Modern Photography's Annual Guide to 47 Top Cameras

Those fearless folks are at it again—trundling out on the old limb, boldly presenting the latest crop of the "best." We note with some small amount of pride, though, that the brickbats hurled at us in the past have been fewer and softer of late. For one thing, our predictions have been coming through with more regularity; for another, there's a tendency to equate the newest with the best. For the past few years the newest has meant our group one—the 35mm automatic SLR's. This year is no exception as the dual trends of automation and electronics continue.

Four new members of the club are auto models, including the Fujica ST901 with its jazzy calculator-style digital shutter-speed readout, and the just-introduced Vivitar 650/SLX (in reality, the Cosina) that barely managed to squeak in under our deadline. Polaroid revived an old concept, namely manual operation, and so its new Model 195 joins the SX-70, increasing the instant-picture category 100 percent.

New to our listing are several variations on past themes, good cameras that have been improved. To wit, the Canon FTbn, the motor-driven Olympus OM-1 MD, and another that also just got in under the wire—Leicaflex SL 2.

Finally, we welcome with outstretched format the Widelux F-7 super-wide panoramic 35. While 2¼ x 2¼ roll film is alive and well, two of its practitioners, sadly, departed: the uniquely-shaped Linhof 220 and the Norita 120 SLR which just couldn't find a home here. 110-cartridge-loading cameras are on the rise, but the lack of space and earthshaking news (still waiting for a 110 SLR) force us to leave that group out for now.

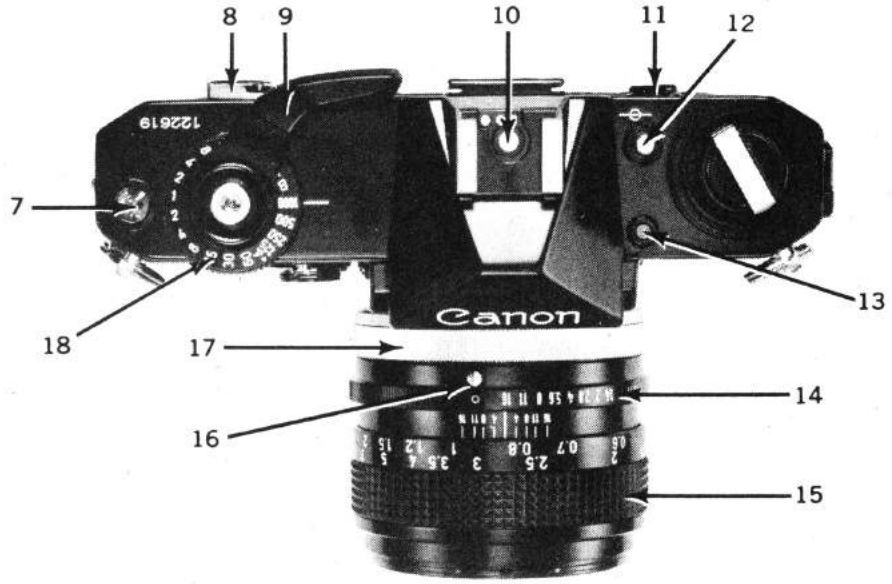
To join the Top 47 club, a camera, besides being new and technologically exciting, must be the top of its line. Its lens, meter and general operating performance must be considered acceptable by professional standards. It must also be a nationally-advertised brand and not available, under a store brand name, from single retail outlets only. Still, it's quite possible we left your favorite camera out. But remember, your experience with a camera that gives you good results is what counts, and the devil take our slightly personal choices.

—THE EDITORS

CANON EF

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.4 S.S.C. Canon FD in interchangeable breech-lock mount, apertures to f/16, focusing to 18 in.
SHUTTER: Metal-blade Copal-Square S focal-plane with mechanically-timed speeds from ½ to 1/1000 sec., electronically-timed speeds from 1 to 30 sec., X sync.
VIEWING: Non-interchangeable eye-level prism with central microprism, fine-focusing collar.
OTHER FEATURES: Fully automatic (you set shutter speed, camera selects aperture), single silicon cell above eyepiece reads center-weighted area of focusing screen for automatic-exposure control, manual override, shutter speeds and apertures visible in the finder, exposure hold button, high and low-light warning signals, provision for multiple exposures, hot flash shoe, automatic first-frame positioning, long exposure and battery-check diode, self-timer, preview lever.
PRICE: With 50mm f/1.4 lens, $645; with 50mm f/1.8 lens, $580.
MANUFACTURER: Canon Camera K.K., Tokyo, Japan.
IMPORTER: Canon USA Inc., 10 Nevada Dr., Lake Success, N.Y. 11040.
PHYSICAL DIMENSIONS: 6 in. wide, 3¾ in. high, 3¾ in. deep. WEIGHT: 2 lb. 6 oz.

1. Diaphragm mode/mirror-lock lever. **2.** Stop-down metering/self-timer lever. **3.** Shutter-release button. **4.** Folded rewind crank. **5.** Covered PC outlet. **6.** Neck-strap eyelet. **7.** Frame counter. **8.** Meter on/off switch. **9.** Film-advance lever. **10.** Canon CAT/X hot shoe. **11.** Flash mode selector. **12.** Battery check button. **13.** Battery check lamp. **14.** Aperture ring. **15.** Focusing collar. **16.** Auto-exposure lock pin. **17.** Breech-lock ring. **18.** Shutter-speed dial.



Undoubtedly, the Canon EF is made and finished to a higher standard than most automatic SLR's—the very same standard as the Canon F-1.

Canon had no intention of producing a me-too automatic. To the basic so-called shutter-speed-preferred range from ½ to 1/1000 sec., they have added an additional range of electronically-timed shutter speeds from 1 sec. to 30 sec., have substituted a fast-acting single low-light-reading silicon cell in place of the traditional pair of CdS cells. By locating it above the eyepiece, they've made it less prone to inflated readings caused by extraneous light.

The operation of the automatic-exposure control is simplicity itself. Looking into the finder, you select the shutter speed by turning the shutter-speed disc, and the needle on the right-hand aperture scale selects the proper aperture for a center-weighted reading. All Canon FD lenses can be used automatically on the EF camera. Earlier FL lenses must be metered at the working aperture, however.

In terms of accuracy, the Canon EF did very well. As measured on our Kyuritsu equipment, meter readings through the finder were generally within one-third f/stop of a measured source throughout the range. Our extensive field tests made on color transparency film showed excellent automatic-exposure results. Of course, none of this would have been possible without an extremely accurate shutter—perhaps the best adjusted Copal-Square shutter we've ever tested. Accuracy was generally within 10 percent of measured speeds with only the 1/500 and 1/1000 sec. slightly over that.

For special exposure situations where you wish to "hold" a reading, there is an exposure-hold button between the meter prism and the rewind knob.

The EF's top-mounted hot shoe accepts the special Canon Automatic Tuning electronic flash units which provide automatic flash exposure. A switch at the back of the camera shifts exposure from normal to CAT flash, Canon's autoflash system.

Producing double exposures couldn't be much easier. The hub of the combined meter on-off switch, shutter button and wind-lever lock at the back of the camera has a small button which, when pressed, allows you to recock the shutter with the rapid-wind lever while the film and frame counter remain stationary.

Gold stars go to the writers of the EF's instruction book, one of the few we've seen for an automatic camera that clearly sets forth in chart form the exact apertures and shutter speeds available in the auto-exposure mode for all film ASA indexes. Nevertheless, we would have preferred to see this coupling range information somewhere in or on the camera itself.

FUJICA ST901

TYPE: 35mm eye-level single-lens reflex.
LENS: 55mm f/1.8 or f/1.4 EBC Fujinon with interchangeable thread mount, stops to f/16, focusing to 17 in.
SHUTTER: Electronically-controlled cloth focal-plane with speeds from 30 to 1/1000 sec., mechanical manual speeds from 1/60 to 1/1000 sec. plus B, FPX sync, self-timer.
VIEWING: Non-interchangeable eye-level prism with central split-image rangefinder, microprism collar, fine-focusing collar, full focusing screen.
OTHER FEATURES: Fully automatic electronic exposure system (aperture-preferred) with manual override, Silicon Blue cells on either side of finder eyepiece read entire viewing area at full aperture, automatic shutter speed to be set is visible in finder, built-in viewfinder blind.
PRICE: With 55mm f/1.8 EBC Fujinon, $545; with 55mm f/1.4 EBC Fujinon, $605.
MANUFACTURER: Fuji Photo Film Co., Ltd., Tokyo, Japan.
IMPORTER: Fuji Photo Film U.S.A., Inc., 350 Fifth Ave., New York, N.Y. 10001.
PHYSICAL DIMENSIONS: 5¼ in. wide, 3⅝ in. high, 3 9/16 in. deep. WEIGHT: 2 lb.

For over 20 years, prophets of future camera designs have imagined a camera with digital numbers illuminated in the finder. How much easier it would be if numerals flashed on the screen instead of forcing users to read a scale with a needle! Now the prophecy has come true in an SLR which is, in many other ways as well, ahead of other electronically-controlled automatic-exposure SLR's. Not only does the Fujica ST901 offer a bright red diode digital readout of the shutter speed being set, but it incorporates other advances. One major advantage is traceable to the adoption of a Silicon Blue cell metering circuit with a very efficient amplifying system that provides meter readings of a greater exposure range than is available in other SLR's with CdS circuitry. And the silicon circuit reacts more swiftly in low light.

In form, controls and general operation, the ST901 is like the diminutive Fujica ST801. It's the same size, only 1 oz. more, and has an equally quiet shutter.

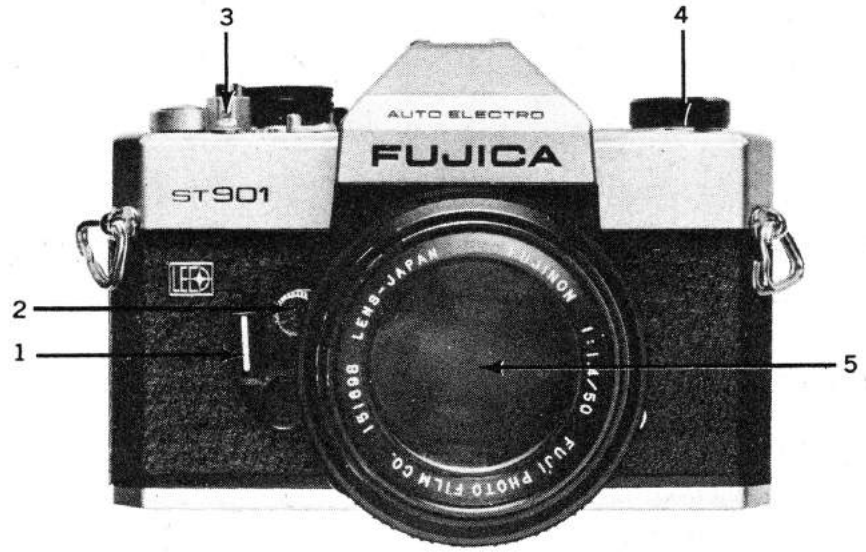
In operation, you turn the top shutter-speed dial (7) to the "auto" setting. Now look through the finder. Nothing unusual yet. The disc at the left is marked with a yellow "A" indicating you're on automatic exposure. Protruding centrally down from the top of the screen is a black rectangle. Here the ST901's most significant feature is destined to appear.

Press the shutter release (8) slightly and the shutter speed appears along the top of the finder, glowing bright red in the squared-off digital style we've become accustomed to in pocket computers. Turn the aperture ring (15) and the digital numbers start changing faster than the blink of an eye. Anything from 20 sec. to 1/1000 sec. may appear; a 0- appears after the 1000 to indicate too much light.

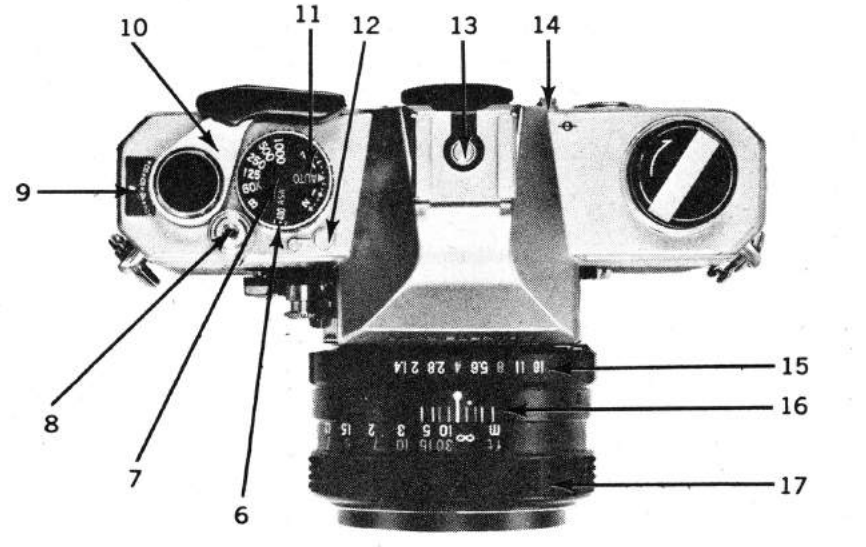
The ST901 has a good compensation system consisting of a variation of up to two f/stops under or overexposure when in the fully automatic mode. You just push the shutter-speed Auto-Manual switchover lever (12) in front of the shutter-speed dial (7) towards the dial. This unlocks the dial from the auto position. Now you turn the dial to the right or left, to the marked plus or minus two f/stops (11). There are in-between dot markings of ⅓ f/stop increments. Inside the finder, the left indicator disc will show the variation you've set.

The camera can also be used on manual exposure. When the shutter-speed dial is shifted to the 1/60-1/1000 sec. range, the mechanical shutter mechanism takes over. The speeds are available whether the battery is alive or dead, in or out, but the metering system becomes inoperative in the latter case.

While the ST901's digital readout is not continuous (it consists of 14 steps) and some speeds displayed aren't conventional (e.g., 1/10 sec.), it's still the most advanced metering concept we're likely to see on the market for quite a while.

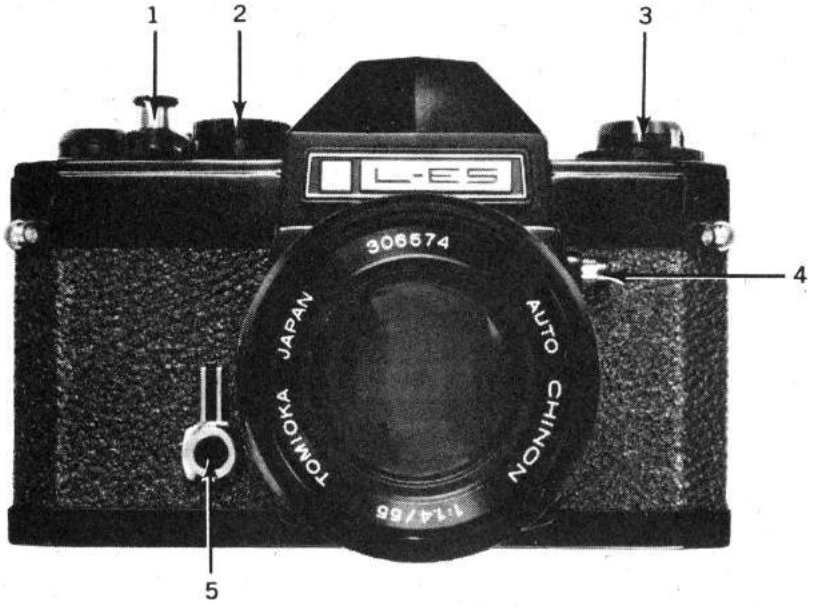


1. Self-timer lever. **2.** Depth-of-field preview button. **3.** Shutter-release lock. **4.** Film-rewind crank. **5.** 50mm f/1.4 EBC Fujinon lens. **6.** ASA film-speed window. **7.** Shutter-speed dial. **8.** Shutter-release button. **9.** Frame counter. **10.** Rapid-wind lever. **11.** Exposure-compensation scale. **12.** Automatic-mode release lock. **13.** X-sync hot shoe. **14.** Viewfinder eyepiece blind lever. **15.** Aperture-setting ring. **16.** Depth-of-field scale. **17.** Focusing ring.

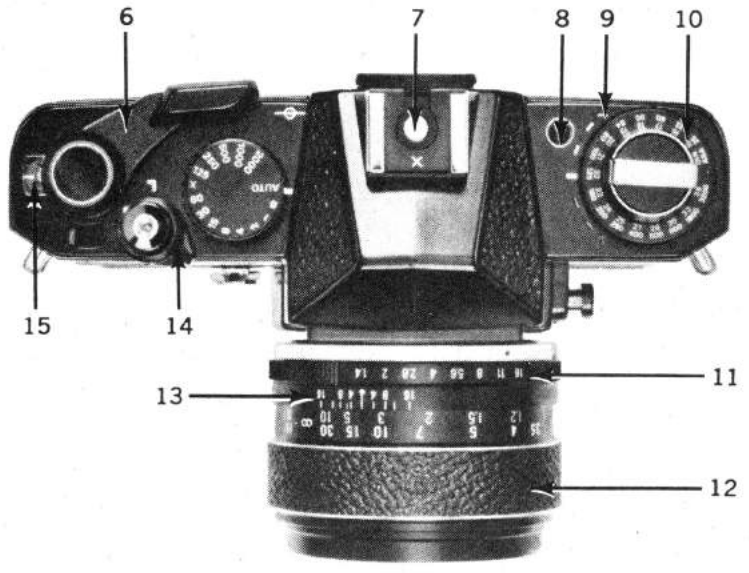


GAF LE-S

TYPE: 35mm eye-level single-lens reflex.
LENS: 55mm f/1.4 Auto Chinon Tomioka in interchangeable screw-thread mount, stops to f/16, focusing to 19 in.
SHUTTER: Electronically-timed Copal Square SE metal-blade focal-plane with speeds from 2 to 1/2000 sec. plus B, FP and X sync.
VIEWING: Non-interchangeable eye-level prism with central microprism, fine-focusing collar, full focusing screen.
OTHER FEATURES: Silicon Blue cells on either side of eyepiece measure center-weighted area of focusing screen at shooting aperture for automatic "you set aperture, camera sets shutter speed" exposure, shutter speeds, over and underexposure areas visible in finder, exposure hold button, exposure adjustment dial, provision for intentional double exposures, shutter-release lock, battery check, hot shoe, accessory eyepiece blind.
PRICE: $419.
MANUFACTURER: Chinon International Corp., Tokyo, Japan.
IMPORTER: GAF Corporation, 140 West 51st St., New York, N.Y. 10020.
PHYSICAL DIMENSIONS: 5¾ in. wide, 3⅞ in. high, 3⅝ in. deep. WEIGHT: 2 lb. 9 oz.



