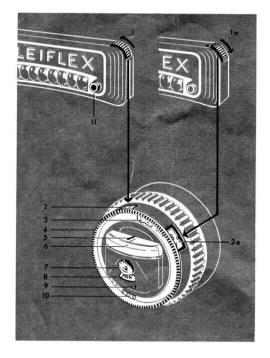
To lift the ground glass: Take hold of the two sides

of the frame, pull backwards slightly and lift **5**. Close by pushing downward.

Inserting the Ground Glass Masks: Drop into place so that the notch and punched holes fit over the studs provided 6.

Inserting the Sports Finder Masks: Slip the straight edge under the lip of button (7). Fasten by pressing the side pins into the wells (8). Remove by lifting the tab (9).

Caution: Protect the mirror from dust. Do not touch with the fingers, do not rub. Wipe away dust with soft camel's hair brush. Remove any accidental finger prints with soft cloth.



The Exposure Meter, for subsequent installation

Exchanging the name plate and film reminder dial for the photo cell and measuring instrument is easily accomplished by removing screws 13 and 38 (> page 6). Detailed instructions accompany each meter kit.

- 1 Control switch on nameplate: position 1 for normal light intensities, position 1 a - red dot visible - for weaker illumination.
- 2 Exposure value indication: use window 2 for switch position 1, window 2 a - edged in red for switch position 1 a.
- 3 Setting window for DIN film speed ratings
- 4 Setting ring
- 5 Red setting pointer
- 6 Black indicator pointer
- 7 Adjustment of film type reminder
- 8 Film type indicator window
- 9 Lock screw to fasten meter in its bayonet socket
- 10 Setting window for ASA film speed ratings
- 11 Retaining knobs for diffusor

Measuring Exposure

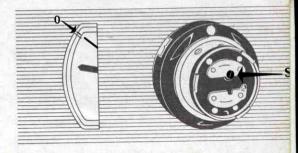
Changing DIN / ASA film speed rating setting (necessary whenever a different film speed is used): turn adjusting ring 4 past the left or right click stop until the correct speed rating appears above the indicator mark.

To take reading: for reflected light measurement (>> page 32): point camera towards subject or towards most important detail in subject - check in ground alass.

For incident light measurement (>> page 33): snap diffusor into position, from above retaining knobs 11, over the photo cell. Turn camera around so that the photo cell faces the same direction towards the light as the subject.

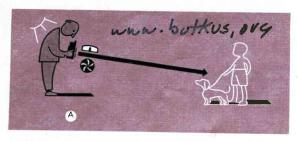
Measuring exposure value: turn adjusting ring 4 until the red pointer covers the black indicating pointer — read the exposure value in the appropriate window 2 (red-edged window 2 a, when red dot is visible at the switch — 1 a). If the red pointer does not reach the black, change to higher sensitivity position with switch (1, 1 a).

The shock mounted exposure meter is ruggedly built and will withstand the strongest light for any length of time, in either switch position. It is not necessary, therefore, to cover the photo cell when not in use.



Checking and adjusting the meter

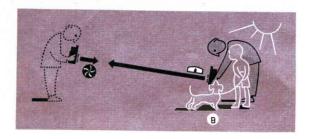
When the photo cell is completely covered, the black pointer should be in zero position, pointing to the short green line. If it is off this position, perhaps due to prolonged and heavy shaking, turn safety screw 9 (>> page 30) until it stops. Turn meter towards the left to disengage from bayonet socket and remove. Adjust screw S on back of instrument until black indicator needle points to outer green reference mark. Re-insert instrument, lock into position and tighten safety screw.



Reflected (A) and Incident (B) Light Measurement

These two equally valuable methods of measurement permit Rollei to master all light conditions.

A general rule in strong sunlight: give preference to whichever measuring method that does not expose photo cell or diffusor to direct rays of the sun.



Reflected light or object measurement

The quick and convenient method especially suited to the Rolleiflex: aim at the subject (A). Measuring in this position covers the entire picture area, as seen on the ground glass screen. Meter reading, exposure value and focusing image can simultaneously be checked with camera in shooting position. Changes in light intensity can be observed instantly, even up to shooting time.

Using the reflected light method, a reading for the average brightness of the entire subject area is obtained. Application: evenly lighted subjects, for front or side lighting without heavy shadows in picture (standard lighting for color) and also for high contrast subjects when the light and shade areas are evenly apportioned throughout the picture. In special cases, detail measurement becomes very helpful: when either very light or very dark areas prevail, take individual readings of light and shade areas and use a mid-point value. The ground glass control image facilitates accurate measurement; it permits concentrating - by altering camera position on most important elements of the picture or even to choose a nearby substitute object of the same brightness for reading.

Incident light measurement (with diffusor)

Instead of measuring the light reflected **by** the subject, this method measures the light as it falls **on** the subject. This is accomplished by attaching the diffusor over the photo-cell, to serve as a surface receiving the same illumination as the subject, and pointing the exposure meter in the opposite direction (B).

To get correct reading, aim from subject to intended camera position. In the open, when subject cannot be approached, aim the photo cell, turned around of course, along a line drawn from center of scene to camera. An exposure value of average scene brightness will result. When the important part of the scene is lighter or darker than the average, the measured exposure value should be corrected (usually 1/2 EV is sufficient). Position of the sun, special effects lightings, strong side or back lighting will have no influence on the proper reading and are disregarded. Detail measurements are not necessary, either.

