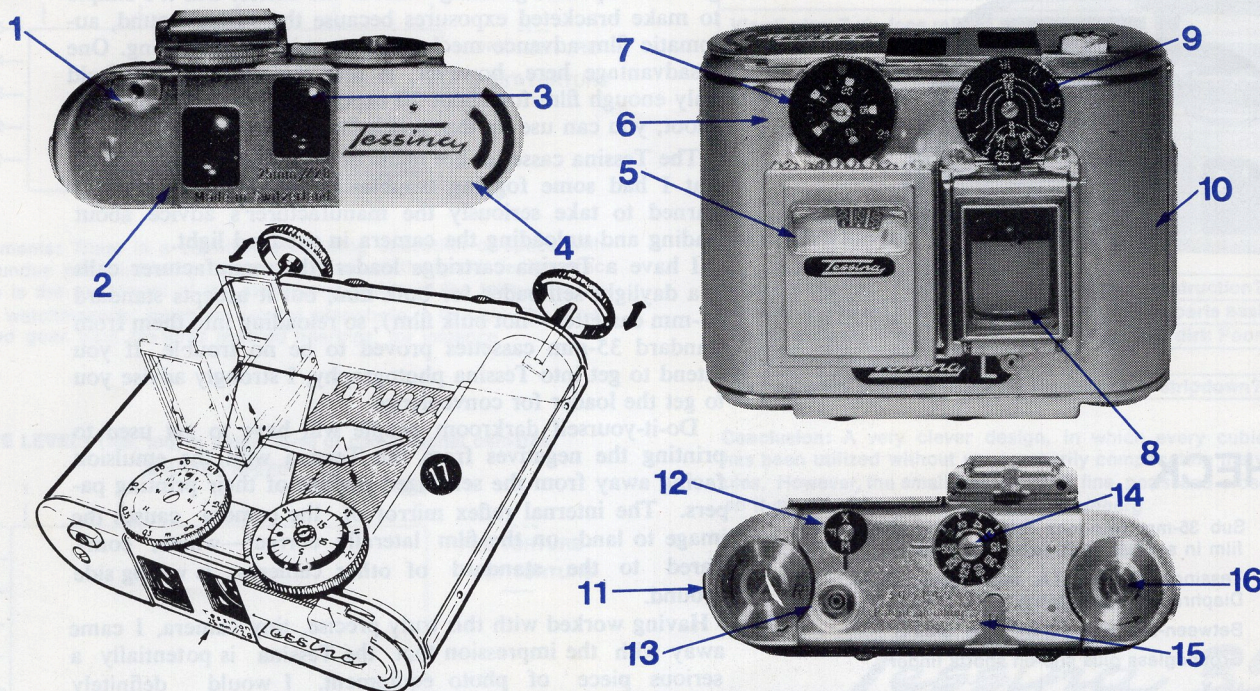


Tessina 35

WORLD'S SMALLEST 35 MM CAMERA



1. Release button
2. Viewing lens
3. Taking lens
4. Sliding lens cap
5. Exposure meter
6. Diaphragm scale
7. Exposure counter
8. Reflex and sports finder
9. Distance scale and depth-of-field indicator
10. Lock for camera back
11. Rewind knob
12. Synchronization dial
13. Flash contact
14. Shutter speed dial
15. Rewind release lever
16. Motor winding knob
17. Tessina 35 schematic showing twin lens reflex system

A Technical Miracle of Swiss Chronometer Precision. carried as conveniently as a wallet, watch, lipstick or pack of cigarettes—always ready to shoot—anytime, anywhere.

SMALLER AND LIGHTER: Lightweight (5½ ounces), compact (2½x2x1¼"), smaller than a pack of cigarettes, and any 16mm subminiature camera, but . . .

LARGE IMAGE: 14x21mm picture is 2 to 3 times larger than that of other subminiature cameras.

CHOICE OF 35mm FILM: Takes any standard 35mm color or black and white film, but . . .

MORE ECONOMICAL: Same film length renders 2½ to 3 times as many pictures as standard 35mm camera.

EVER READY: Pressing the button takes the picture, counts the exposure, transports the film and cocks the shutter, readying the TESSINA for the next shot.