1. Shutter release. **2.** Shutter-speed dial. **3.** Folded rewind crank. **4.** Exposure hold button. **5.** Self-timer. **6.** Rapid film-wind crank. **7.** Hot sync shoe. **8.** Battery check button. **9.** Exposure compensation marks. **10.** ASA film-speed dial. **11.** Aperture setting ring. **12.** Focusing ring. **13.** Depth-of-field scale. **14.** Shutter release lock. **15.** Frame counter.



In this new breed of auto-exposure SLR's, thanks to a fast-acting Silicon Blue cell circuit, you can focus at full aperture, press the shutter release slightly (causing the lens to close down to shooting aperture), and the meter automatically sets the shutter speed. A slight bit more pressure and the camera shutter is released, all in a split second if wished. Why all of this? To allow users of ordinary single-pin, screw-thread lenses to have most of the psychological advantages of full open-aperture metering. For a fraction of the cost of a full open-aperture set of lenses, a GAF LE-S owner can pick up a whole stop-down aperture lens outfit.

To make the rather longish 3mm shutter-release travel comfortable, the designers have built a comfortably large release button head. However, it will still take some practice before you are able to press the release down just to the point of full aperture closing without accidentally releasing the shutter—a minor price to pay for non-obsolescence plus auto exposure.

There are three alternative ways of setting exposure besides letting the aperture automatically determine the shutter speed needed, which is the normal method. You can vary the ASA settings in ⅓ or ⅔ f/stop increments (although the markings could be clearer); you can turn the shutter-speed dial off "auto" and use any of the electronically-controlled manual speeds from 1 to 1/2000 sec. (and the meter needle will still indicate the suggested proper speed); or you can press the hold button, very conveniently located on the camera's lens mount. When you do this, the reading made is locked in place. The meter needle also locks, indicating the speed held, and you can maintain this exposure as long as you keep the hold button depressed. To our knowledge, this is the only so-called aperture-preferred, auto-exposure camera which offers a locking indicator needle so you won't forget proper exposure.

The view through the finder is commendably bright; the shutter-speed scale is very large, bold and visible (although some eyeglass wearers may have to swivel their heads a bit to see it); the built-in provision for making intentional double exposures is easy to operate; the largish camera body is somewhat heavy, but comfortable to hold nonetheless. Less liked by some users may be the leather-covered focusing ring. While the lens on the two cameras examined did not mount on the bodies so as to have the center scale precisely at midpoint, this had no effect on picture taking but was simply a visible annoyance.

Shutter speeds were all within 10 percent of accuracy, meter readings were within ⅓ f/stop of absolute accuracy, and the meter was capable of reading down to ¼ sec. at f/1.4 with an ASA 400 film. The LE-S appears to be a very rugged, convenient, fast-operating automatic SLR.

HONEYWELL PENTAX ES II

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.4 Super-Multi-Coated Takumar with interchangeable thread mount, stops to f/16, focusing to 18 in.
SHUTTER: Rubberized, electronically-controlled focal-plane with speeds from 8 to 1/1000 sec., mechanical manual speeds from 1/60 to 1/1000 sec. plus B, FP, X sync.
VIEWING: Non-interchangeable eye-level prism with full focusing screen plus fine ground-glass collar, central microprism.
OTHER FEATURES: Fully automatic electronic exposure system, you-set-aperture type, with manual override, CdS cells on either side of finder eyepiece read entire viewing area at full aperture, automatic shutter speed to be set is visible in finder, built-in viewfinder blinds.
PRICE: $649.50 with 50mm f/1.4 SMCT lens; $599.50 with 50mm f/1.8 SMCT lens.
MANUFACTURER: Asahi Optical Co., Ltd., Tokyo, Japan.
IMPORTER: Honeywell Photograhphic Prod., P.O. Box 1010, 5501 South Broadway, Littleton, Colo. 80120.
PHYSICAL DIMENSIONS: 5⅝ in. wide, 3⅞ in. high, 3 11/16 in. deep. WEIGHT: 2 lb. 2 oz.

While the earlier ES model without self-timer has been selling well at discounted prices, the improved circuitry of the ES II does make it the best choice for 1975. You look through the viewfinder and see a shutter-speed scale from 1 to 1/1000 sec. You set your diaphragm to whatever opening you want and when you begin to press the shutter the meter needle inside indicates the exact shutter speed to be set. But these shutter speeds are not simply set speeds of 1/30, 1/60, etc., but speeds to give you precisely what exposure is needed: 1/38 sec., 1/64 sec., etc., thanks to the electronically controlled shutter.

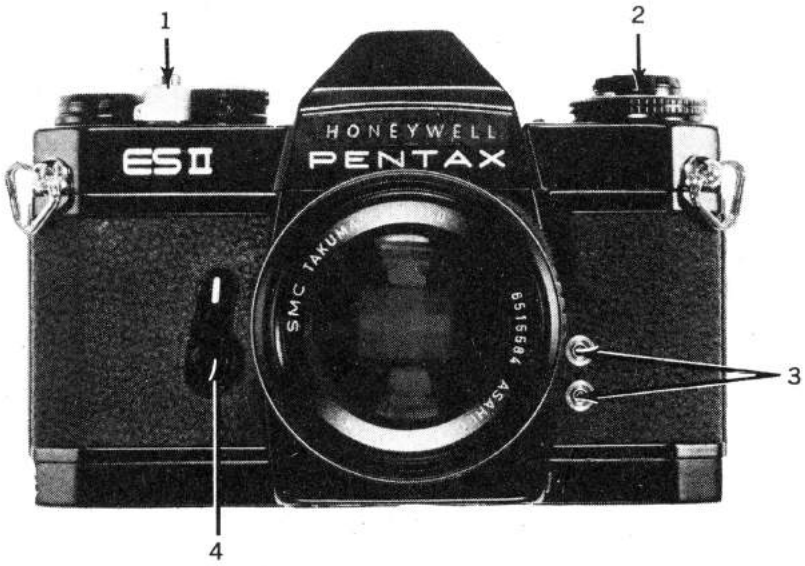
Now you decide to use an older Takumar lens or any lens that will fit the standard Pentax thread; put the camera on a bellows or a telescope or attach a 500mm f/8 mirror lens. The Pentax Electro Spotmatic will continue to give you full automatic exposure control. You only need the new Super-Multi-Coated Takumar lenses if you want full aperture exposure measuring. For all other lenses of any make you get automatic exposure at shooting aperture. If you feel that this automatic reading must be adjusted for special lighting situations (such as backlight), the ring around the rapid rewind crank can be set to give 2X, 4X or one-half the metered exposure. And if you want complete freedom from auto exposure or you've forgotten to change a dead battery, you shift the shutter-speed dial from its automatic exposure setting to any speed from 1/60 to 1/1000 and you have regular mechanical speeds.

To make room for the self-timer lever, Asahi has removed the 6-volt battery housing from the camera front and instead placed four 1.5-volt silver batteries in the bottom plate of the camera. To prevent light from entering the viewfinder and affecting auto exposure readings when your eye isn't at the finder, the shutter-speed dial now has a mark which, when set, causes the interior viewfinder blinds to close completely.

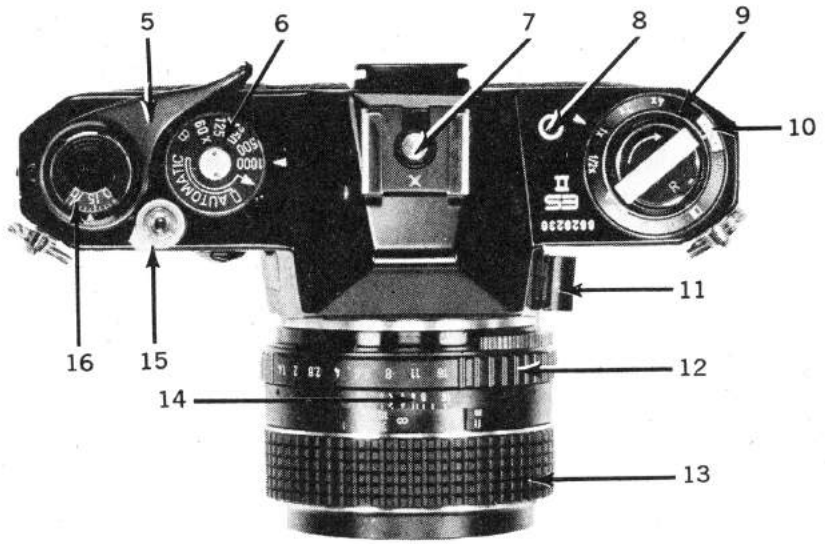
All of the new Super-Multi-Coated Takumars have the aperture lever at the back which will allow you to get fully automatic exposure at full aperture. If you have a regular Super Takumar, or any other screw thread automatic lens, you just push upward on the usual preview switch and the lens shifts to manual. The camera will operate automatically at stop-down aperture.

Although in actuality you will be setting the aperture and the camera will set the shutter speed, in a practical sense you can select your approximate shutter speed by just turning the aperture ring until the speed you wish to use appears in the finder. In the new ES II, speeds of 2, 4 and even 8 sec. are visible in the finder; in the former (now discontinued) ES, speeds shown were only to 1 sec.

The ES II, then, is an even more versatile camera than its immediate predecessor, the ES, and shows the way to the future.

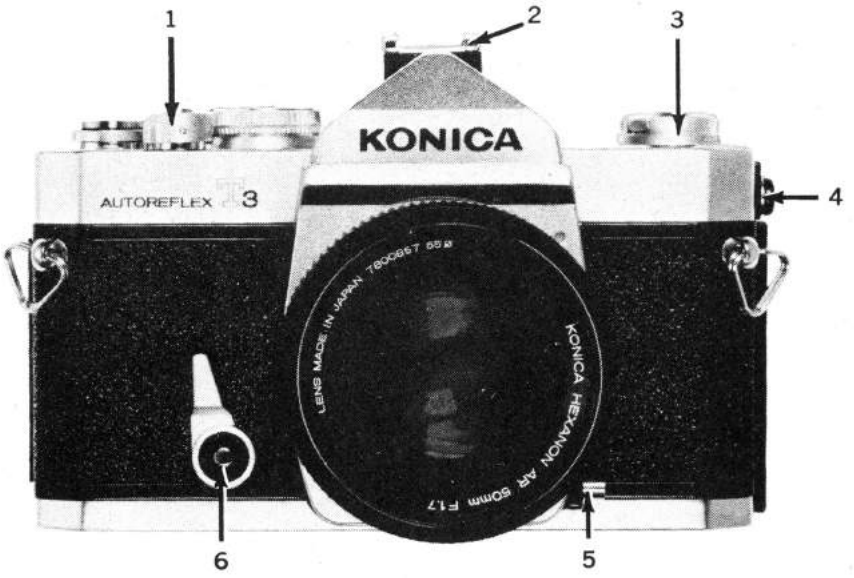


1. Shutter release. **2.** Folded rewind crank. **3.** Flash sync terminals. **4.** Self-timer. **5.** Wind lever. **6.** Shutter-speed dial. **7.** X-sync hot shoe. **8.** Battery test button. **9.** Exposure factor control dial. **10.** ASA film-speed indicator. **11.** Preview lever. **12.** Aperture scale. **13.** Focusing ring. **14.** Depth-of-field scale. **15.** Shutter-release lock. **16.** Frame counter.

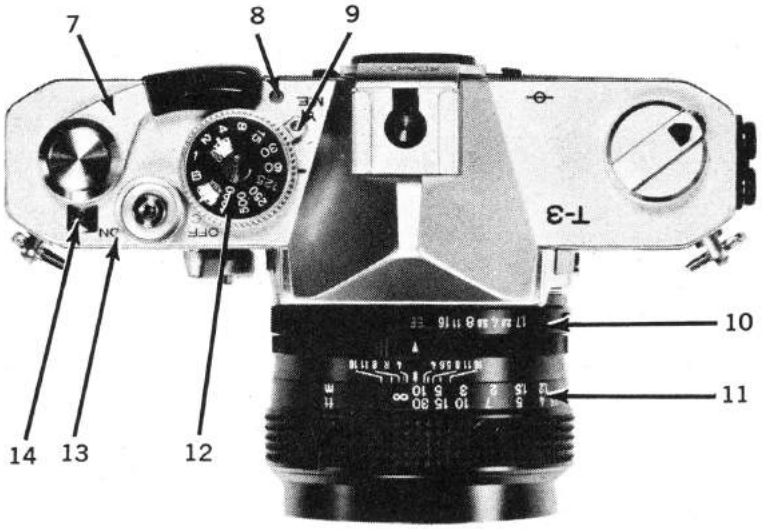


KONICA AUTOREFLEX T3

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.4 Hexanon in interchangeable Konica bayonet mount, stops to f/16, focusing to 18 in.
SHUTTER: Metal blade Copal Square S focal-plane with speeds from 1 to 1/1000 sec. plus B, MX sync.
VIEWING: Fixed eye-level prism with choice of either central split-image rangefinder or microprism, fine-focusing collar, full focusing screen.
OTHER FEATURES: Two 1.35v mercury batteries power CdS circuit with cells on either side of eyepiece which read specially-weighted area of focusing screen for fully-automatic exposure control, manual override, shutter speeds, apertures, high and low light warning signals, manual and automatic indicators visible in the finder, provision for double exposures, removable hot flash shoe provided, combined depth-of-field preview, self-timer and exposure hold lever, built-in film box end reminder clip, shutter-wind indicator.
PRICE: $460 with 50mm f/1.7 lens, $510 with 50mm f/1.4 lens, $600 with 57mm f/1.2 lens, $20 additional for black finish, $7 additional for split-image rangefinder instead of microprism.
MANUFACTURER: Konishiroku Photo Ind. Co., Tokyo, Japan.
IMPORTER: Konica Camera Co., P.O. Box 1060, Woodside, N.Y. 11377.
PHYSICAL DIMENSIONS: 5⅝ in. wide, 3¾ in. high, 3¾ in. deep. WEIGHT: 2 lb. 5½ oz.



1. Shutter release. **2.** Removable hot shoe. **3.** Rewind knob and crank. **4.** Sync terminals. **5.** Lens release button. **6.** Combined self-timer, exposure hold and preview lever. **7.** Wind lever. **8.** Shutter-wind indicator. **9.** Multiple exposure lever. **10.** EE and aperture-control ring. **11.** Focusing ring. **12.** Shutter-speed dial with ASA window. **13.** Shutter-release lock and T mechanism. **14.** Frame counter.



Konica, the pioneers of the automatic SLR, have been refining their design since the introduction of the Autoreflex T in 1968. The T2 in 1970 embodied significant improvements, but the T3 represents a substantial evolutionary advance. The Autoreflexes have been very popular and successful cameras, so let's see what Konica has chosen to add to an already well-proven design.

The shutter release is now far lighter and more sensitive, there's a meter circuit switch and a shutter-release lock which automatically turns itself on when the new plastic-tipped wind lever is moved outward. A removable hot shoe with automatic circuit disconnect has been added as well as a combined needle lock, self-timer and depth-of-field preview lever. The ASA range has been increased from 25—1600 to 12—3200. A film and shutter-wind indicator have been added, as well as a magnified exposure counter, a built-in film type box end holder, larger sturdier neckstrap lugs with steel inserts, a larger finger recess for the rewind button, a better centered tripod socket, a battery check atop the camera, provision for time exposures as well as bulb, a newly-designed film supply chamber contour, wider light-baffling rims on the camera back, improved position of the sync terminal and newly-formulated 50mm f/1.7 and f/1.4 lenses.

For those of you seeking the basics which made the original T so successful and are retained here, we would mention the fully auto exposure system in which you set the shutter speed and the camera's meter sets the correct aperture. The camera has unusually large scales in the finder and safety release buttons on each lens to prevent you from accidentally slipping off the EE setting.

In practical picture-taking the T-3 proved even more convenient than the T or T2; the metering system readout was accurate to within ½ f/stop over its entire range; shutter speeds were almost dead accurate save for a 10 percent deviation at 1/125 sec., well within tolerances. The lens we tested, the new 50mm f/1.4, proved to be an optic which can hold its head high among its peers, both mechanically and optically.

At the introduction of the T-3 we did find that the much more precise auto diaphragm-tripping mechanism would not properly operate some older Konica Autoreflex lenses. However, we're happy to report that full-production-run cameras do work well with all lenses made for the T and T2 cameras. Caution is advised in purchasing lenses by independent makers. Be sure they work before you buy.

MINOLTA XK

TYPE: 35mm eye-level single-lens reflex.
LENS: 58mm f/1.2, 50mm f/1.4 or f/1.7 MC Rokkor with interchangeable bayonet mount, stops to f/16, focusing to 2 ft. (with 58mm f/1.2), to 1.75 ft. (with 50mm f/1.4 and f/1.7).
SHUTTER: Titanium, electronically-controlled focal-plane with speeds from 16 to 1/2000 sec. plus B, FPX sync.
VIEWING: Interchangeable eye-level prism with interchangeable screens, central split-image rangefinder with full area fine-focusing screen.
OTHER FEATURES: Two 1.5-volt silver oxide batteries power CdS circuit with cells in forward and rear of prism measuring entire screen with contrast light compensation at full aperture, automatic exposure with electronically controlled shutter, manual control with match needles, four-stop auto exposure override control, shutter speeds, apertures, underexposure diode warning light visible in finder, provision for multiple exposures, hot shoe sync, mirror lockup, battery-check switch and lamp, eyepiece shutter, self-timer.
PRICE: $873 with 58mm f/1.2 MC Rokkor-X, $798 with 50mm f/1.4 MC Rokkor-X, $753 with 50mm f/1.7 MC Rokkor-X; all equipped with Auto Electro Finders.
MANUFACTURER: Minolta Camera Co., Ltd., Osaka, Japan.
IMPORTER: Minolta Corp., 101 Williams Drive, Ramsey, N.J. 07446.
PHYSICAL DIMENSIONS: 5⅞ in. wide, 4⅜ in. high, 3¾ in. deep. WEIGHT: 43½ oz.