Main uses: against-the-sun shots, strong backlighting, in shade with strong rays of sunshine, for objects with brilliant backgrounds (sky, snow, water, beach), for small objects as in Rolleinar shots.

Speed of Photographic Emulsions

(Comparison values approximated)

•	Companion verter appre										
ASA (BS)	°DIN	Weston	General- Electric	Scheiner (Europe)							
8	10	6	9	21							
10	11	8	12	22							
12	12	10	15	23							
16	13	12	18	24							
20	14	16	24	25							
25	15	20	30	26							
32	16	24	36	27							
40	17	32	48	28							
50	18	40	60	29							
64	19	50	75	30							
80	20	64	100	31							
100	21	80	120	32							
125	22	100	150	=							
160	23	125	200								
200	24	160	250								
250	25	200	300	=							
320	26	250	400								
400	27	320	500								
500	28	400	600	-							
650	29	500	800	-							
800	30	650	900	-							
1000	31	800	1000	-							

Changing the Magnifier

(if eyesight demands)

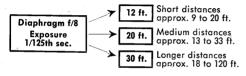
For focusing without glasses, interchangeable magnifiers to adapt to one's eyesight are available in the range from +3 to -3 diopters (supply prescription for glasses). To remove, grasp lens from above and below, push against retaining spring (in the direction of the hinge), lift up and out. To insert, reverse procedure. Afterwards, clean with soft cloth.

Tripod pictures with the Rollei

Length of the tripod's screw must not exceed 3/16" (4.5 mm). If necessary, shorten screw or use washer of proper thickness to avoid damaging bottom of camera. A reducing bushing is available for use with smaller tripod screws. A practical accessory: Rolleifix permits instant mounting or demounting of camera to tripod.

For Quick snapshots

Setting camera to certain distances providing required depth-of-field has been found very effective when shooting in a hurry. Use as follows:



Care of the Rolleiflex

A precision camera demands care in handling. Protect it against moisture, dust, sand, strong sunshine, hard blows or falls. First safeguard: the ever ready case. Proper camera protection is especially important on expeditions, in the tropics and for water sports. Use the metal ever ready case which is air-tight when closed and capable of floating. It provides sure protection against dust, humidity, splashes, windblown sand and blizzards. Carry camera around neck to minimize transportation shocks. Keep all parts clear and clean lenses with a soft camel's hair brush or doeskin. Although the mechanism is not unduly sensitive to cold, some condensation may form on the lenses when the camera is brought into a warm room from outside in cold weather. Do not wipe off - let moisture evaporate.

In Case of Damage to the Rolleiflex

The task of repairing major or minor damage is the special province of the expertly trained mechanic. Franke & Heidecke maintain their own special workshop in which all repairs are done with precision at nominal prices. Abroad, apply to photo dealers and factory representatives for full information.

Rolleiflex T and the Practical Accessories*

Code: Code: ROBET Rolleiflex T/Tessar 3.5 Rollei Color Conversion Filte	
Della: Calas Canssasian Filto	
	rs:
RELAT Light meter elements for installation BARIM R I BAIMB	B 1
LEOVIE Mack Set for 16 Frames BARWO R 2 BAWOB	B 2 B 5
REPOR Feer Ready Case with detachable front BARFU R 5 BAFUB	B 5
I DELKA Protective Conforexposure meter [plastic] BAKEL KII DAELD	B 11
RELED Protective Cap for exposure meter (leather) BAIAK Kolleipoi, Foldrising Screen	
REMET Metal Ever Ready Case BAINU Diffusion Disc: Rollelsoff U	
LEODRY Designet Cartridge LBALON Kolleisoff L	1
FOCI Nock Strap	Lens Hood,
FOGUZ Shoulder Pad for neck strap 2 Sets of Rolleinar Lense	s (I and 2)
BACAP Lens Cap, chromium-plated and your choice of 5 Filter	ers
BAOBE Lens Hood ETLEE Leather Case only	1
BAUNE Rolleinar Lenses: set 1 (40–18") ETSET Leather Case containing: 1	
BADOS " " set 2 (20-12") PATRE and your choice of 2 Fill set 3 (101/2-91/2") ETSOF Leather Case only	ers
	4 1
Koner i mera.	
I DATTLE LIGHT 7011011	
DAIMI Medicin ferior	anter back.
DALIN 2 - 1: - 2 - 1 film shouth	(s)
DALLIN OTEEN Adams David	-,
I BAOKA Clude	·
DAUDI Light fee	
TOCAC Light bloc	
BAFIR Infrared Ultra violet filter FOCAS Learner Case for 2 states	
BANEU Neutral Density Filter 2 FOFIX Rolleifix Tripod Head	
RAITY Neutral Density Filter 4 FOBUM Roller Pistol Grip	
RAHA7 H 1 Filter (for Daylight Color Photo- FOEAD Panorama Head	
graphy) FOBIN Extension Hood with Binocul	ar Magnifiers

^{*} to fit Tessar 3.5 bayonet size I.

To avoid errors when ordering accessories please specify cameranumber. Full information on the use of Rollei accessories in the booklet "The Practical Accessories".

PRANKE & HEIDECKE BRAUNSCHWEIG Rolleiflex Rolleicord

Printed in Germany E 0958 G&I. E