AUTOMATIC FILM TRANSPORT: Swiss precision miniature motor provides 8-10 pictures without rewinding, ideal for rapid action photography.

AUTOMATIC LIGHT READING: TESSINA 35 L with cross-coupled exposure meter.

TWIN-LENS REFLEX: 2 reflex systems with parallax-corrected lenses.

NEEDLE SHARP: High resolution TESSINON 25mm f/2.8 renders precise color fidelity, critical sharpness and authentic contrasts, suitable for bigger-than-life-size enlargements and projection. Angle of view 53°.

GROUNDGLASS IMAGE: Through-the-lens viewing for accurate framing, focusing and depth-of-field control.

CHOICE OF DISTANCES: Continuous focusing from infinity down to 9" for close-ups, but TESSINA may also be PRESET for universal distance range.

CHOICE OF LENS STOPS: From f/2.8 to f/22.

CHOICE OF SPEEDS: Swiss precision movement with speeds from ½-1/500 seconds and B.

CHOICE OF SYNCHRONIZATION: M or X, attachable Tessina flashgun.

CHOICE OF FINDERS: Reflex and Sports-finders permit waist level, eye level and 90° angle shots, 8X magnifier or 6X prism-finder.

CHOICE OF FILTERS: Yellow, green, red.

CANDID SHOTS: In your hand or pocket, on its wrist-strap or neckchain, the TESSINA is ideally suited for taking unsuspected pictures.

JEWELLED MECHANISM: Ruby stones as used in fine Swiss watches eliminate friction and wear, guarantee smooth operation.

EASY PROCESSING: Any finisher who processes 35mm film—any 35mm tank.

CHOICE OF ENLARGER: Giant enlargements, up to 20x24" and beyond, with standard 35mm enlargers.

CHOICE OF PROJECTOR: Any 35mm projector, with cardboard or glass mounts and NEWTON-ring-free glass.

EASY FIT: Can be conveniently carried all year, in coat, hip or shirt pocket, on your belt, in a lady's purse, folio, etc.

EASY TO USE: Detachable plate on camera with brief instructions for use.

CHOICE OF COLORS: The TESSINA is available in chrome, black, red or gold finish.

CHOICE OF NOISE REDUCED AND NOISE FREE MODELS.

PROTECTION: Shockproof construction withstands the most rugged use, for lifelong durability.

SWISS CHRONOMETER PRECISION: Custom-built with meticulous precision like a fine watch, as only the famous watchmakers of Switzerland can do it.

SWISS QUALITY CONTROLS: Meeting the most rigid precision standards, every TESSINA is scrupulously quality controlled, carries a FULL 5 YEAR WARRANTY.

Tessina 35

THE ONLY SUBMINIATURE THAT REALLY MAKES SENSE!



FIELD CHECK

Camera Type:	Sub 35-mm twin-lens reflex, using 35-mm film in special 18-20 exposure cassettes.
Lens:	Tessinon 25-mm $f/2.8$; min. focus, 12 in. Diaphragm closes to $f/22$
Shutter:	Between-the-lens; 1/2 to 1/500, plus B
Viewfinder:	Groundglass plus slip-on sports finder
Flash Synchronization:	M, X
Film Transport:	Spring-wound automatic film advance and shutter cocking
Other Features:	Coupled meter (optional), cable socket
Weight:	5 1/2 oz.
Dimensions:	2 1/2x2x1 in.
Accessories:	Wrist strap, focus magnifier, tripod plate

When I was first asked to test the Tessina 35L, I didn't quite know whether to laugh it off or not. After all, what respectable pro would go out on a job with such a tiny camera? But it only took me a few rolls of film to gain a healthy respect for this precision device.

I got excellent 8x10s, using even fast films such as Kodak Tri-X, from the 14x21-mm Tessina negatives. Of course, the main secret is in the processing—fine-grain development, great care to equalize processing and washing temperatures—and a good, sharp enlarging lens. But, of course, your camera's lens must first resolve a sharp image on the film. And unless the shutter, diaphragm, and exposure meter are also functioning right on the button, no amount of critical handling in the darkroom can enable you to produce clean, sharp prints at the more than 12X magnification needed for an 8x10 print from the small Tessina negatives. The Tessina I tested was functioning with all systems "A-OK."