The Minolta XK is not the first fully-automatic single-lens reflex with an electronically-timed shutter allowing you to set the aperture while it selects the shutter time. However, none of the others offer interchangeable finders and screens or the sophistication and photographic flexibility of the new Minolta XK.

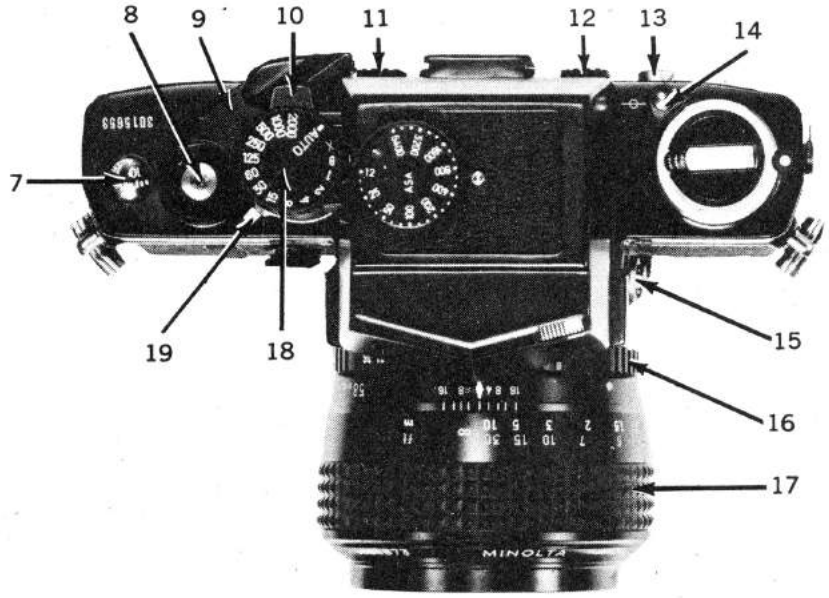
In producing a fully-automatic SLR system camera, the Minolta engineers have elected to employ a camera design in which the metering and control systems are located in the interchangeable prism head—the same basic system used in the Nikon F2. The disadvantages: some additional bulkiness and the admitted loss of the metering system whenever the prism is removed. Advantages: fully interchangeable meter heads and screens.

Though internally complex, the operation of the XK could hardly be more straightforward. Set the film speed on a click-stopped dial atop the prism, set the shutter to "Auto," select a shooting aperture and you're ready to go. As you grip the camera normally, your right hand will almost always come to rest on a long rectangular spring-loaded "Senswitch" at the front of the camera body to the right of the self-timer, thereby activating the meter. And, by the time you've brought the camera to eye level, the moving black needle to the right of the finder area will have come to rest opposite an automatic, camera-selected shutter speed (1-1/2000 sec.) marked on a vertical illuminated black-on-white scale. Should you want to change the automatically-selected shutter speed while in "auto exposure" mode, just grasp the lens' aperture ring and turn it until the needle points to the shutter speed you require under the circumstances.

Shutter speeds and a metering index are not the only data visible in the XK's AE (auto exposure) finder. You can also see the aperture you've set on any MC Rokkor lens you mount. The system used is similar to that in the Minolta SRT-102. A prism nestled under the finder housing reflects the number directly off the lens' aperture ring into a small rectangular window just above the finder area. All scales, incidentally, are legible and quite visible at all times—even in rather dimly-lit situations.

Unquestionably, the Minolta XK represents an all-out effort by a conscientious and renowned manufacturer to produce a top-grade system camera competing with the world's best, and our essentially minor complaints hardly obscure this fact. The XK's overall lab performance certainly places it among the top contenders.

1. ASA film dial and focusing screen compensator. **2.** Folding rewind crank. **3.** Battery check lever and light. **4.** Preview/mirror-lockup button. **5.** Self-timer. **6.** Meter senswitch. **7.** Frame counter. **8.** Shutter release. **9.** Wind lever. **10.** Four f/stop manual override lever. **11.** Viewfinder shutter control. **12.** Meter switch. **13.** Prism release button. **14.** Hot shoe release lock. **15.** Lens release button. **16.** Aperture scale. **17.** Focusing ring. **18.** Shutter-speed dial. **19.** 2-16 sec. shutter-speed lever.



MIRANDA AUTO SENSOREX EE

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.8 or f/1.4 Auto Miranda E with interchangeable bayonet mount, stops to f/16, focusing to 17 in.
SHUTTER: Cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, FP, X sync.
VIEWING: Interchangeable prism and screen, central split-image rangefinder, fine-focusing collar, full focusing screen.
OTHER FEATURES: Fully automatic (you set shutter, camera selects aperture), with manual override, dual metering CdS circuit on mirror measures 3° central spot or weighted lower central section of picture area at full aperture, aperture scale, battery check, spot or averaging indicator, over and underexposure signals visible in finder.
PRICE: $374.90 with f/1.8 lens, $419.90 with f/1.4 lens; $392.50, $437.40 in black.
MANUFACTURER: Miranda Camera Co., Ltd., Tokyo, Japan.
IMPORTER: AIC Photo, Inc., 168 Glen Cove Road, Carle Place, N.Y. 11514.
PHYSICAL DIMENSIONS: 5⅝ in. wide, 3⅝ in. high, 3½ in. deep. WEIGHT: 2 lb. 3 oz.

Amid the current proliferation of auto-exposure cameras, the Miranda Sensorex EE stands as a product that evolved from non-automatic Sensorexes (which is evident from its shape, lens, mount, handling and many of its components). Being one of the first of this breed, it uses the method followed by all the early automatics—you set the shutter and let the meter take care of the lens—while retaining many of the non-auto Sensorex body characteristics. Among the latter are the large, knurled shutter (7) and rewind (3) knobs and the interchangeable prism with hot shoe (10).

In operation, after setting your shutter speed, you can see the chosen aperture setting on a scale running vertically up the right side of the finder screen. You can either press the shutter-release button (1) at this point and use this setting or you can shift shutter speeds if you want another aperture, and the camera will automatically select the right opening again. You can also lock the reading in place by pressing slightly on the shutter-release button (for backlit shots) or you can shift the lens aperture ring (12) off EE to a manually set aperture while the metering system continues to indicate suggested aperture settings.

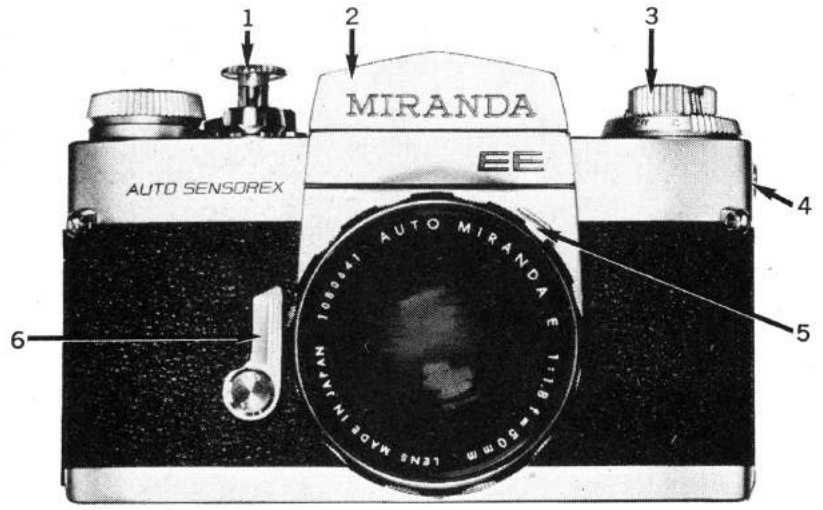
The fully automatic exposure system is operable with all Miranda lenses having the E engraved on the lens ring (25mm to 200mm at present). However, the camera does accept other Miranda lenses as well and provides sophisticated if not fully automatic exposure with them. With Auto Miranda lenses, you can have a full aperture pin added at moderate cost which will allow you to read the diaphragm value at full aperture from the viewfinder scale and then transfer this to the aperture scale.

During the development of the regular Miranda Sensorex, a central spot image area meter was first used and this was later changed to a bottom-weighted area averaging meter. The auto camera gives you the choice of either at the twist of a control collar (11) around the rewind lever. The spot reading of 3° (with normal lens) corresponds to the split-image area.

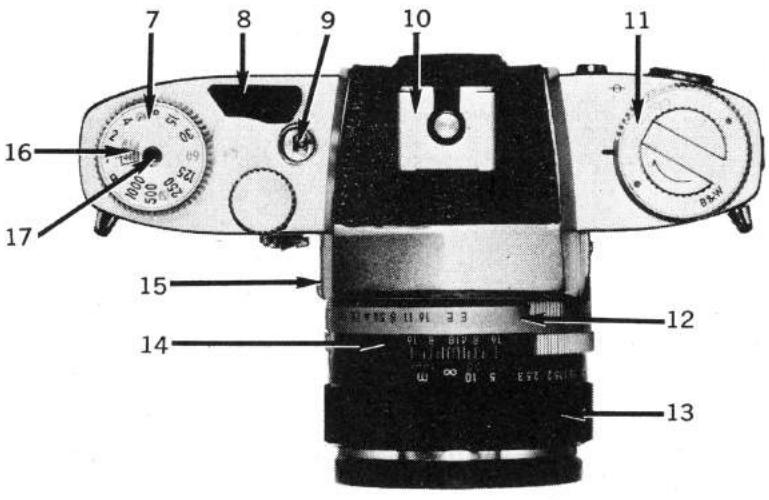
In our tests using the Zelox measuring equipment the meter was accurate to within ¼ f/stop all the way down to 1/15 sec. at f/2 with a film having an ASA index of 400, except at two settings of f/11 and f/16 at 1/500 sec., where accuracy was within ½ f/stop of the known light source.

The aperture scale within the viewfinder area is impressively large and easy to see, with a good-sized pointer that moves with excellent rapidity and precision to the correct aperture mark, even in low light.

To prevent users from relying on the metering system outside its usable range, the designers have provided a shutter-speed lock. The speed dial (7) cannot be turned to a lower shutter speed unless you press inward on a central button (17). You can then get any speed you wish down to 1 sec. However the meter needle will not move the correct aperture in this range, so you should switch the aperture ring off EE.



1. Shutter release. **2.** Interchangeable prism. **3.** Rapid-rewind crank. **4.** Flash sync contact. **5.** Depth-of-field preview lever. **6.** Self-timer. **7.** Shutter-speed dial. **8.** Rapid-wind lever. **9.** Frame counter. **10.** Hot sync accessory shoe. **11.** Spot-averaging meter switch. **12.** Auto and aperture scale. **13.** Focusing ring. **14.** Depth-of-field scale. **15.** Lens release lever. **16.** ASA film-speed scale. **17.** Shutter-lock release button.



NIKKORMAT EL

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.4 Nikkor-S-C Auto in interchangeable bayonet mount, apertures to f/16, focusing to 2 ft.
SHUTTER: Electronically timed Copal Square ES metal blade focal-plane, speeds from 4 to 1/1000 sec. plus B, MX sync.
VIEWING: Non-interchangeable eye-level prism with central microprism (or split-image rangefinder), fine-focusing collar with full area Fresnel screen.
OTHER FEATURES: CdS cells on either side of eyepiece read center-weighted area of entire focusing screen at full aperture, fully automatic, electronically-controlled exposure, provision for match-needle full aperture exposure control and stop-down manual control, shutter speeds visible in finder, auto exposure hold lever, full manual override, under and over exposure warning areas, hot sync shoe, mirror lockup lever, battery check button with light beside finder eyepiece.
PRICE: $676 with 50mm f/1.4 Nikkor S-C Auto, $584.50 with 50mm f/2 Nikkor H-C Auto, $757.50 with 55mm f/1.2 Nikkor S-C Auto; black-finish camera body is $18 additional.
MANUFACTURER: Nippon Kogaku K.K., Tokyo, Japan.
IMPORTER: Ehrenreich Photo-Optical Industries, Inc., 623 Stewart Ave., Garden City, N.Y. 11530
PHYSICAL DIMENSIONS: 5¾ in. wide, 3⅝ in. high, 4 in. deep. WEIGHT: 2 lb. 7½ oz.

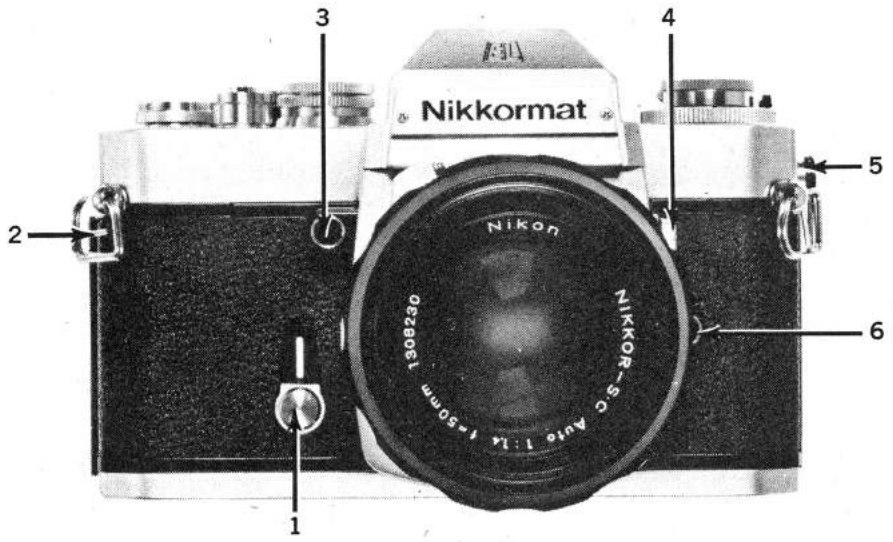
The Nikkormat EL has become a runaway best seller in the Nikon-Nikkormat family, even gathering professional enthusiasts who never thought they would desire an auto SLR. Herewith is an electronically-controlled camera having full-aperture automatic exposure for every automatic Nikon or Nikon-mount lens made since the Nikon F was first introduced! For any set aperture, the shutter provides automatic exposure by varying the shutter speed between 1/1000 sec. and 4 sec. The shutter-speed scale is clearly visible in the finder (although the numbers could be larger).

There are numerous alternative exposure possiblities. By turning the locking shutter-speed dial off "A" for automatic, a second green needle can be seen on the viewfinder's shutter-speed scale. By matching the green needle indicating manually-set electronically-controlled shutter speeds with the exposure needle, you have in effect a regular match-needle exposure system. You can also make readings at stop-down aperture for non-auto diaphragm lenses.

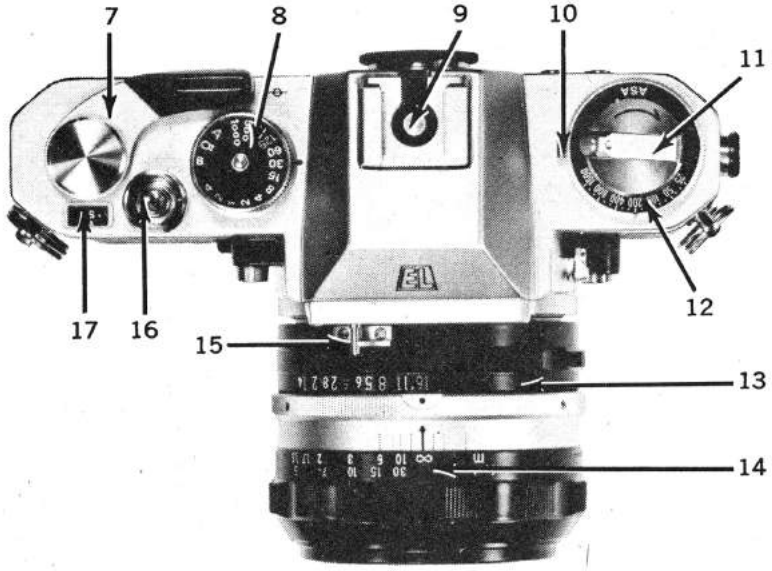
But that's not all the exposure control you get with the EL. Press the self-timer toward the lens mount and any reading will automatically be held for special lighting conditions such as those encountered with a variety of backlit subjects.

The camera body itself has been measurably improved over the preceding Nikkormats, with better finish, a plastic-tipped and well-contoured rapid wind lever, a self-shorting hot sync shoe, locking shutter release, larger mirror, improved mirror lockup lever, lighting battery check, double-locking hinged back, steel inserted carrying lugs, smoothed body contours. It's more like the F2 in appearance than the Nikkormat FTn. However, to accommodate all the older Nikon mount lenses, every lens must be connected to the exposure system prong and the lens twisted back and forth to "index" the maximum aperture. This is an additional step, but think of all the many Nikon-mount lenses it lets you use.

Auto exposures tended to produce slightly less exposed, deeper, richer, more professional negatives and slides, while match-needle operation gave us results more closely resembling amateur preferences. Shutter speeds were well within tolerances. The new Integrated Coating multicoated lenses showed good correction and marked flare decrease. This is certainly one of the most versatile and convenient-to-handle SLR's we have ever tested. Even Nikon-owning pros will be sorely tempted by this "automatic."



1. Self-timer/memory lock. **2.** Neck-strap eyelet. **3.** Preview button. **4.** Mirror lockup lever. **5.** Threaded sync PC terminal. **6.** Lens release button. **7.** Wind lever. **8.** Shutter-speed dial. **9.** Hot sync shoe. **10.** Film-speed dial lock. **11.** Folding rewind crank. **12.** ASA film-speed dial. **13.** Aperture control ring. **14.** Focusing ring. **15.** Meter connecting prong. **16.** Shutter release. **17.** Frame counter.



