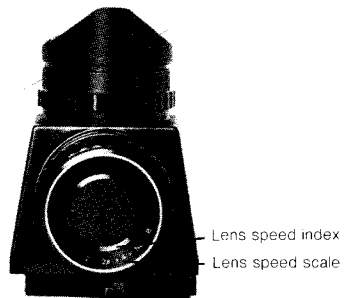
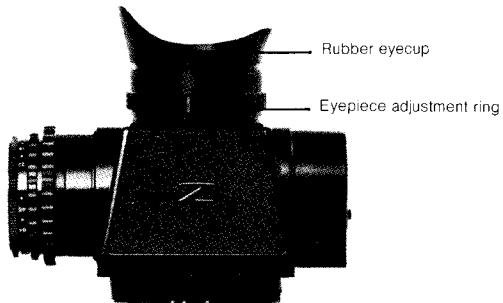


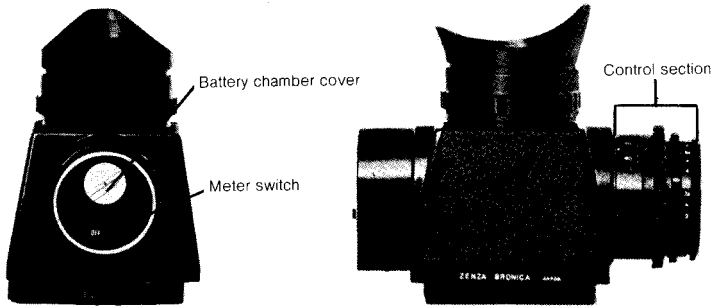
The TTL Exposure Meter has been specifically designed as a combination exposure meter and finder for exclusive use with the Bronica EC (Electronic Control) Single Lens Reflex Camera. When mounted on the camera, it becomes an integral part of the camera, for making fast, average readings at the focusing screen, based on TTL (through-the-lens) light measurements. Simply mounting the TTL Exposure Meter, in place of the focusing hood, automatically switches control of the Electronic Control focal plane shutter to the accessory so that exposure measurements automatically set the correct shutter speed to the Bronica EC. Because of the precise measurements that are possible, the accessory is particularly effective for color photography, but is recommended for use with all interchangeable lenses or when shooting with the extended lens, in close-ups and microphotography.

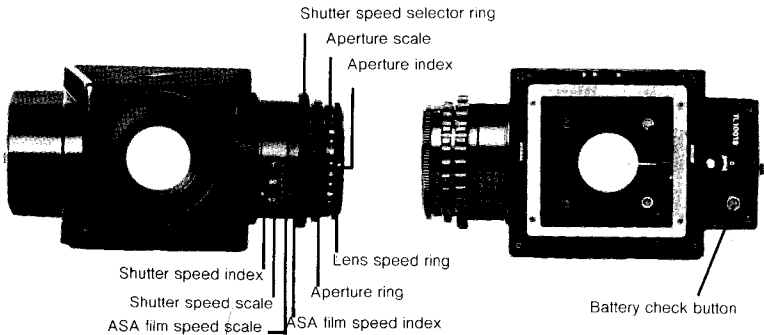
FEATURES

1. CdS exposure meter for TTL (through-the-lens) light-metering with the Bronica EC single lens reflex.
2. Highly accurate exposure measurements are possible under all lighting conditions, based on a quick, average reading of the reflected light directed to the focusing screen.
3. Designed for simple and speedy diaphragm -priority full aperture exposure measurements.
4. Half-stops are possible in the electronically -controlled shutter speed settings.
5. Zero method exposure measurement is both simple and speedy.
6. Eyepiece adjustments of the finder eliminates the need for eye-glasses, in most cases, and also increases focusing accuracy.
7. Attachment and detachment of the accessory is very simple and speedy.

NOMENCLATURE







ATTACHMENT AND DETACHMENT

The TTL Exposure Meter is attached to the Bronica EC, or detached from it, in the same manner as the focusing hood is attached or detached.

1. To interchange the TTL exposure meter with the focusing hood on the camera, first detach the latter, by depressing the focusing hood release button. Then replace the focusing hood with the accessory, by pressing it down firmly, when it is properly located in its frame, with the "Z" mark facing the lens.
2. To detach, simply depress the focusing hood release button and pull the accessory up.
3. Attaching the TTL exposure meter to the camera automatically switches out the shutter speed selector of the camera, with the shutter speed thereafter being set only by the shutter speed selector of the accessory.