Because it is such a small camera, you can handle and carry the Tessina in a variety of ways. I chose a wrist strap, so that I could carry the camera around with me as if it were a watch. By wearing the Tessina just under my jacket sleeve until ready to shoot, I was able to get some interesting photos that larger, bulkier equipment would have made more difficult if not impossible. The fact that the camera was on my wrist somehow made using it seem less conspicuous than is the case with most other subminiature cameras.

If you are in the spy business, you probably already know that the camera can be focused as close as 12 inches. So far as focus is concerned, photographing papers and documents in tight areas is relatively easy. But the maximum lens aperture of $f/2.8$ makes the really dim-light situations a little tough.

Despite its smallness (or perhaps because of it, and the resulting low inertia of the camera) shooting at slower than 1/60 sec can lead to lack of sharpness. And when you've got such small negatives, sharpness is essential.

Both the coupled meter and the viewfinder hood will slip off the camera body. Taking them off makes for less bulk. Of course, without the hood, seeing through the small viewfinder groundglass becomes more difficult, and you have to be pretty good at exposure-guessing without the meter. But it's simple to make bracketed exposures because the spring-wound, automatic film advance mechanism permits fast shooting. One disadvantage here, however, is that the cassettes will hold only enough film for about 20 exposures. When you bracket-shoot, you can use up that much film quickly.

The Tessina cassettes are made of thin plastic, and I found that I had some fogging troubles at first—at least until I learned to take seriously the manufacturer's advice about loading and unloading the camera in subdued light.

I have a Tessina cartridge loader (the manufacturer calls it a daylight selfloader for bulk film, but it accepts standard 35-mm cassettes—not bulk film), so reloading into them from standard 35-mm cassettes proved to be no trouble. If you intend to get into Tessina photography, I strongly advise you to get the loader for convenience.

Do-it-yourself darkroom people will have to get used to printing the negatives from the Tessina with the emulsion facing away from the sensitized surface of their printing papers. The internal reflex mirror of the camera causes the image to land on the film laterally correct—which, compared to the standard of other cameras, is wrong side around.

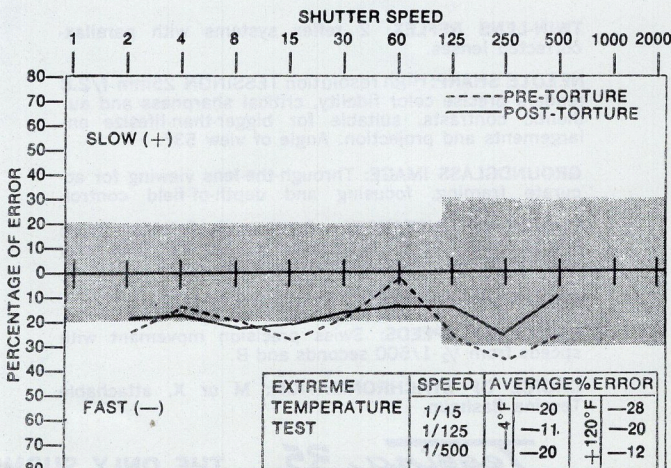
Having worked with this truly precise, tiny camera, I came away with the impression that the Tessina is potentially a serious piece of photo equipment. I would definitely choose the Tessina over the teenie-tiny format of most other subminiatures.—Harvey Zucker

INSTRUMENT READOUTS

CAMERA: TESSINA 35 No. 865643

LENS: 25-mm TESSINON $F/2.8$

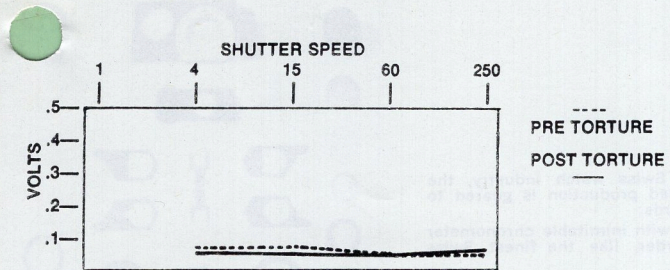
SHUTTER PERFORMANCE: Most errors are within tolerances; since all are on fast side, they can easily be adjusted for accuracy.