PETRI FT EE

TYPE: 35mm eye-level single-lens reflex.
LENS: 55mm f/1.8 Petri with interchangeable breech lock mount, stops to f/16, focusing to 2 ft.
SHUTTER: Cloth focal-plane with speeds from 1/2 to 1/500 sec. plus B, FP and X sync, self-timer.
VIEWING: Non-interchangeable eye-level prism with central grid and clear and fine-focusing collars, full focusing screen.
OTHER FEATURES: Mercury battery-powered automatic behind-lens CdS meter reading entire picture area at maximum aperture, instant-return mirror, quick-return diaphragm, exposure lock.
PRICE: $299.95.
MANUFACTURER: Petri Camera Co., Tokyo, Japan.
IMPORTER: Petri International Corp., 150 Great Neck Rd., Great Neck, N.Y. 11021.
PHYSICAL DIMENSIONS: 5⅝ in. wide, 3¾ in. high, 3 9/16 in. deep. WEIGHT: 2 lb. 1 oz.

The Petri FT EE continues to hold its own among the older, more established breed of auto-exposure SLR's with a mechanically-controlled, "you-set-the-shutter" system. The only changes are external: a body bulge under the self-timer, and the words "fully automatic" engraved on its front.

When it comes to camera operation, the automatic FT EE allows you to select the shutter speed, and the camera's through-the-lens metering system automatically sets the aperture. Two CdS cells are positioned at the base of the pentaprism to read the average brightness of the scene.

To use the camera you first set the ASA of the film in use in a window (6) on the shutter-speed dial and also select a shutter speed. With the camera set for auto operation you frame the subject, watch a pointer in the finder move to an f/number, and press the shutter release (1). The reading is made with the lens wide open. Once the exposure has been made the electrical circuit switches off automatically. The camera can also be used manually for special exposure situations, such as strong backlight, sidelight, snow or beach scenes.

The FT EE's redesigned body eliminates the square corners of the earlier Petri FT. The corners are chamfered for a more pleasing shape. The mercury battery compartment has been moved to the side, giving the camera a cleaner-looking facade.

The film-advance lever (4) has been somewhat reshaped, with a slight angle at the end that makes it easier to grasp.

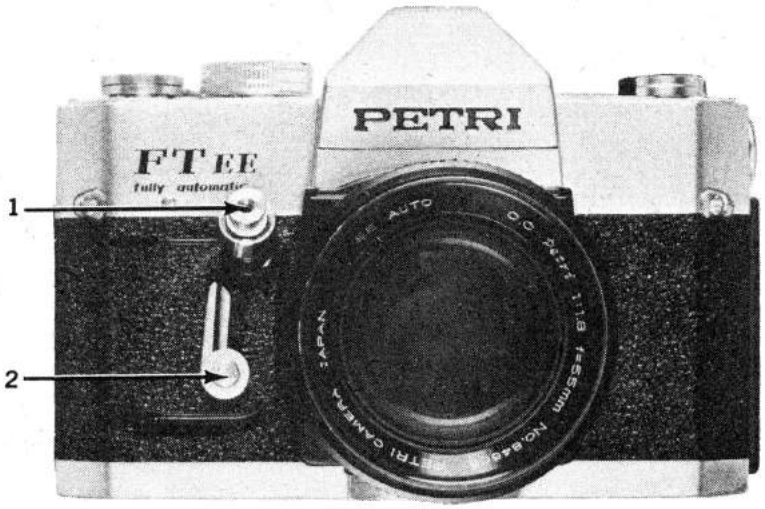
ASA speeds are a bit more difficult to read than on the previous machine, which had them on a completely separate dial. However, the extremely convenient front shutter release has been retained. It falls quite naturally right under the index finger of the right hand. Shutter speeds are in white on black except for the 1/15-sec. speed. That one's in yellow to serve as a reminder that it's time to use a tripod.

The finder (7) produces a slightly less than life-size image. You can focus lenses up to 400mm with either the central microgrid or the surrounding full ground-glass screen. Eyeglass wearers should have no trouble seeing almost the complete framing area. Lenses of 500mm or larger should be focused with the generous-sized, donut-shaped collar around the microprism.

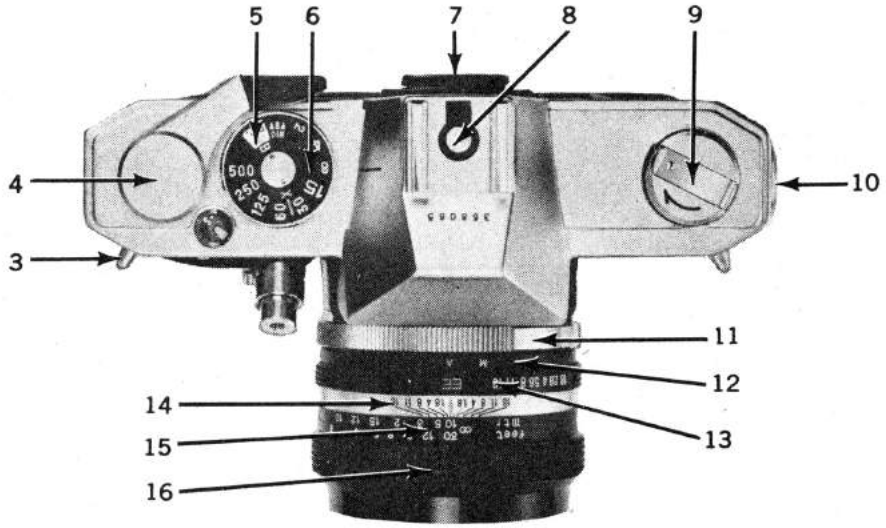
The breech-lock mount of the FT has been retained. While the entire line of Petri lenses from 28 to 1000mm can be used on the FT EE with manual through-lens exposure, the 28mm f/3.5, 35mm f/2.8, 135mm f/3.8, 200mm f/4 and 85-210mm f/4.5 EE lenses are specifically designed for automatic operation with the FT EE camera. In addition, the entire line of Accura lenses can be used with the YS adapter with the camera on manual.

The four-slotted take-up spool makes loading quick and easy—virtually fumble free, as a matter of fact.

In practical field tests, the Petri FT EE acquitted itself favorably. As expected, the auto exposure system afforded rapid setting up and shooting. We judged shutter noise to be at a level typical of this kind of camera, and the easy handling did not pall, even during lengthy shootings.



1. Shutter release. **2.** Self-timer. **3.** Shoulder-strap lug. **4.** Film-advance lever. **5.** ASA scale. **6.** Shutter-speed dial. **7.** Viewfinder. **8.** Accessory/hot shoe. **9.** Rewind crank. **10.** Battery compartment. **11.** Breech-lock ring. **12.** Auto/manual diaphragm-setting ring. **13.** Lens aperture/EE ring. **14.** Depth-of-field scale. **15.** Distance scale. **16.** Focusing ring.



RICOH AUTO TLS-EE

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.7 or 50mm f/1.4 Auto Rikenon EE with interchangeable thread mount, stops to f/16, focusing to 20 in.
SHUTTER: Cloth focal plane with speeds from 1 to 1/1000 sec. plus B, FP, X sync, self-timer.
VIEWING: Non-interchangeable eye-level prism with central microprism, fine-focusing collar, full focusing screen.
OTHER FEATURES: Fully automatic (you set shutter speed, camera selects aperture), with manual override, CdS cells on either side of finder eyepiece provide bottom-weighted reading of entire viewing area at full aperture, f/stops in finder.
PRICE: With 50mm f/1.7 Auto Rikenon EE, $389.95; with 50mm f/1.4 Auto Rikenon EE, $429.95.
MANUFACTURER: Ricoh Co., Ltd., Tokyo, Japan.
IMPORTER: Braun North America (Div. of The Gillette Co.), 55 Cambridge Parkway, Cambridge, Mass. 02142.
PHYSICAL DIMENSIONS: 5¾ in. wide, 3¾ in. high, 3⅜ in. deep. WEIGHT: 2 lb. 1 oz.

Ricoh's contribution to through-lens-meter SLR lore includes, among the more conventional items, the dual-finder (eye and waist-level) TLS 401. The latest Ricoh, however, represents the ultimate so far; that is, fully-automatic exposure control of the shutter-preferred variety. Together with its commonly available Pentax-type thread mount lens, it presents the photographer with an easily obtainable system.

There is a small, but expected, price to pay for this auto operation. After setting the special Auto Rikenon EE lens to its auto (EE) mark (6) and selecting a shutter speed, you merely press the shutter release (3) and the meter takes care of the aperture (which you can see on a scale in the viewfinder). The price you pay for this automation is the manual setting of the EE lens' maximum aperture on a separate dial (14).

The automatic Ricoh, however, is quite versatile underneath its snazzy black finish. You can use non-EE Rikenon lenses with a Pentax-type thread (and there are zillions) in the usual stop-down aperture, match-needle fashion. Most auto lenses with this mount can also be used at full aperture, but you must manually transfer the f/number indicated in the finder to the lens setting ring.

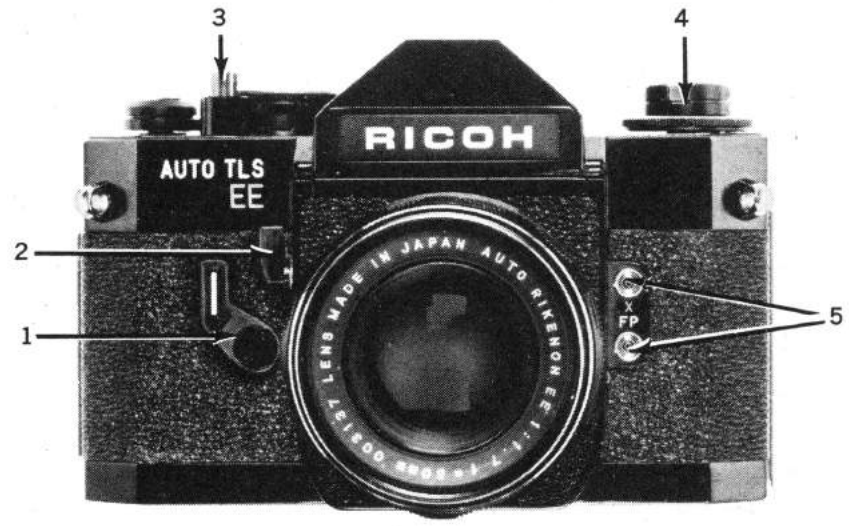
Tests made on our Zelox tester showed that the camera achieved exposures within one-half stop at high, medium and low ambient light levels (down to f/ 1.4 at 1/30 with ASA 400 film) when Rikenon EE lenses were used. We detected a ¼-stop shift toward the underexposure side when the stop-down method was used, but metering precision was still well within established tolerances.

An accurate metering system is useless unless it operates in conjunction with an accurate shutter and this is one area where the Ricoh really shines. Its conventional horizontal cloth focal-plane shutter was within 15 percent of its marked values at all speeds—a decidedly better-than-average performance. It's also rather quiet.

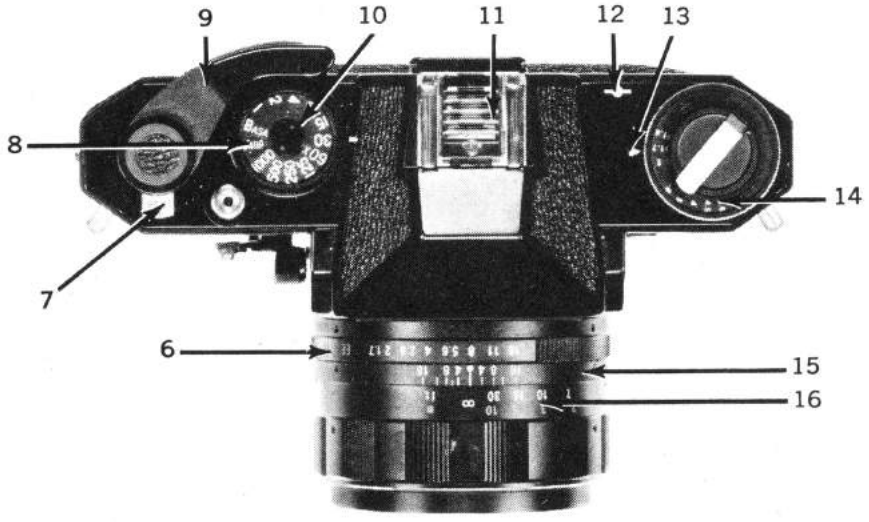
The TLS EE's reduced finder image is offset by a compact prism housing (in keeping with the camera's reasonable size) and a metering scale within that is completely visible to most eyeglass wearers. The major disadvantage: the finder shows 92 percent vertically and 91 percent horizontally of what actually appears on film according to our measurements at 10 ft. We'd prefer a slightly greater percentage for increased framing accuracy.

In our field tests, using the Ricoh's finder was a comfortable and pleasant experience, however. The central microprism fractured and focused all test lenses (28 to 200mm) quite decisively, and the bright fine-focusing collar nicely complements the slightly darker full focusing screen.

Loading the Ricoh is quite standard. Pull down the latch on its lower left side and the back swings open. The take-up spool is multi-slotted; the camera's bottom plate is cut out on the left side, facilitating film loading, and the pressure plate is oversized.



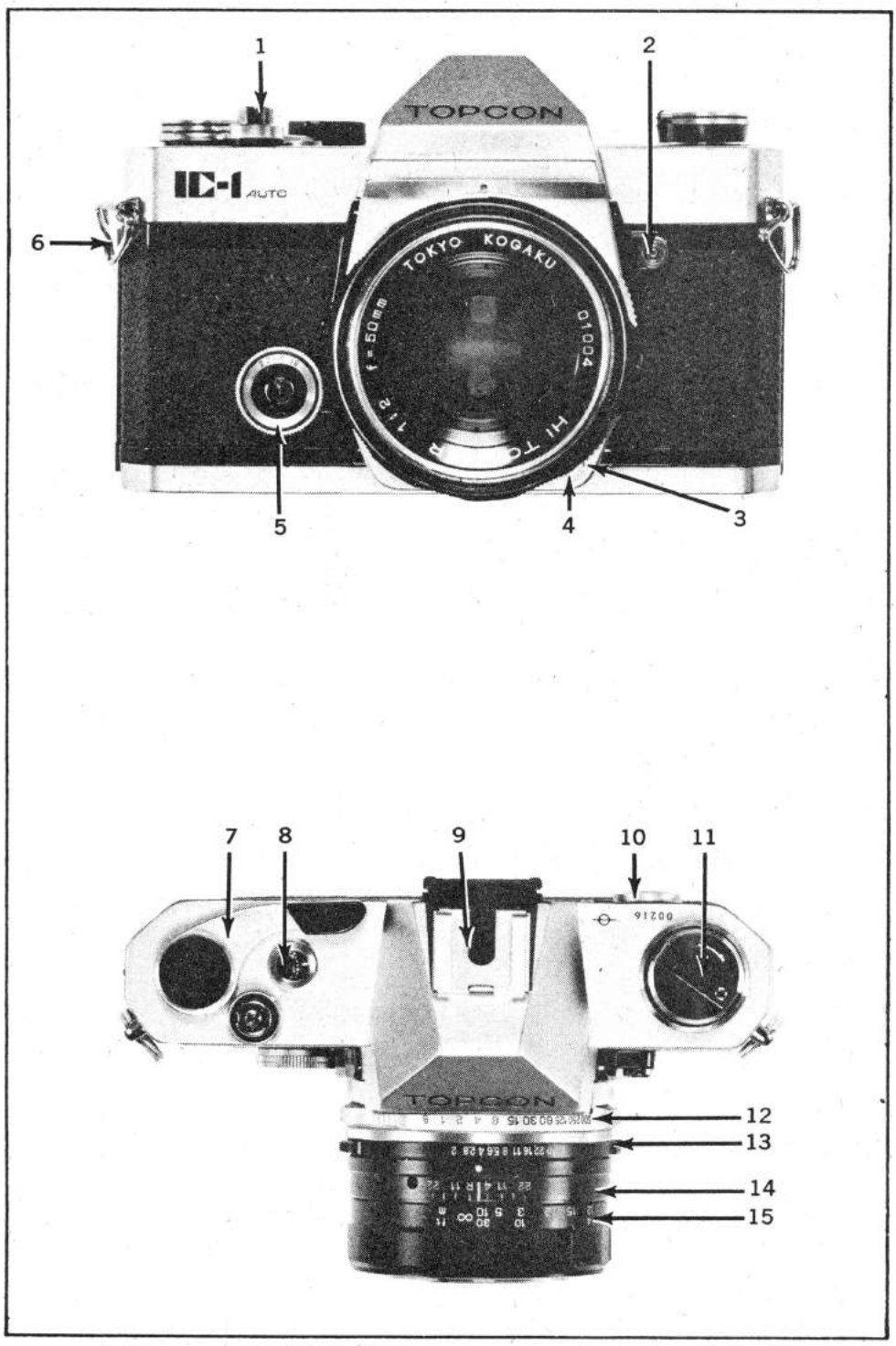
1. Self-timer. **2.** Depth-of-field preview/stop-down meter circuit switch. **3.** Shutter-release button. **4.** Rewind crank. **5.** Flash sync terminals. **6.** Aperture control ring. **7.** Auto resetting frame-counter. **8.** ASA film-speed dial. **9.** Wind lever. **10.** Shutter-speed dial. **11.** Accessory hot shoe. **12.** Film plane marker. **13.** Maximum aperture index. **14.** Maximum aperture setting scale. **15.** Depth-of-field scale. **16.** Focusing scale.