IMPORTANT

Any shutter speed, except B, should be set to the shutter speed selector of the camera, when attaching the TTL exposure meter.

If the camera's shutter speed selector is on B, when the TTL exposure meter is attached, the shutter will only work on B, no matter what shutter speed is selected by the TTL exposure meter (because B setting is not electronically controlled).

PREPARATIONS

1. Set the lens speed to the TTL exposure meter.
Pull the lens speed ring, on the extreme right end of the control section, outwards or towards the right, to release its locking action; then rotate it to re-set the lens speed scale to the lens speed (maximum aperture) of the lens attached to the camera. Upon setting the lens speed, see that the lens speed ring click-stops or snaps back into locking position.
2. Set the film speed to the TTL exposure meter.
The film speed (sensitivity) of the film loaded in the camera must be set to the film speed scale of the TTL exposure meter. First, rotate the shutter speed scale until the required ASA film speed (orange-colored) appears in the window. Then, pull the shutter speed selector ring outwards or to the right, to release its locking action, and, finally, rotate the ring to set the film speed index (also orange-colored) opposite the ASA film speed. Upon setting the film speed, see that the shutter speed selector ring also click-stops back into locking position.

NOTE

Use the ASA/DIN Conversion Table for finding the corresponding ASA film speed if you are using film indicated in DIN speeds.

3. Turn the meter switch ON.

EXPOSURE MEASUREMENT

1. Diaphragm - Priority Full Aperture Exposure Measurements

Exposure measurements are made at the full aperture for the pre-determined aperture, with operations very simple and speedy.

1. Transfer the f/number, as preselected on the aperture ring of the lens, to the aperture scale of the TTL exposure meter. Rotate the aperture ring (of the accessory) until the required f/number is coincided to the white-colored aperture index dot on the rim of the lens speed ring.
2. Place your eye against the rubber eyecup of the finder eyepiece. To prevent ambient light from leaking in, place your eye flush against the eyecup.
3. Rotate the shutter speed selector ring, while looking at the meter needle on the focusing screen, and coincide the needle to the red-colored zero mark. Move the shutter speed selector ring to the nearest click-stop, as the ring must not be set at any position between click-stops.
4. Press the shutter button and take the picture (assuming, of course, that the picture is properly focused and composed, also).

2. Shutter-Priority Full Aperture Exposure Measurements

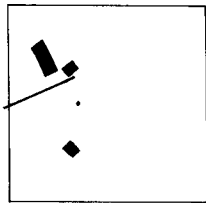
Exposure measurements are made at the full aperture for the pre-determined shutter speed, with operations still speedy but somewhat slower than for full aperture exposure measurements with the pre-selected aperture.

1. Rotate the shutter speed selector ring and set the required shutter speed opposite the shutter speed index.
2. Place your eye against the rubber eyecup of the finder.
3. Coincide the meter needle to the zero mark in the finder, by turning the aperture ring while checking meter movement.
4. Transfer the f/number opposite the aperture index of the TTL exposure meter to the aperture ring of the lens.

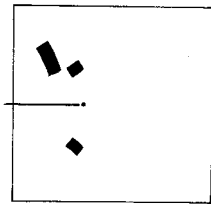
NOTE

If the indicated aperture is beyond the limits of the aperture scale on the lens, then re-adjust the shutter speed setting so that the f/number will be within the scale range.

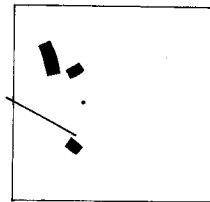
5. Press the shutter button, for taking the picture.



Under exposure



Perfect exposure



Over exposure

3. Limits of Exposure Measurements

If the meter needle cannot be coincided to the zero mark, with normal needle movement, simply choose another aperture or shutter speed, as the case may be, until coincidence is possible. When taking exposure measurements of lighting conditions exceeding the limits of the TTL exposure meter, however, the meter needle will simply not coincide to the zero mark but will act abnormally and swing suddenly towards the red rectangular mark, finally, stopping on either side of the mark. Adjusting the aperture ring and/or shutter speed selector ring, in this case, will not help. The only solution will be neutral density filters, if conditions are too bright, or flash illumination, if too dark.