Suggested USA (formerly ASA) shutter accuracy standards are shown by shaded area. Higher speeds have more tolerance.

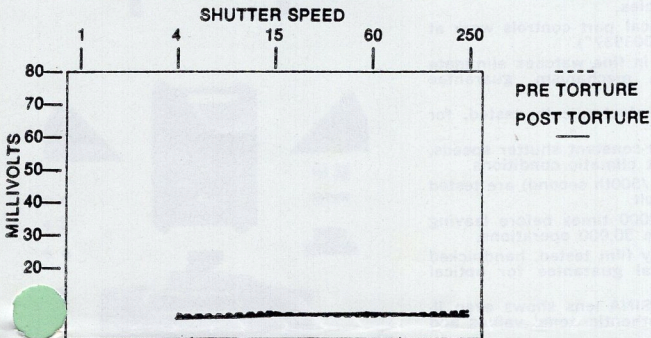
SHUTTER TRIP AND TRAVEL: The gentle release of the Tessina is especially appropriate for the low inertia of this tiny camera.

VIBRATION LEVEL: The Tessina shows less vibration than all the more conventional cameras tested, putting it in the Minox league.



Comments: There is a confidence-inspiring utilization of space without undue miniaturization of parts. Typical of the good design practices is the placement of the mainspring inside of the take-up spool. The watchmaker's touch is evident elsewhere, though—the slow-speed gear train features jeweled bearings, for instance

NOISE LEVEL: This, too, is below level of conventional cameras.



Noise and vibration standards do not exist, but relative levels become evident when charts for several cameras are compared.

METER SPECIFICATIONS:

Type: Selenium	Zeroing provision: No
Accuracy: Within 1/4 stop	Parallax: No
ASA range: 12-800	Battery test: —
Acceptance angle: 40 degrees	
Response discrimination: Good	
Accessories: None	Scale legibility: Fair
Movement balance in various positions: Fair	

LENS PERFORMANCE: Because of the camera's design, the mirror that "folds" the image was considered to be part of the optical system, and therefore all tests performed included the mirror in the system. When off-axis tests were at first somewhat disappointing, the mirror was suspected. Sure enough, there was a smudge on it—my fault. Results with a clean mirror were very much improved. So, take care: when changing film, keep your fingers clear of the mirror chamber to assure the best possible results.

Electronic bench tests indicate that the lens has very good contrast, with the center region peaking at *f*/4. Even at the short edge of the frame (which is quite a pronounced oblong), the optimum was reached by *f*/5.6. On the long side of the oblong, where the lens must cover a field of more than 47 degrees, *f*/8 was needed to optimize performance.

The lens appears to be up to yielding good results on the small, 14x21-mm negative. Color fans should be pleased with it too, as the residual chromatic aberrations were very small.

All of this speaks well for the entire system, both lens and mirror. The mirror has just as important a role as the former and too often is considered to be a non-critical component. A mirror not perfectly flat, when placed in the ray-path of a lens, can introduce aberrations (astigmatism, etc.) of which the lens itself may not be guilty.

Conclusion: Because of the small negative, the camera requires a very well corrected lens to answer the demands of greater than average enlargements. This lens can meet those demands.

MISCELLANEOUS DATA

MISCELLANEOUS DATA		PRE-TORTURE			POST-TORTURE		
Focusing System: Groundglass and Sports Finder							
Range Accuracy over range		1 ft—∞			1 ft—∞		
		∞	5M	1M	∞	5M	1M
		OK	OK	OK	OK	OK	OK
Shutter-trip force:		265 gm			250 gm		
Shutter-trip travel:		1-1/2-mm			1-1/2-mm		
Self-timer:	Minimum	—			—		
	Maximum	—			—		
Viewfinder: Twin-lens reflex							
Framing Accuracy		OK			OK		
Parallax Corrected		No			No		
Synchronization: Std. PC outlet							
Flashbulb		8 msec			7 msec		
Strobe		0.0 msec			0.0 msec		
Contact Resist		0.4 Ω			0.5 Ω		
Insulation		OK			OK		