TOPCON IC-1

TYPE: 35mm eye-level single-lens reflex.
LENS: Interchangeable 50mm f/2 UV Topcor with bayonet mount, stops to f/22, focusing to 24 in.
SHUTTER: Electronically-controlled cloth focal-plane with speeds from 1 to 1500 sec. plus B, MX sync.
VIEWING: Non-interchangeable eye-level prism with central microprism, fine-focusing collar, full area Fresnel screen.
OTHER FEATURES: Shutter-preferred automatic metering plus manual override with two CdS cells on both sides of finder eyepiece giving center-weighted average reading of entire focusing screen at full aperture, low and excessive light warning signals, aperture visible in viewfinder, lens speed compensator.
PRICE: $289.50.
MANUFACTURER: Tokyo Optical Co. Ltd., Tokyo, Japan.
IMPORTER: Paillard Inc., Linden, N.J.
PHYSICAL DIMENSIONS: 5⅝ in. wide, 3⅝ in. high, 3½ in. deep. WEIGHT: 1 lb. 15 oz.

In devising the IC-1, Topcon took a leaf from their previous Unirex in the form of its lens mount, but they also discarded a leaf, namely the Unirex's leaf shutter. Retained is the same basic auto-exposure system wherein you select the shutter speed and the camera provides the correct f/stop for the conditions.



While the body remains substantially the same, gone is the switch near the rewind knob that allowed selection of independent spot and average readings. It is replaced by a center-weighted system that averages out the meter reading, using two compound CdS cells positioned on both sides of the finder eyepiece. Also gone is the leaf shutter, replaced by an electronically-controlled cloth focal-plane shutter. Speeds are still selected by turning the knurled ring on the lens mount.

Here's how it works: Press in the film-speed catch located at the bottom of the lens mount and rotate this ring until the black dot is opposite the ASA in use. Set the f/stop ring on "Auto" and choose your shutter speed. The response of the aperture pointer in the finder was immediate, during our field tests with the camera. The large scale was easy to read even for photographers who normally wear glasses.

Contrast, rather than brightness, has been stressed in the finder and the decision has paid off in a very crisp, clear viewing image with better than average microprism focusing, plus a good fine-focusing collar. The almost invisible Fresnel rings outside the collar won't detract from using the entire area for focusing.

Image size with the normal lens is slightly less than life-size. Eyeglass wearers will be able to see almost the entire frame and the aperture scale.

Since the lens mount is identical to the one on previous cameras, Topcon lenses designed for the Unirex and Auto 100 will also fit on the IC-1. In order to match the maximum aperture of the lens to the ASA index of film, when the camera is used automatically, Topcon has a lens-speed compensator located near the lens mount. The scale shows six f/stops, f/2, 2.8, 3.5, 4, 4.7 and 5.6, which correspond to the maximum apertures of various Hi Topcor lenses from a 28mm to a 87-205mm zoom. Films from ASA 25 to 3200 can be handled.

In field tests, the IC-1 seemed a comfortable camera to operate. The single-throw lever has a movement of about 120°. Shutter noise was about average for a focal-plane shutter, with a steady response and hardly any vibration during exposures.

The shutter release requires a long push, which makes holding the meter reading easier and firing the camera prematurely less likely. However, the manufacturers have provided an additional convex shutter button to thread into the cable-release socket. Though this does not shorten the push required, it certainly makes firing the IC-1 more secure and comfortable.

The new Topcon IC-1 seems to provide a lot of camera technology for a relatively moderate price, and we will have more to say about it when we test it.

VIVITAR 650/SLX

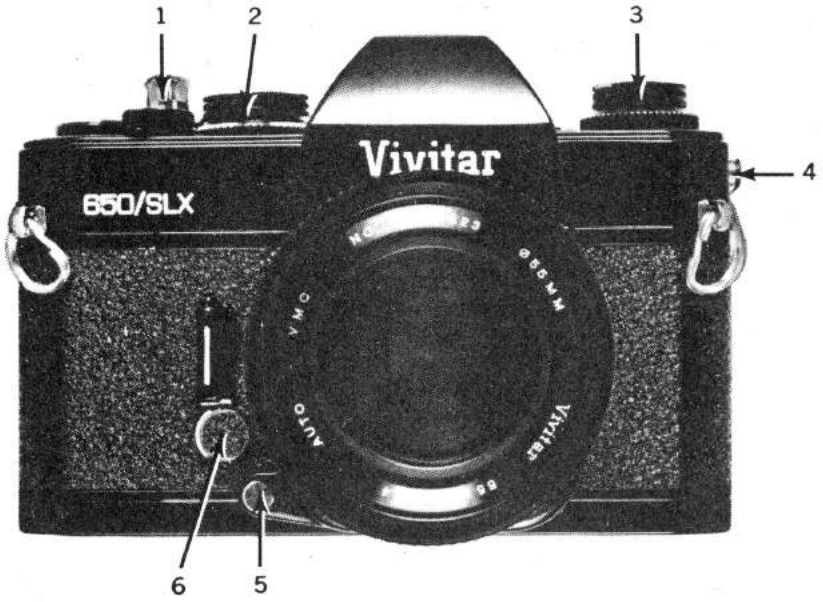
TYPE: 35mm single-lens reflex.
LENS: 55mm f/1.4 Vivitar VMC in interchangeable Pentax-thread mount, stops to f/16, focusing to 1 ft. 8 in.
SHUTTER: Copal-Square EF394 electronically-controlled metal focal-plane with automatically selected speeds from 4 to 1/2000 sec., manually selected speeds from 1 to 1/2000 sec. plus B, FPX sync, self-timer.
VIEWING: Non-interchangeable eye-level prism with central microprism, fine-focusing collar, full focusing Fresnel screen.
OTHER FEATURES: Fully automatic exposure, "you set aperture, camera chooses shutter speed" system with camera-selected shutter speeds, low-light warning, battery check visible in finder, full manual override, six-volt silver-oxide powered silicon blue cells behind central mirror area and beyond sides of film aperture measure spot or center-weighted averaging light level for instantaneous reading at working aperture, hot shoe terminal.
PRICE: $529.95.
MANUFACTURER: Cosina, Inc., Nagano, Japan.
IMPORTER: Ponder & Best, Inc., 1630 Stewart St., Santa Monica, Calif. 90406.
PHYSICAL DIMENSIONS: 5¾ in. wide, 3⅞ in. high, 3⅞ in. deep. WEIGHT: 2 lb. 8 oz.

In last year's 47 Top Cameras Directory, we tentatively introduced an earlier version of the Vivitar 650/SLX as the Argus/Cosina EC 2000, but in the meantime Cosina found a new distributor—Ponder & Best—and a brand new name for their ingenious auto-exposure camera. Behind the revised nomenclature are important technical changes, including a completely re-engineered metering system in the same body.

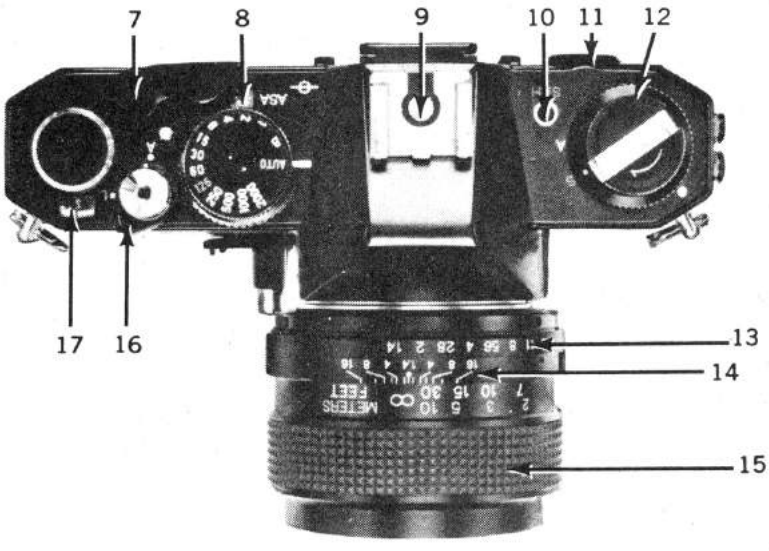
The principal idea embodied in Vivitar's automatic-exposure system is instantaneous metering at working aperture. This allows 650/SLX owners to employ any auto-diaphragm, Pentax screw-thread-mount lenses they may presently have in the full auto-exposure mode without any modification whatever. The system works like this. As you press the shutter-release button (1), the lens aperture closes down to the aperture you set. At that moment, the camera's complete metering circuitry is immediately activated to provide the proper shutter speed for the existing lighting conditions at the aperture you've selected. This entire sequence of events occurs a split second before the mirror flips, so the time lag usually associated with stop-down metering systems on match-needle SLR's is, for all practical purposes, eliminated. This apparent engineering feat is directly attributable to the camera's silicon-cell metering system, which measures the light so quickly that the 650/SLX has virtually all full-aperture-metering assets.

Also an advanced piece of engineering is the 650/SLX's electronically-controlled Copal-Square EF394 shutter, providing continuously variable shutter speeds from 4 to 1/2000 sec., as indicated on the left side of the finder screen (along with a light-emitting diode for checking the battery). Even the placement and operation of the silicon cells are unique. One, normally positioned at the focal plane behind the semi-silvered mirror, first measures a 3° spot right in front of the focal plane, and then moves left (when the mirror flips upward) to make a compensating reading during exposure in concert with another cell located at the right end of the film aperture. As a result, you can choose either spot or averaging metering modes by turning the spot-averaging selector (X). At "A" position, the central cell reads 50 percent of the light while at the center, and the remaining 50 percent is then read by both the fixed and movable cells at either end of the film aperture. If you select the "S" position, the greater part of the metering is done by the movable cell which reads only three percent of the finder area, as indicated by the microprism circle itself.

Rounding out the pleasantries are an exposure-hold, memory-lock button and provision for a full range of electronically-controlled, manual shutter speeds.



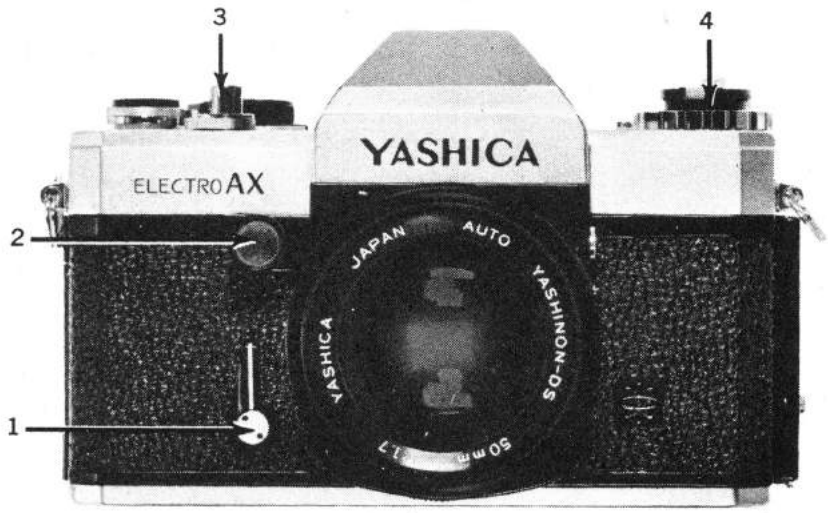
1. Shutter release. **2.** Shutter-speed dial. **3.** Folded rewind crank. **4.** Flash sync terminals. **5.** Diaphragm-reopening button. **6.** Self-timer. **7.** Film-advance lever. **8.** Film-speed setting window. **9.** Hot shoe sync. **10.** Spot-reading exposure hold button. **11.** Battery cover. **12.** Spot-average selector collar. **13.** Aperture setting ring. **14.** Depth-of-field scale. **15.** Focusing ring. **16.** Shutter-release locking lever. **17.** Frame counter.



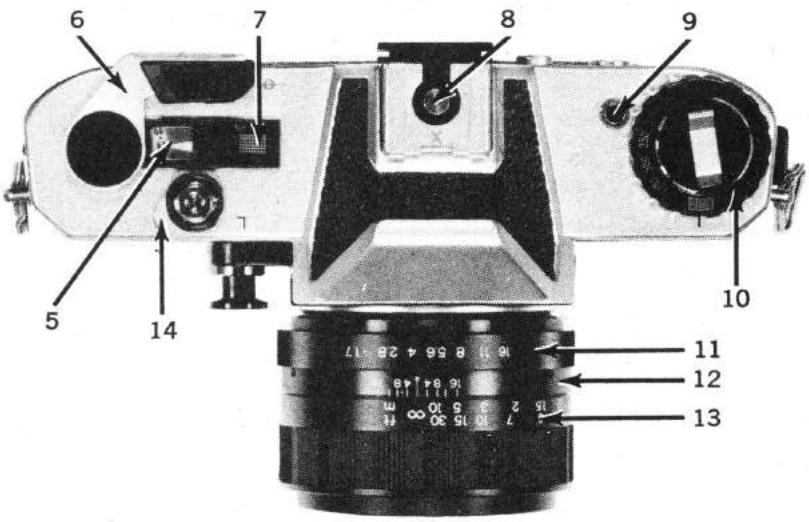
YASHICA ELECTRO AX

TYPE: 35mm eye-level single-lens reflex. LENS: 50mm f/1.7 Yashinon-DS with interchangeable thread mount, stops to f/16, focusing to 18 in. SHUTTER: Copal Square SE metal focal-plane with speeds from 8 to 1/1000 sec. plus B, EP, X sync, self-timer. VIEWING: Non-interchangeable eye-level prism with central microprism, fine- ing collar, full focusing screen. OTHER FEATURES: Fully automatic (you set aperture, camera selects shutter speed), with manual override, CdS cell at film plane measures entire viewing area at shooting aperture. PRICE: With 50mm f/1.7 Auto Yashinon-DS, $460; with 50mm f/1.4 Auto Yashinon-DS, $510; with 50mm f/1.2 Auto Yashinon-DS, $600. MANUFACTURER: Yashica Co., Ltd., Tokyo, Japan. IMPORTER: Yashica Inc., 50-17 Queens Blvd., Woodside, N.Y. 11377. PHYSICAL DIMENSIONS: 6 in. wide, 3⅞ in. high, 3½ in. deep. WEIGHT: 2 lb. 3 oz.

Yashica's path to full automatic-exposure control has been via the aperture-preferred route—with a difference. Said difference stems from this company's innovative "match-arrow" system—a pair of illuminated warning arrows in the viewfinder that replace the conventional match-needle meter system and are coupled to an electronically-controlled shutter. The entire electronic meter system runs on a single, rather large (nearly 2 in. long), 5.6-volt mercury battery.



1. Self-timer. **2.** Diaphragm opening button. **3.** Shutter-release button. **4.** Film-rewind crank. **5.** Frame-counter/battery-check window. **6.** Film-advance lever. **7.** Shutter indicator window. **8.** Accessory shoe/direct flash contact. **9.** Shutter-dial release lock. **10.** Shutter-speed dial. **11.** Aperture-control ring. **12.** Depth-of-field scale. **13.** Focusing ring. **14.** Shutter-release lock.



The most exclusive feature of the AX is the reverse operation of its diaphragm action. The meter works with the lens stopped down, in itself not unusual, but you have to press a button (2) to open up the diaphragm for focusing. This may well be the first camera on which the diaphragm stops down *after* you advance the film and cock the shutter. The meter sets the proper shutter speed, but you have no idea what it is unless you are using the camera manually. And though the AX has full manual control, the meter does not work in the manual mode. The meter, though it averages the light falling over the whole picture area, is center-weighted, favoring a section which covers about 7 percent of the scene.

More specific differences become apparent as we go through the normal shooting operation. You first set the film speed (ASA 25-1600) on a large, click-stopped dial on the bottom of the camera. Next, set the large, knurled-edge shutter-speed dial (10) to "Auto" and select an aperture. After focusing you press lightly on the shutter-release button (3), keeping an eye on the black band along the right edge of the finder. If a red arrow lights up (signaling overexposure), turn the aperture ring (11) in the indicated direction until it goes out. A yellow arrow signals your setting will be below 1/30 sec. and you'd better change it or resort to a tripod. If no arrow comes on, press the release fully to shoot.

To switch to manual you have to press a release button (9) before turning the dial (10) to the desired speed. In either case, a green signal (7) next to the large frame-counter window (5) on top lights up while the shutter is open. Battery testing consists of pressing a button on the back to light up the counter window, thus giving this large window double duty.

Looking through the front (with the lens removed, of course) you can see the circular CdS cell smack in the middle of the picture area directly in front of the film plane. The cell, on a swinging arm, drops down into the camera body during exposure and pops back up as soon as the mirror returns to its viewing position. A semi-transparent baffle and mirror on the underside of the main mirror permit enough light to pass through the cell to activate the meter. A new set of normal focal length lenses, designated "DS," has been created for the AC, featuring larger, clearer numbers (11, 13) and a rubberized focusing ring (13), as well as the required internal connections. Present 50mm, 21mm and 28mm lenses will not work with this camera.

ALPA 11el

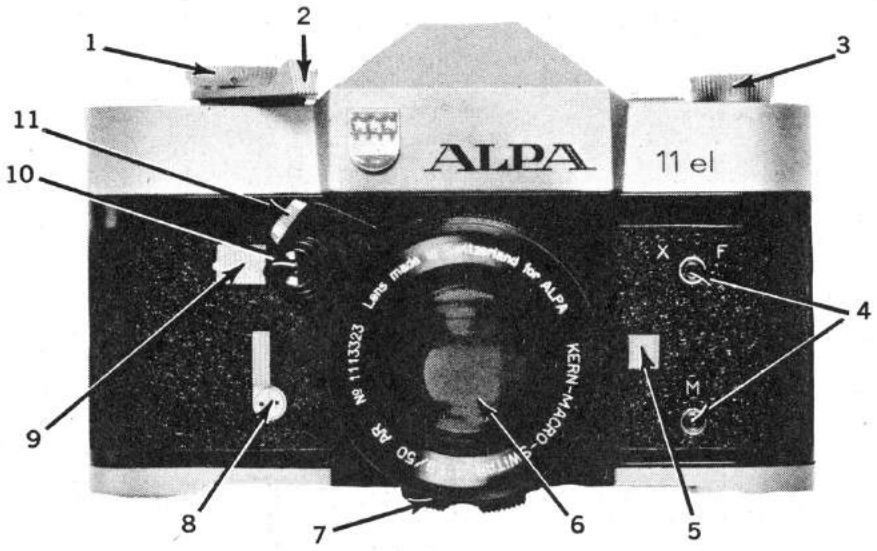
TYPE: 35mm single-lens reflex.
LENS: 50mm f/1.9 Macro-Switar, with interchangeable bayonet mount, stops to f/22, focusing to 11 in.
SHUTTER: Cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, FP, MX sync.
VIEWING: Fixed eye-level prism with central split-image rangefinder, microprism collar, clear glass collar and crosshairs, full focusing screen (other screens on request).
OTHER FEATURES: Mercury battery-powered CdS exposure meter (behind lens) measures centerweighted spot at shooting aperture, dual meter readout lights, quick-return diaphragm, instant-return mirror, depth-of-field preview, auto resetting frame counter.
PRICE: $999 with 50mm f/1.9 Macro-Switar, $799 with 50mm f/1.9 Xenon.
MANUFACTURER: Pignons S.A., Ballaigues, Switzerland.
IMPORTER: Karl Heitz, Inc., 979 Third Ave., New York, N.Y. 10022.
PHYSICAL DIMENSIONS: 5¾ in. wide, 3¾ in. high, 3½ in. deep. WEIGHT: 2 lb. 5 oz.