BATTERY CHECK AND EXCHANGE

Since exposure measurements will not be correct if the battery is exhausted, always check the battery before using the TTL exposure meter (i.e., before each shooting session).

1. Battery Check

Turn the meter switch OFF. Then press the battery check button, which is located on the base of the TTL exposure meter, while checking movement of the meter needle in the finder. If the needle is in the red zone then the battery can still be used, but it must be exchanged with a new one if the needle is outside the zone, as it is already exhausted.

2. Battery Exchange

Unscrew the battery chamber cover in the counter-clockwise direction, with a coin or similar object, and detach it, which will disclose the battery chamber.

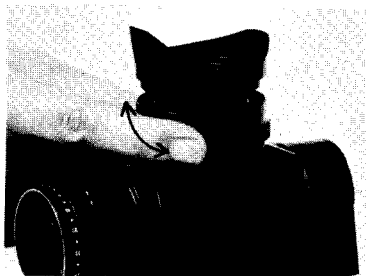
Take out the exhausted battery and replace it with a new one, **making sure that the plus (+) side of the battery is facing outwards**, to contact the cover when it is replaced.

3. Use two 1.5-volt silver oxide batteries, such as Eveready S-76, UCAR S-76, Mallory MS-76 or equivalent.



DIOPTER ADJUSTMENTS OF THE FINDER EYEPiece

The finder's eyepiece can be adjusted from approximately -3 to $+3$ diopters to suit the user's eyesight. To adjust the eyepiece to the user's eyesight, place the eye against the rubber eyecup and rotate the eyepiece adjustment ring in either direction until the focusing spot (i.e., line) and/or trimming lines of the focusing screens are seen clearly and distinctly.



FLASH PHOTOGRAPHY

The switching or time-lag mechanism for flash synchronization is not built into the TTL exposure meter but is incorporated in the Bronica EC body. Therefore, for flash-synchronized pictures with the TTL exposure meter mounted on the camera, do as follows:—

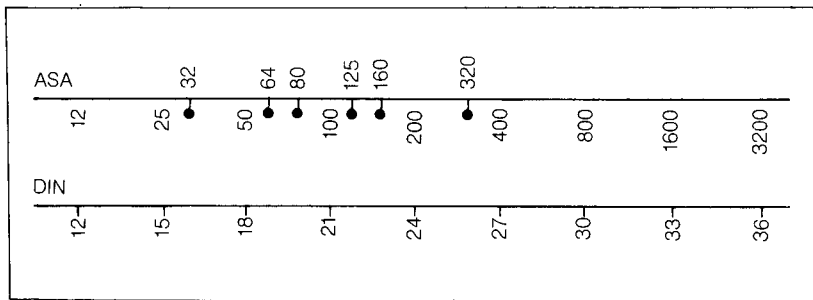
1. Set the shutter speed selector of the camera to 1/60 second for electronic flash units, Class M and Class F bulbs, and to 1/125 second for FP bulbs.
2. Set the shutter speed selector ring of the TTL exposure meter to a setting within the speed ranges indicated in the table.

Shutter speed Flash bulb	Yellow				White				Red	White				
	B	4S	2S	1	2	4	8	15	30	60	125	250	500	1000
X contact (Electronic flash)	[Shaded area from 1/60 to 1/1000]													
FP bulb	[Shaded area from 1/60 to 1/125]													
M bulb	[Shaded area from 1/60 to 1/30]													
F bulb	[Shaded area from 1/60 to 1/30]													

NOTE

For electronic flash units slower than 1/1000 second, use shutter speeds from 4 sec. to 1/30 sec.

ASA/DIN FILM SPEED CONVERSION TABLE



SPECIFICATIONS

Measurement Method...	Average reading full aperture exposure measurements.
Measurement Range ...	EV 4 to 17 (with ASA 100 film)
Scales.....	Aperture scale: F2 to F64 (with half-stops) Shutter speed scale: 2 sec. to 1/1000 sec. (with half-stops) Film speed scale: ASA 12 to 3200 (DIN 12 to 36) Lens speed scale: F2 to F8
Eyepiece Adjustment ...	Diopter adjustments are approximately -3 to +3 diopters.
Battery	Two 1.5-volt silver oxide batteries (Eveready S-76, UCAR S-76, Mallory MS-76, or equivalent)
Size	137mm wide×75mm long×113mm high (including eyepiece) (5-3/8×3×4-1/2in.)
Weight	585g. (20oz.)