STRIPDOWN REPORT

	Interior	Exterior	
Material choice:	Good	Good	Modular construction? Yes
Assembly, Finish:	Good	Good	Replace key parts easily? Yes
Repair access: Good			Seal against dirt: Poor
Adjustment provision: Good			
Do frequently made adjustments require major stripdown? No			

Conclusion: A very clever design, in which every cubic centimeter has been utilized without unnecessarily complicating the various modules. However, the small size dictates fine parts, and close tolerances, so it *must* be kept clean —Norman Goldberg

THE INIMITABLE

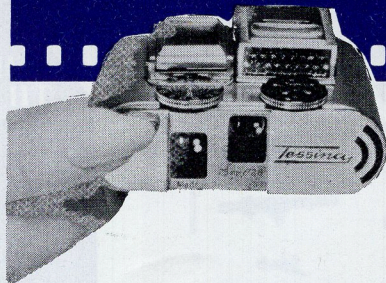
Tessina 35

NEGATIVE-LY SPEAKING

9.5mm	NO
16mm	NO

AND...POSITIVE-LY SPEAKING

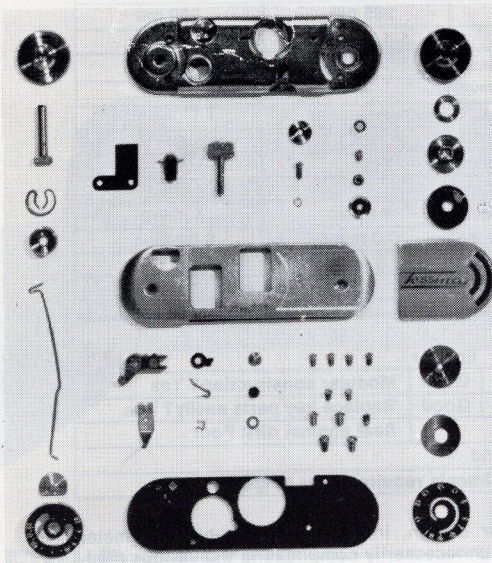
35mm	YES
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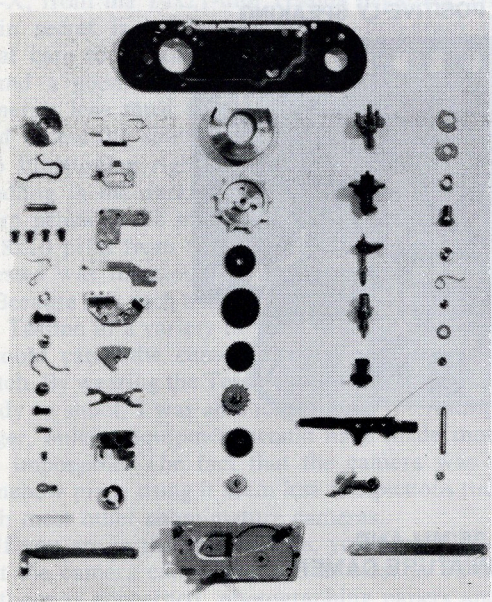
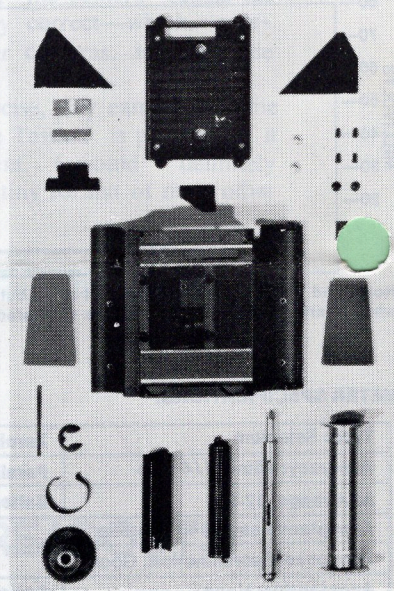
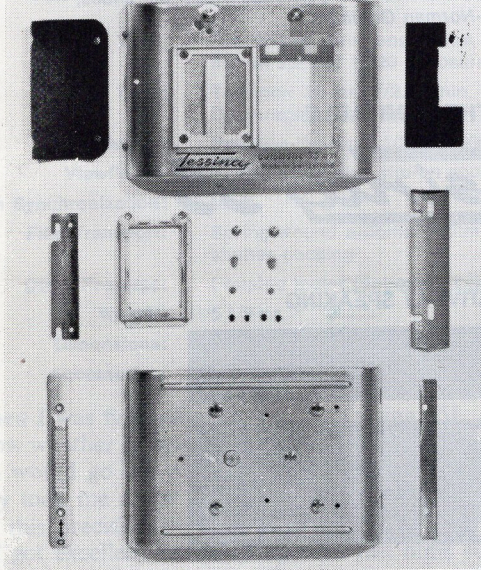
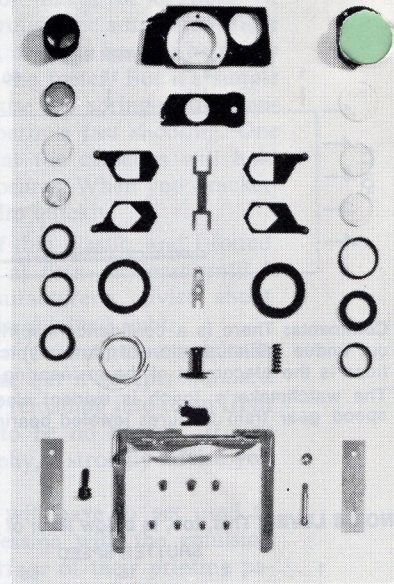
35 MM AND
SUBMINIATURE CAMERA