Alpas have always been defiantly unconventional Swiss 35mm SLR's, and the 11el is certainly no exception. For example, all other SLR manufacturers have altered their basic body configurations to accommodate advances in metering system and shutter design. Pignons, S.A., the Alpa's producers, incorporated the world's second behind-lens meter into a minor revision of their existing body shell, retained the time-honored horizontal cloth focal-plane shutter, and came up with the 9d. Now, a decade later, they've introduced the 11el, which features the same basic body design plus a through-lens electronic metering system with arrow-shaped lights (instead of a needle) below the finder.

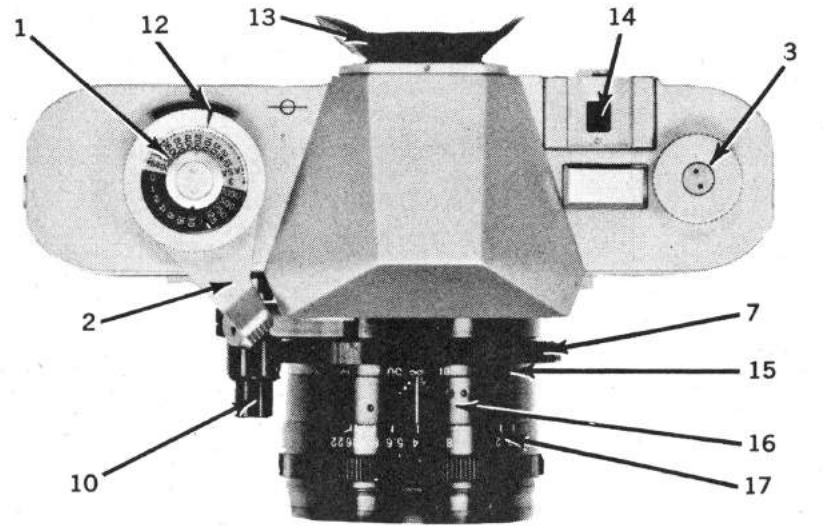
Metering with the 11el is straightforward in concept, but we noted a few unforeseen hitches in practice. The sliding switch right next to the front-mounted shutter release has three click-stopped positions. Going from right to left, they're: "meter off, shutter button free," "meter on, shutter button free," and "meter on, shutter button locked." If that last one sounds superfluous, we assure you that each mode has its use for accurate metering with this stop-down metering camera. Bring the Alpa to eye level with the switch in the middle position, press the Macro-Switar's shutter-release button, and a light or lights come on in a little window just under the finder area (where they're hard to miss). If the lens is set at a small aperture you'll also see the finder darken noticeably, for the Alpa is a classic (some might say dated) stop-down-metering camera, and you must meter at shooting aperture rather than wide open.

The Switar lens extends 2⅝ in. (65mm) from the camera body at its closest marked focusing distance of 11 in. (27.9cm), and in this position you can marvel at the focusing barrel which is adorned with three rows of footage and inch markings in white, reproduction ratios in red, and a pair of exposure increase factors—1.5X and 1.8X—in green (the latter are not necessary when using the Alpa's meter). Directly in front of these is the built-in, depth-of-field indicator which reads out using a system of dots opposite the focusing scale. As you stop the lens down farther you can see more dots, indicating increased depth of field. The lens becomes a manual diaphragm optic if you turn the stop-down control (11).

Basically the Alpa 11el is an almost-system camera that's carefully made in a small factory in limited quantities. It's characterized by fanatical attention to many mechanical details with a fine disregard for production economies, but it's also saddled with a slow-operating metering system and a film-advance lever you have to learn to love. If you appreciate traditional European craftsmanship for its own sake, are willing to pay for it, and couldn't care less how fast your camera meters or whether you have to stop the lens down to do so, then maybe the Alpa is for you. Like all limited-production classics, it has a small but devoted following.

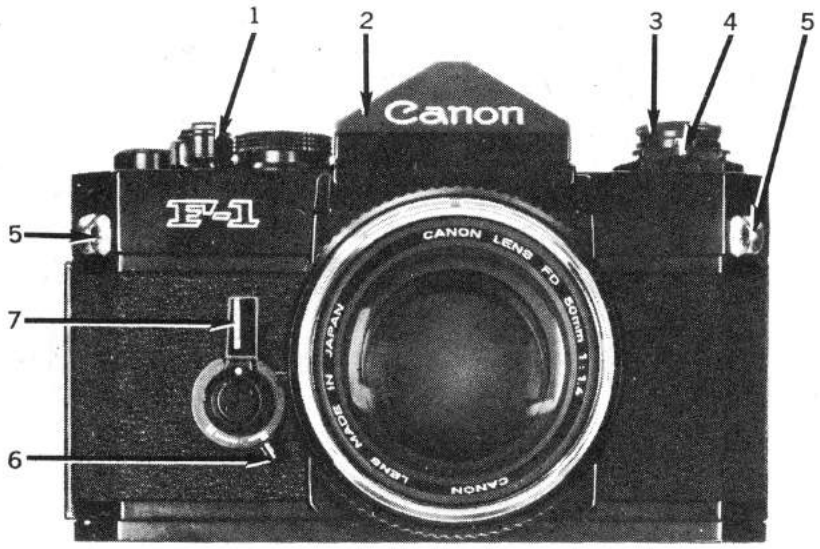


1. Film-speed/shutter-speed dial. **2.** Wind lever. **3.** Rewind crank. **4.** PC flash contacts. **5.** Lens release lock. **6.** Lens. **7.** Focusing ring. **8.** Self-timer lever. **9.** Meter switch/shutter lock. **10.** Shutter release. **11.** Aperture stop-down control. **12.** Exposure counter. **13.** Eye cup. **14.** Auxiliary metering window. **15.** Distance scale. **16.** Depth-of-field indicator. **17.** Aperture ring.

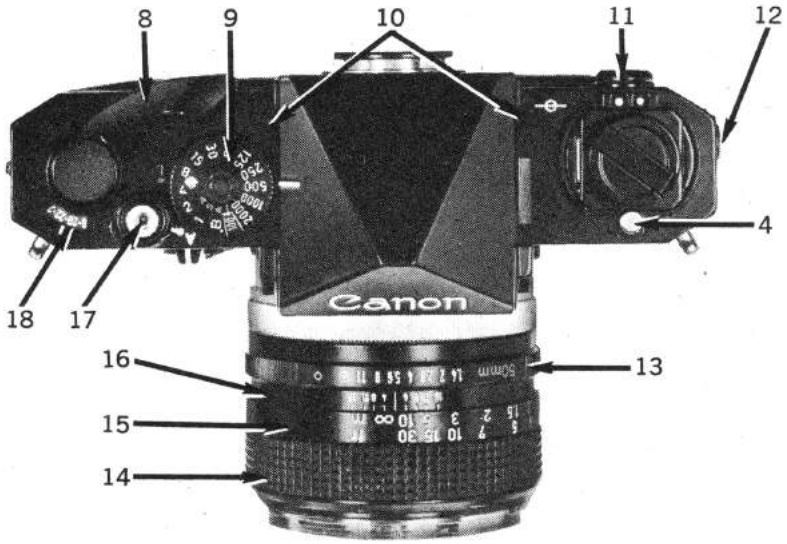


CANON F-1

TYPE: 35mm eye-level single-lens reflex. LENS: 50mm f/1.4 S.S.C. Canon in interchangeable Canon breech-lock mount, stops to f/16, focusing to 18 in. SHUTTER: Titanium focal-plane with speeds from 1 to 1/2000 sec. plus B, FPX sync, self-timer. VIEWING: Interchangeable eye-level prism, interchangeable screen with central microprism, fine-focusing collar, full focusing screen. OTHER FEATURES: Mercury battery-powered CdS meter, behind lens, measures central marked area at full or working aperture, depth-of-field preview, mirror lock-up and self-timer lever, shutter speeds visible in finder, provision for motor drive, bulk film back, low light level meter, meter, fully automatic servo EE exposure control. PRICE: $699. MANUFACTURER: Canon Camera Co., Tokyo, Japan. IMPORTER: Canon USA Inc., 10 Nevada Dr., Lake Success, N.Y. 11040. PHYSICAL DIMENSIONS: 5⅞ in. wide, 3⅞ in. high (maximum), 4⅛ in. deep. WEIGHT: 2 lb. 11 oz.



1. Shutter locking collar. **2.** Interchangeable prism finder. **3.** Folded rewind crank/back latch. **4.** Back latch release. **5.** Carrying strap lugs. **6.** Stop-down metering selector. **7.** Self-timer/depth-of-field preview lever. **8.** Rapid-wind lever. **9.** Shutter-speed dial. **10.** Prism lock buttons. **11.** Meter on-off battery-test switch. **12.** Sync terminal. **13.** Aperture ring. **14.** Focusing collar. **15.** Distance scale. **16.** Depth-of-field scale. **17.** Shutter-release button. **18.** Frame counter.



The F-1 is Canon's top-of-the-line, full-system SLR and was designed to challenge Nikon in this field. A distinctive difference between the two is that Canon's metering system is built into the camera body, thus permitting finders to be interchanged with no loss of metering. The metering system is of the semi-spot type, providing a 12 percent central picture area measurement.

The Canon F-1 is complemented by a servomotor automatic exposure control, a low light level booster meter, a dependable motor drive and a bulk film 250-exposure back. All the elements of the F-1 system have the typical Canon touch of fine workmanship with handsome design and surface finish. And older Canon lenses fit the new camera, though they meter only at working aperture, unlike the new FD lenses, which meter either at full or working aperture. The Canon breech-lock lens mount is retained to insure wobble-free mounting with easy interchangeability. It's the only system combining the advantages of bayonet-lens interchangeability plus automatic adjustment for lens mount wear.

Inside the viewfinder of the F-1 is an interesting array of features. A choice of focusing screens accommodates a wide range of preferences. The standard screen has a central microprism, fine-focusing collar and a slightly darker rectangle which shows the image area being exposure-metered. The other screens offer a split-image rangefinder, fine matte circle and rulings for technical and architectural photography. All four screens have the rectangular metering area clearly delineated. Eyeglass wearers can see the entire screen, including the off-screen meter needle and shutter-speed indications. In addition to the under and overexposure warning areas, the entire metering window turns red when the shutter speed or aperture you've selected is outside the meter-coupling range for the ASA you've set. This usually happens only with a high-speed film and very slow shutter-speed combination.

The back opening system has a double safety lock. You have to engage a locking button to actuate the rewind lever latch. The rapid-wind lever is ratchetted and operates smoothly in a single stroke of 180° if preferred. Shutter-release noise level is average for quick-return-mirror SLR's.

Electronic flash synchronizes at speeds up to 1/60 sec.; FP bulbs can be used from 1/125 to 1/2000 sec., while M bulbs may be used at speeds of 1/30 sec. and slower.

The F-1 metering system was accurate to within ¼ f/stop over most of its range, which extends down to f/1.4 at 1/15 sec. with a 400 ASA film.

The Servo EE Finder turns the F-1 into an automatic-exposure camera. The user selects the shutter speed and the built-in servo motor sets the correct aperture as determined by the EE Finder's own center-weighted meter system. When used with the MF motor drive, power for the EE Finder can be drawn from the motor-drive unit.

CANON FTbn

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.4 S.S.C. Canon in interchangeable Canon breech-lock mount, stops to f/16, focusing to 18 in.
SHUTTER: Cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, FP and X sync, self-timer.
VIEWING: Non-interchangeable eye-level prism with central grid, fine-focusing rectangle, full focusing screen.
OTHER FEATURES: Mercury battery-powered CdS meter, behind lens, measures central picture area at full or working aperture, shutter speed visible in finder, instant-return mirror, depth-of-field preview, mirror lock, quick loading.
PRICE: $471; $10 more for black finish.
MANUFACTURER: Canon Camera Co., Tokyo, Japan.
IMPORTER: Canon USA Inc., 10 Nevada Dr., Lake Success, N.Y. 11040.
PHYSICAL DIMENSIONS: 5⅞ in. wide, 3¾ in. high, 3¾ in. deep. WEIGHT: 2 lb. 5 oz.

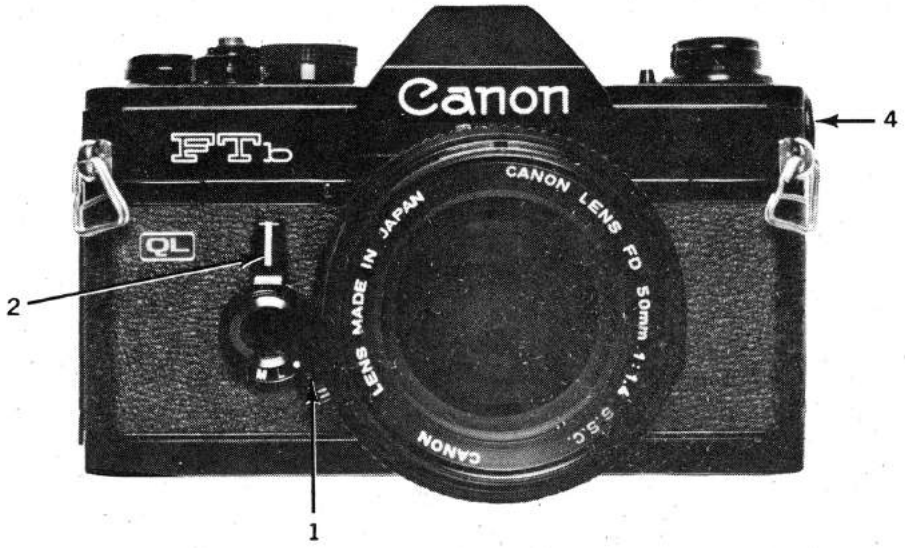
The FTbn is a third-generation camera. The FTb improved on the earlier FT by offering metering at full aperture with FD series lenses, as well as a more efficient metering cell. The FTbn goes a step further by showing the shutter speed in use in the finder. It also sports a new plastic-tipped wind lever and a redesigned self-timer/mirror-lockup lever. To distinguish the FTbn from the FTb, you'll have to check the camera's features, because the newer camera's nameplate still says "FTb." The FTbn accepts all FD lenses as well as some accessories designed for the F-1, its higher-priced, full-system counterpart.

Let's start with the FTbn's finder. It shows 94 percent of the actual picture area (thus allowing some margin for the edges of transparencies covered by cardboard mounts). The image is slightly less than life-size (.85X with a 50mm lens). The very excellent central microprism is the same size as that in the Canon FT but appears to be slightly finer. It shatters out-of-focus images very well and snaps into sharpness at precise focus. The longish central rectangular gray area surrounding the microprism area is the actual diagonal semi-silvered split prism which channels light from the lens back to the CdS cell behind the focusing screen. It also serves as the finder indicator area for the meter measuring spot. In the FT, it was a fairly darkish gray, since some 40 percent of the total illumination was needed for the meter. However, in the FTbn (like the F-1) the use of a more efficient meter cell has reduced the amount of light needed to about 22 percent. Hence the darkish gray of the FT has become considerably brighter in the FTbn.

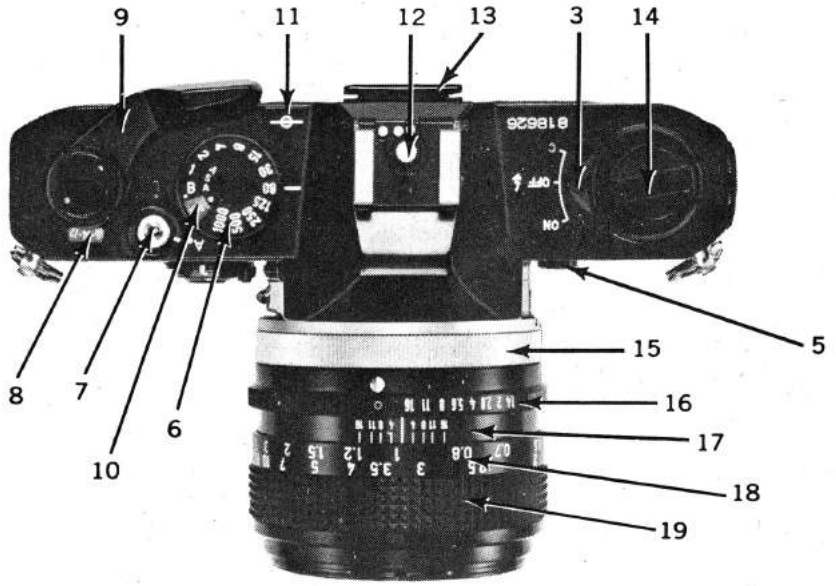
To use stop-down aperture either with the FD lenses or the older Canon FL lenses, you push the big preview lever (2) toward the lens. The large ring inside the finder drops out of sight and you align the meter needle in the finder with a stubby index point at shooting aperture. If you want, you can lock the preview lever in place (1) or just remove pressure and the diaphragm will reopen immediately. The lowest shutter speed which will give you proper meter reading is 1/15 sec. using an ASA 400 film, irrespective of the lens aperture. In our tests, the metering system was extremely accurate, with no deviation at all from a known light source all the way up and down its range except in three places, where deviation was held to no more than ⅓ f/stop in two settings and ½ f/stop in a third. The shutter-speed accuracy was nearly the same as in the metering system.

Happily, all present and past FL-and-earlier Canon SLR lenses can fit the FTbn. All FL lenses can be used on the F-1 or FTbn with metering at stop-down aperture. The automatic diaphragm mechanisms are compatible too. And if you use a new FD lens on an FT camera, you can operate it just as you would the regular FL lenses. So there is no loss of any lens service by using the FL lenses on the F-1 or FTbn cameras, or by using the FD lenses on the FT.

The new Super Spectra coated—Canon's multi-layer coating—lenses yielded virtually flareless field tests.



1. Shooting-aperture meter circuit switch lock. **2.** Self-timer/shooting-aperture meter circuit switch. **3.** Meter circuit switch/battery check. **4.** Meter battery compartment. **5.** Flash sync terminal. **6.** Shutter-speed dial. **7.** Shutter-release button. **8.** Auto resetting frame counter. **9.** Film-advance lever. **10.** ASA film-speed scale. **11.** Film plane indicator. **12.** Accessory shoe. **13.** Viewfinder eyepiece. **14.** Rewind crank. **15.** Lens-lock control ring. **16.** Aperture-control ring. **17.** Depth-of-field scale. **18.** Footage scale. **19.** Focusing ring.



FUJICA ST801

TYPE: 35mm eye-level single-lens reflex.
LENS: 55mm f/1.8 EBC Fujinon in interchangeable Pentax-Pentacon screw-thread mount with locking pin, stops to f/16, focusing to 18 in.
SHUTTER: Cloth focal-plane, metal reinforced, with speeds from 1 to 1/2000 sec. plus B, FPX sync, self-timer.
VIEWING: Fixed eye-level prism with central split-image rangefinder, microprism collar, fine-focusing collar, full focusing Fresnel screen.
OTHER FEATURES: Silicon cells on either side of eyepiece measure light integrated from focusing screen at full or working aperture, light-emitting diodes for aperture, shutter-speed numerals visible in finder, hot shoe sync.
PRICE: $380 with 55mm f/1.8 EBC Fujinon lens, $430 with 55mm f/1.4 EBC Fujinon.
MANUFACTURERS: Fuji Photo Film Co., Ltd., Tokyo, Japan.
IMPORTER: Fuji Photo Film USA, Inc., 350 Fifth Ave., New York, N.Y. 10001.
PHYSICAL DIMENSIONS: 5¼ in. wide, 3⅝ in. high, 3½ in. deep. WEIGHT: 1 lb. 15 oz.

Since the Fujica ST801's metering system was the first to incorporate light-emitting diodes in the viewfinder, as proclaimed by the silver-on-black "LED" on the camera's front, it's a good place to begin. This feature eliminated the questionably-durable, inherently-fragile moving meter needle and jeweled micro-ammeter found in most meterized 35mm SLR's.

First, set the film speed (ASA 25-3200) by lifting the knurled shutter-speed knob (15) and turning its outer ring until the proper number appears in a little cutout just below the "B" setting. Now, release the outer ring and manually select a shutter speed. When you look through the viewfinder, the shutter speed appears in white on the far left.

The right side of the finder is needleless. It's adorned with a centrally placed meter index cutout, a white-on-black plus sign with a down-pointing arrow just above it, and an equally visible minus sign and up-pointing arrow below it. Nothing visibly startling happens until you press the shutter release partway down, causing a pretty, vertically sequential display of little red lights starting from the bottom. While rotating the nicely knurled aperture ring, you can center the light (or the brightest of the two if two are lit) opposite the index mark just as though it were a needle.

Unlike a moving needle, these little electronic lights are clearly visible either in brilliant sunlight or the proverbial coal bin. If all LED's are dark save the central one opposite the index mark, you've got the correct exposure setting on the nose. Keep the camera in exactly the same metering position and select the next smallest f/stop and the light "moves" to the LED just below it (toward the minus sign), indicating a one-stop underexposure. Since there are seven LED's, the ST801 reads up to three stops above or below the "correct" setting.

Its range can only be described as extraordinary. There are a few other in-camera meters that'll get you down to f/1.4 at ¼ sec. with Kodak Tri-X, but how many can meter at 1/2000 sec. at f/32?

The focusing screen is discernibly brighter than average for a 35mm SLR.

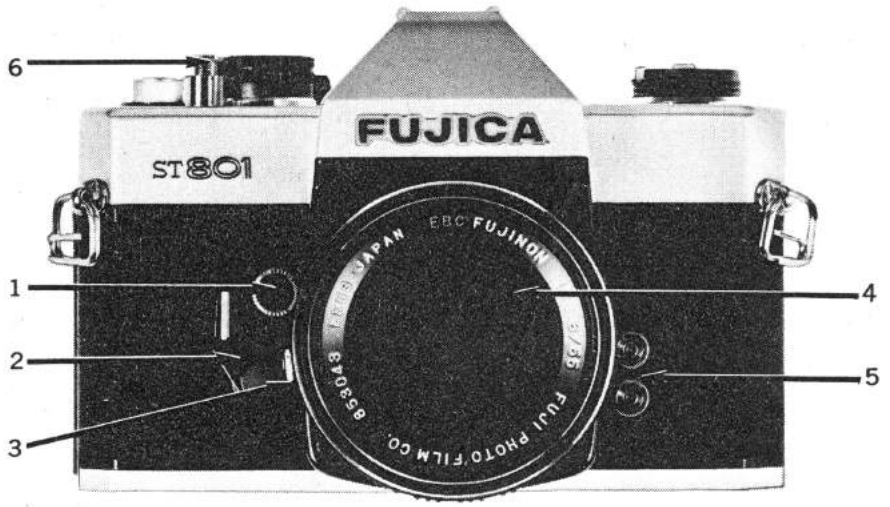
The focusing with the normal 55mm f/1.8 lens is smooth and positive.

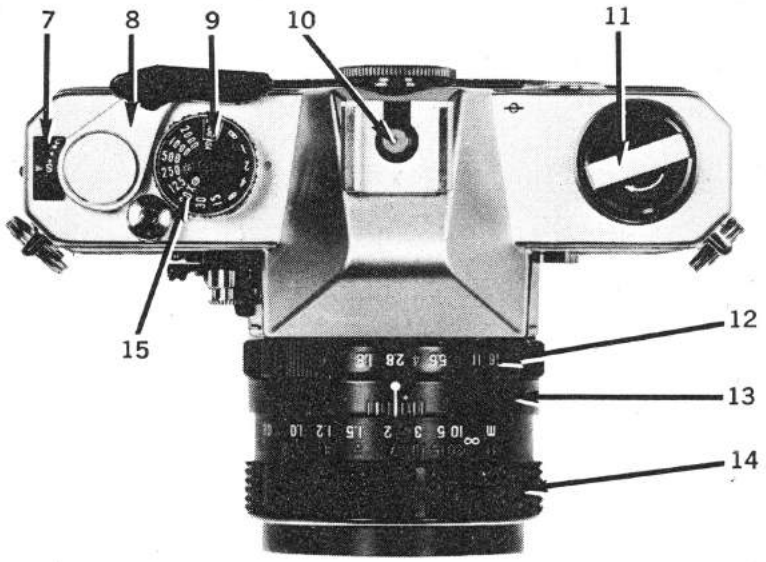
Turning to the 801's horizontal cloth focal-plane shutter, our tests showed a commendable degree of accuracy.

Unlike its predecessor, the ST701, the ST801's Pentax-type screw-thread lens locks in position. To mount the lens, just screw it in until it clicks. To remove it, push inwards on a marked tab just in back of the lens on the lower right and unscrew it.

Optically, the 55mm f/1.8 was a good picture taker. The virtual absence of ghost images must be credited to Fuji's Electron Beam Coating (EBC), a more even and controllable multicoating process.

All in all we found the compact Fujica ST 801 an eminently capable machine, straightforward in operation, offering an usually bright finder, above average in performance and pleasant to use.





1. Depth-of-field preview button. **2.** Self-timer lever. **3.** Lens release lock. **4.** 55mm f/1.8 EBC Fujinon lens. **5.** Flash sync terminals. **6.** Shutter-release button. **7.** Frame counter. **8.** Rapid-wind lever. **9.** ASA film-speed window. **10.** X-sync hot shoe. **11.** Folded rewind crank. **12.** Aperture scale. **13.** Depth-of-field scale. **14.** Focusing ring. **15.** Shutter-speed dial.

HANIMEX PRAKTICA LLC

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.8 Meyer Optik Görlitz Oreston in Praktica-Pentax screw mount with stops to f/16, focusing to 13 in.
SHUTTER: All-metal multi-blade vertical focal-plane with speeds from 1 to 1/1000 sec. plus B, FPX sync.
VIEWING: Non-interchangeable eye-level prism with central microprism, fine-focusing collar, full focusing Fresnel screen.
OTHER FEATURES: Mercury battery-powered CdS meter (behind lens) measures centerweighted area at full or working aperture, self-timer, hot shoe sync, rapid-loading system, depth-of-field preview.
PRICE: $309.95.
MANUFACTURER: VEB Pentacon, Dresden, East Germany.
IMPORTER: Hanimex (U.S.A.) Inc., 7020 N. Lawndale Ave., Chicago, Ill. 60645.
PHYSICAL DIMENSIONS: 6 in. wide, 3¾ in. high, 3⅝ in. deep. WEIGHT: 1 lb. 14 oz.

The Practica LLC remains stolidly unchanged, still the top camera in the Pentacon SLR line. What makes it so is its electronically-coupled, full-aperture metering system in a screw-thread mount, plus its ability to use a wide range of non-electronically-coupled lenses of the stop-down variety. These lenses were orginally designed for the less expensive LTL and meterless L.

The LLC is a more contemporary design with an all-metal shutter very similar to the vertical-travel Copal Square, and a fine, close-focusing (to 13 in.) 50mm f/1.8 Meyer Oreston lens.

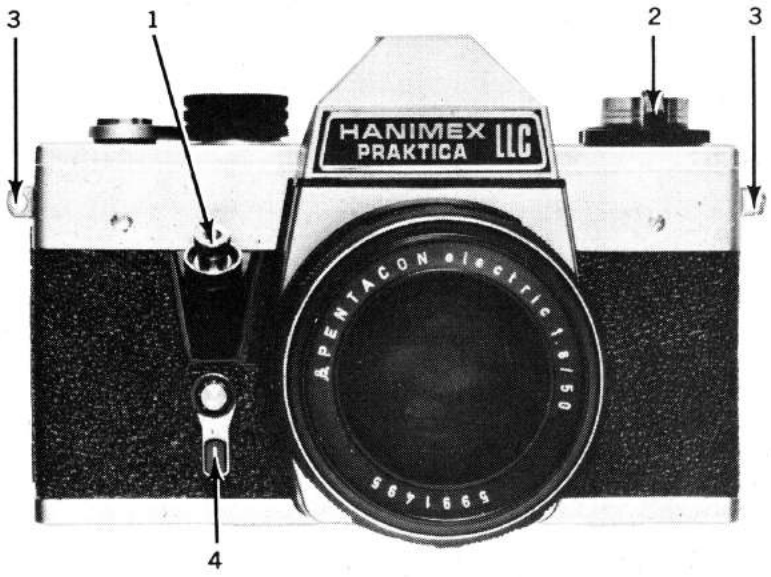
On the rear of the lens are three spring-loaded bearings which make contact with three metal strips on the face of the camera body lens mount. These bearings and strips are the electrical connections which program the camera exposure system. A slight pressure on the 45°-angled front shutter release turns on the camera's metering circuit. To complete the process you line up a needle with a small circle etched on the viewing screen. Other screw-thread lenses for Praktica, Pentax and similar mounts can be used with working aperture exposure metering on the LLC. The depth-of-field preview control is used to close down the apertures.

Not only does the meter turn-on feature save battery power (it is turned on only for the time you are measuring exposure, in most cases a fraction of the time it would take to turn on and turn off a conventionally switched meter) but the combination of shutter release and meter switch makes it extremely simple to use the camera metering system for brightness range and close-up measuring techniques. There is little chance of accidental shutter release because the free-play measuring ends with the stiffer resistance of the release travel used for exposure.

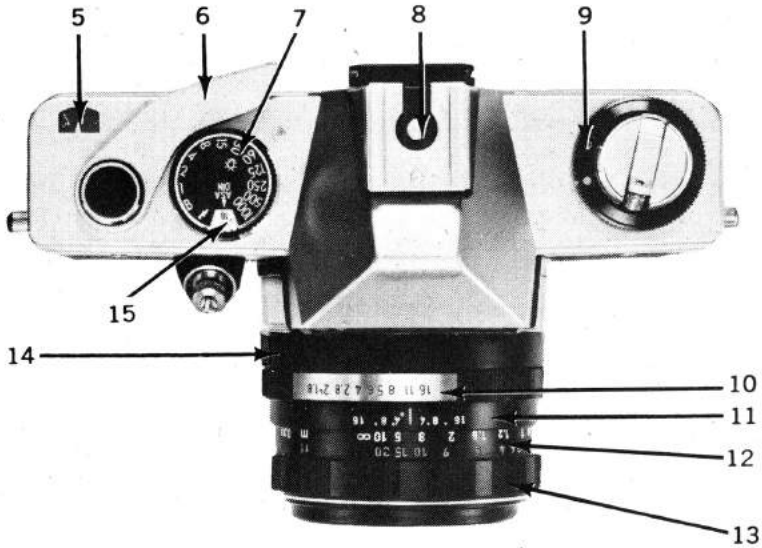
The metering system uses a beam splitter to direct a small amount of the incoming light to a CdS cell near the front of the prism housing. This approach produces a meter which is free from metering error due to ambient light entering the viewfinder eyepiece. Departing from older designs, the LLC uses centerweighting instead of the usual averaging readings. Sensitivity decreased very evenly from center to corners and was well within ½ f/stop over the entire metering range. Sensitivity entended down to 1/30 sec. at f/2.8 using 400 ASA film and the needle response was satisfyingly swift in low light levels.

Unlike most focal-plane SLR's which have sync speeds from 1/30 to 1/80 sec., the LLC, like Copal-Square-shuttered SLR's, can sync with electronic flash up to shutter speeds of 1/125 sec. Shutter advance is not ratcheted but the 110° single stroke is shorter than most. The accuracy of the LLC shutter was well within tolerances and exceptionally good at its highest marked speeds.

The viewfinder is bright with a 1:1 image size. Eyeglass wearers will not be able to see the screen corners, but the central microprism fractures out-of-focus images nicely, aided by a well-defined fine-focusing collar for easy use. At its moderate price, the LLC's also a fine value.



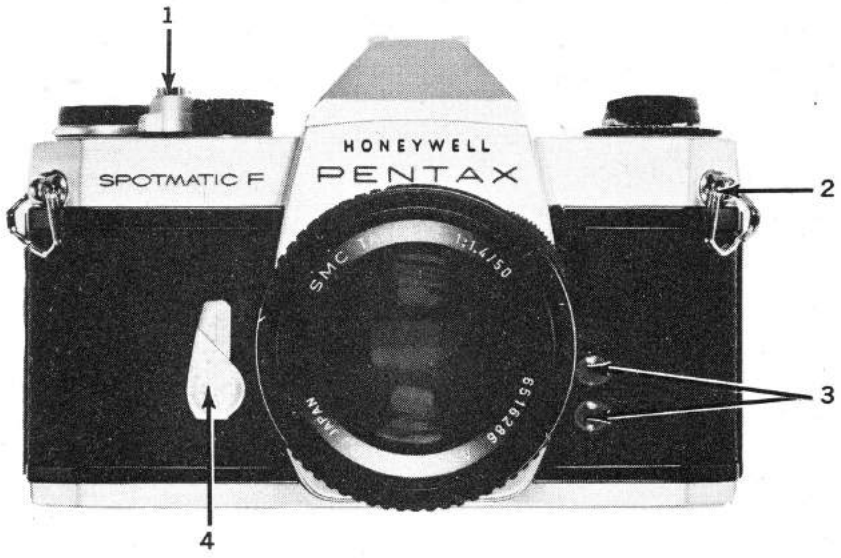
1. Shutter release. **2.** Folded rewind crank. **3.** Carrying strap lugs. **4.** Self-timer lever. **5.** Frame counter. **6.** Rapid-wind lever. **7.** Shutter-speed dial. **8.** Hot sync accessory shoe. **9.** Stop-down metering selector. **10.** Aperture collar. **11.** Depth-of-field scale. **12.** Distance ring. **13.** Focusing collar. **14.** Depth-of-field preview. **15.** ASA film-speed scale.



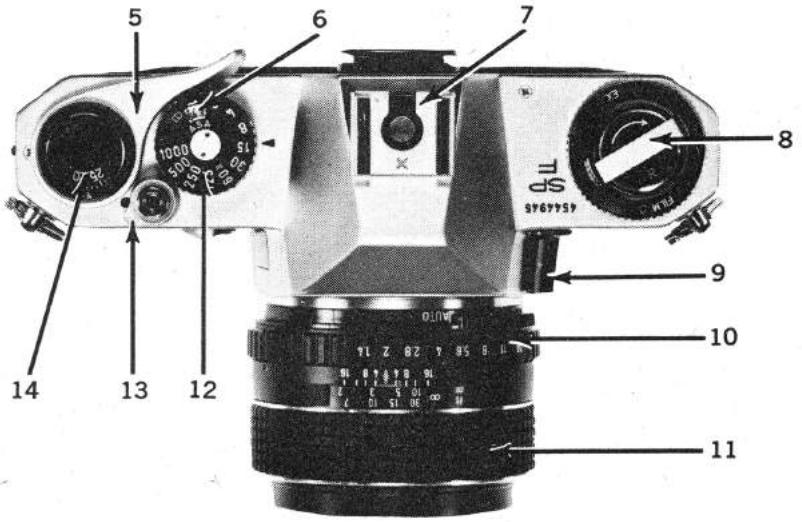
HONEYWELL PENTAX SPOTMATIC F

TYPE: 35mm eye-level single-lens reflex. LENS: 50mm f/1.4 Super-Multi-Coated Takumar with interchangeable thread mount, stops to f/16, focusing to 18 in. SHUTTER: Rubberized cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, FP, X sync. VIEWING: Non-interchangeable eye-level prism with central microprism, fine-focusing collar, full focusing screen. OTHER FEATURES: Mercury battery-powered CdS circuit with cells on either side of viewfinder eyepiece which measure entire focusing screen at full aperture, depth-of-field preview, film-wind signal, exposure control signal, self-timer, hot shoe sync. PRICE: with 50mm f/1.4 Super-Multi-Coated Takumar, $429. MANUFACTURER: Asahi Optical Co., Ltd., Tokyo, Japan. IMPORTER: Honeywell Photographic Prod., P.O. Box 1010, 5501 South Broadway, Littleton, Colo. 80120. PHYSICAL DIMENSIONS: 5½ in. wide, 3¾ in. high, 3½ in. deep. WEIGHT: 2 lb. 1 oz.