...USES ANY 35 MM FILM,
PROCESSED ANYWHERE

Tessina 35 A MASTERPIECE OF PRECISION + QUALITY CONTROLS



1. Located in the heart of the Swiss watch industry, the TESSINA factory with its limited production is geared to the most rigid precision standards.
2. Each TESSINA is custom built with inimitable chronometer precision, literally to your order, like the finest Swiss watch.
3. TESSINA'S highly skilled Swiss master craftsmen are trained in the art of watchmaking during half their lifetime.
4. Each TESSINA part, gear, pinion, etc. is manufactured with the same tolerances as those for Swiss watches, supplied by the TESSINA factory for many decades.
5. Manufacturing a TESSINA means meticulous assembling of close to 400 minute precision parts.
6. TESSINA camera makers work with a watchmakers magnifying lens attached to their eye all day.
7. Each TESSINA part is individually quality controlled twice, during manufacturing and before assembling.
8. TESSINA parts are made of highest quality material, with chrome, nickel or even gold finish to prevent oxydation, for lifelong service.
9. TESSINA precision parts are cleaned with an ultrasonic machine, operating at 500 Kilocycles.
10. High precision machines for critical part controls work at tolerances up to 1/1000mm (0.00003937").
11. Ruby stone jewels such as used in fine watches eliminate friction and wear of TESSINA mechanism, guarantee smooth operation.
12. All TESSINA shutter speeds are electronically tested, for utmost accuracy.
13. Special lubricants guarantee near-constant shutter speeds, even under extremely cold or hot climatic conditions.
14. M and X synchronization (up to 1/500th second) are tested at a low 4 Volt and a high 500 Volt.
15. TESSINA shutters are released 2000 times before leaving factory, are geared for more than 50,000 operations.
16. Each TESSINA lens is individually film tested, handpicked for you, carries an unconditional guarantee for optical excellence.
17. Numbered testfilm for each TESSINA lens shows even illumination, critical sharpness, authentic tonal values and perfect contrast.
18. Exceptionally solid construction withstands the most rugged use, for lifelong durability.
19. Over 50% of factory personnel is engaged in the most severe, total quality controls, using highly specialized testing instruments.
20. TESSINA WARRANTY FULL 5 YEAR BUYER PROTECTION.



Tessina 35
THE ONLY SUBMINIATURE
THAT REALLY MAKES SENSE



karl heitz
Inc.

**35
YEARS**

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