The Pentax Spotmatic F continues the tradition of the easy-to-handle Pentax with no frills, but now has full-aperture metering for new lenses and stop-down metering for others. It's an ideal, handy companion to the ES or ES II (whose lenses can be used for full-aperture readings) or, going in the opposite direction, it's good for someone who is stepping up from the Spotmatic I or II and still wants to bring along many older screw-thread mount lenses for convenient use at stop-down readings.



1. Shutter release. **2.** Neck-strap lug. **3.** Sync terminals. **4.** Self-timer lever. **5.** Wind lever. **6.** ASA indicator. **7.** Accessory/hot shoe. **8.** Rewind crank. **9.** Depth-of-field preview/stop-down meter switch. **10.** Aperture ring. **11.** Focusing ring. **12.** Shutter-speed dial. **13.** Shutter-lock lever. **14.** Frame counter.



The finder image is 1:1 with a 50mm lens, and the screen has an apparent distance of 23 in. with the needle at 13 in., rather far apart for easy viewing. The needle cutout with large plus and minus markings, however, is most visible and convenient, while the entire finder screen can be seen by eyeglass wearers. The 92 percent vertical and 93 percent horizontal area of the finder, as compared to the recorded picture area, is very close to the total area visible in commercial slide mounts. With an ASA 400 film, the camera will read to ⅛ sec. at f/1.4. Accuracy was within ½ f/stop of a known light source. Shutter speeds were well within tolerances.

Compact size, excellence of controls, a fine precision microprism and a good finder which can be seen almost in its entirety by eyeglass wearers keep this basic camera one of the major SLR's against which all others are measured.

The F is almost the spitting image of the old Spotmatic II outwardly, except the hot sync shoe is X sync only. There's a shutter-lock collar to prevent accidental release, and the push-up preview lever is no longer marked "SW" (which stood for meter switch). Instead, the meter automatically switches off when the lens cap is placed over the lens, lowering the light level below usable thresholds. With light entering the lens, the meter circuit goes on and remains on and operational.

The now unmarked switch serves only as a depth-of-field preview lever with the specially-keyed Super-Multi-Coated Takumar (SMCT) lenses. To set the camera, you don't touch the switch. Instead you simply turn the shutter-speed dial or aperture ring to center the meter needle.

With non-SMCT or non-ES lenses, which don't have the required aperture-setting lever at the rear in addition to the single auto-diaphragm pin, the SMCT keying lever is no longer tensioned and the camera reverts to regular Spotmatic and Spotmatic II stop-down operation. To make your readings at stop-down measurement, you must push upwards on the depth-of-field preview switch, which will close the lens to shooting aperture and turn on the metering system. Unlike Spotmatic and Spotmatic II cameras, however, the switch does not automatically return to the off position after exposure. It remains "on" until you move it downwards. In this and some other less important ways, the designers have attempted very successfully to make it impossible to mix up old and new lenses and thus get the wrong exposure.

LEICAFLEX SL 2

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/2 Summicron-R with interchangeable bayonet mount, stops to f/16, focusing to 20 in.
SHUTTER: Rubberized cloth focal-plane with speeds from 1 to 1/2000 sec. plus B, MX sync, self-timer.
VIEWING: Non-interchangeable eye-level prism with full focusing screen, central microprism spot.
OTHER FEATURES: Instant-return mirror, quick-return diaphragm, CdS through-lens meter measures central picture area at full aperture, depth-of-field preview, shutter speeds and aperture settings visible in viewfinder, auto resetting frame counter.
PRICE: Not established at press time.
MANUFACTURER: Ernest Leitz GMBH, Wetzlar, Germany.
IMPORTER: E. Leitz, Rockleigh, N.J.
PHYSICAL DIMENSIONS: 5¾ in. wide, 3¾ in. high, 4 in. deep. WEIGHT: 2 lb. 7 oz.

The Leicaflex SL 2, introduced this year, represents the continuing evolution of Leitz's SLR line, which began with the externally-metered Leicaflex and advanced with the through-the-lens metered Leicaflex SL. While the SL 2 retains the basic casing and finish of the SL, there are several major internal changes—most significantly in the lens mount and finder.

The SL 2's lens mount has been changed to mesh with a new line of Minolta-inspired Leitz lenses, which have a shorter back focus than the lenses for earlier Leicaflexes. Because of the back-focus shift, Leitz has reduced the space required by the mirror movement in the SL 2 and fail-safed the mount by lengthening one of the three bayonet flanges on the new lenses. Consequently, lenses designed for the SL 2 won't fit the SL or the early Leicaflex; however, all Leitz reflex lenses to date will mate with the SL 2.

Inside the finder, the story is more information. First of all, an aperture indicator has joined the shutter-speed scale underneath the SL 2's focusing screen. To make space for it, the shutter-speed scale has been compressed, but it still covers the range from 1/2000 to 1 sec. On the aperture scale, a pointer shows the aperture selected, from f/1.4 to f/22, while the lens remains wide open for viewing and focusing.

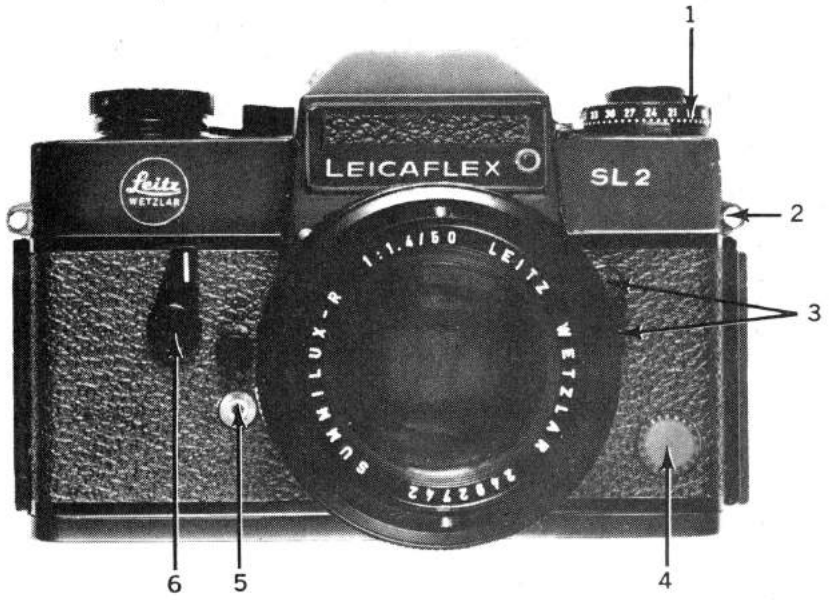
Also new in the finder is an illuminated panel for observing the meter's follow-pointer. In dim light, when it's difficult to see the meter needle, you push a button in the side of the pentaprism with your right index finger, and the panel lights up to provide a bright background for the meter needle and twin follow-pointer pincers. A second PX 625 battery in a screw-lid compartment on the camera front powers this metering light.

A third improvement in the SL 2 is a much-overdue boost in meter sensitivity. With an f/1.4 lens and ASA 25 film, the meter covers an EV range from –2 to 16, or EV 2 to 20 at ASA 400. This brings the SL 2's metering range up to the level of the Leica M5's, a sensitivity gain of three f/stops compared to the Leicaflex SL.

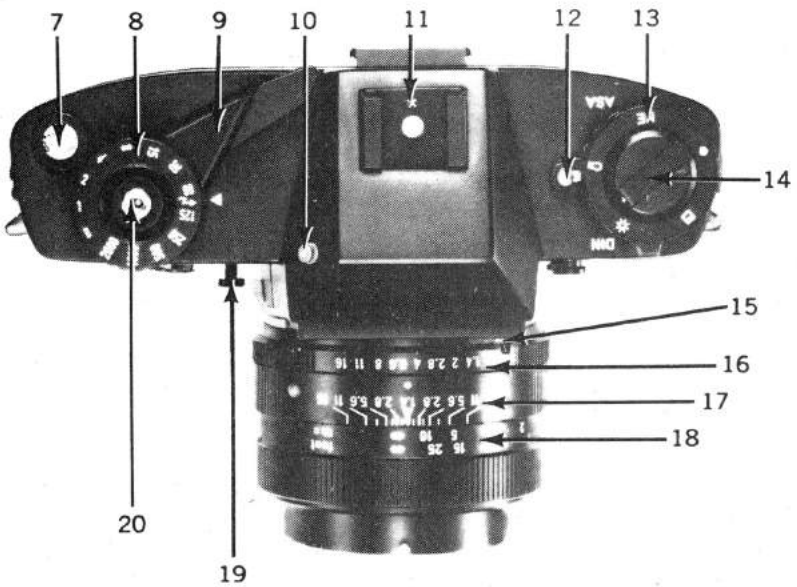
Also new to the SL 2 are an X-sync hot shoe, a rewind-knob catch that releases the camera back when the knob is pulled up, and a redesigned film track. The tongues around the take-up spool are now all-metal, and a bayonet-lock button on the camera's front replaces the plastic lens catch on the SL's lens-mount ring.

Other SL features, including the central spot meter, have been retained. A fine-focusing microprism circle in the full focusing screen still defines the light-measuring area of the meter; the metering angle depends on the focal length of the lens in use, growing wider with wide-angle lenses and narrower with telephotos. About one-sixth of the diagonal format is measured. Eyeglass wearers will continue to enjoy a full view of the finder field.

While the SL 2 is so new that MODERN's technical staff hasn't had a chance to subject it to its rigorous testing procedures, the camera does possess the quiet, silky-smooth operation and superb optical quality lens line of its predecessors.



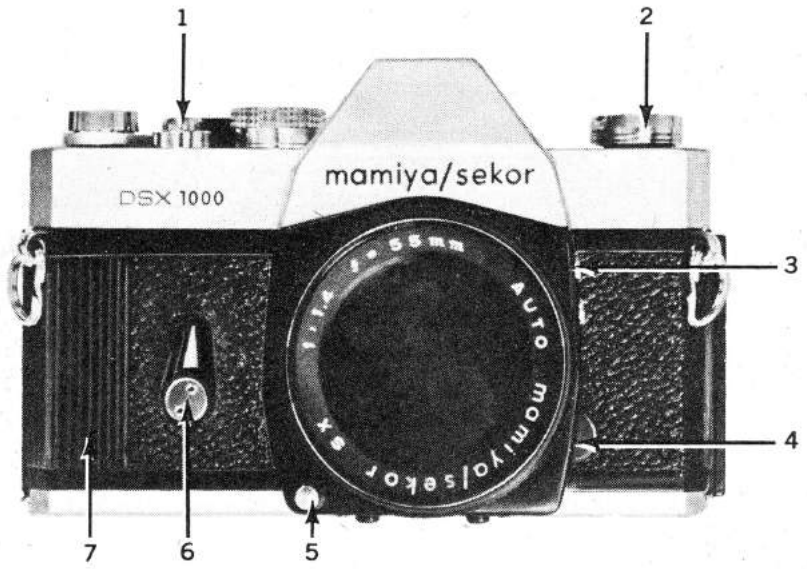
1. Film-speed selector dial. **2.** Shoulder-strap lug. **3.** Flash sync terminals. **4.** Metering-light battery compartment. **5.** Bayonet-mount lock button. **6.** Self-timer. **7.** Frame counter. **8.** Shutter-speed dial. **9.** Film-advance lever/exposure meter on-off switch. **10.** Switch for meter-needle panel light. **11.** Hot sync/accessory shoe. **12.** Film-speed-dial release button. **13.** Film-type indicator. **14.** Rewind crank. **15.** Battery test switch. **16.** Aperture scale. **17.** Depth-of-field scale. **18.** Distance scale. **19.** Depth-of-field preview button. **20.** Shutter release.



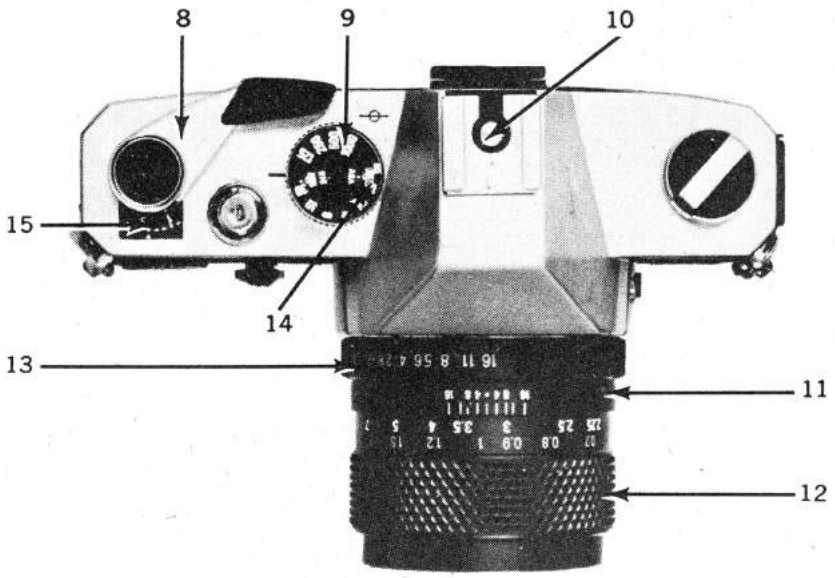
35mm Focal-Plane Shutter Reflex

MAMIYA/SEKOR DSX 1000

TYPE: 35mm eye-level single-lens reflex. LENS: 55mm f/1.4 Mamiya/Sekor SX in interchangeable screw-thread bayonet mount with lock and provision for maximum-aperture exposure readings, stops to f/16, focusing to 18 in. SHUTTER: Cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, FP and X sync. VIEWING: Non-interchangeable eye-level prism with central microprism, full focusing screen. OTHER FEATURES: Dual mercury-battery-powered CdS cell circuits behind semi-silvered spot on mirror and on either side of finder eyepiece measure either bottom spot or entire picture area at full aperture with SX lenses or at stop-down aperture with other lenses, depth-of-field preview, hot sync shoe. PRICE: $299.95 with 55mm f/1.8 SX lens, $329.95 with 55mm f/1.4. MANUFACTURER: Mamiya Camera Co., Tokyo, Japan. IMPORTER: Bell & Howell Inc., 7100 McCormick Rd., Chicago, Ill. 60645. PHYSICAL DIMENSIONS: 6 in. wide, 3¾ in. high, 3¾ in. deep. WEIGHT: 2 lb. 4 oz.



1. Shutter release. **2.** Folded rewind crank. **3.** Sync contacts. **4.** Average/spot meter lever. **5.** Lens release button. **6.** Self-timer. **7.** Rubberized hand grip. **8.** Rapid-wind lever. **9.** Shutter-speed dial. **10.** Hot-shoe flash contact. **11.** Depth-of-field scale. **12.** Focusing ring. **13.** Aperture scale. **14.** ASA film-speed setting. **15.** Frame counter.



In the new Mamiya/Sekor DSX 1000, the basic optical and mechanical features of the 1000DTL have been upgraded to perform full-aperture metering using a new locking screw-thread lens mount with an aperture-setting lever. The exterior is also radically new. (The 500 and 1000 DTL's, by the way, remain in the line at a lower price for those who still opt for stop-down metering only, don't need a flash shoe, and would like to save a bit of cash.)

The basic "feel" of the DSX camera is quite similar to the DTL, with the view through the finder being virtually identical. The Fresnel lines in the outer areas are now much finer, however. The meter needle at the right rides between two black pincers, marked + and –, indicating over and underexposure.

At the bottom center of the screen are etched lines indicating the approximate 6 percent of picture area covered by the spot meter, together with a small pointer which indicates an "S" when the spot meter is in use, and an "A" when the camera is set for full area measurement. The DSX has a warning translucent red flag which appears at the right-hand side of the finder when there is insufficient light.

The lens mount accepts all single-pin, screw-thread lenses for stop-down metering. However, the considerably redesigned SX lens barrel incorporates a locking slot at the rear which mates with a locking pin on the camera body lens ring when the lens is attached, plus a tiny metal pin which nudges a spring lever set in an arc around the camera body lens mount, thereby communicating the actual aperture set.

The metering system remains on as soon as you pull the rapid-wind lever about 10° from the camera body where it remains in operating position. To shut off the meter, you push in on the central hub of the wind lever as you do on the DTL cameras. (Full-aperture metering is available on a full series of SX lenses, which currently range from a 21mm f/4 to a 200mm f/3.5.)

Every shutter speed, as checked on our Sigma equipment, proved to be accurate to within ⅓ f/stop (most were even more accurate)—a very commendable performance—and meter accuracy was always within one f/stop. With slow ASA films (which would mean color), accuracy was even better, to within ½ f/stop.

Certainly, the fine-lined Fresnel screen made focusing outside the microprism area easier than with many other SLR's, while the easily visible needle-centering indicators were a decided improvement over earlier Mamiya models in dim light. Also the better gripping surfaces all around the camera body and lens provided far faster camera handling than heretofore.

In practical picture taking, we found the Mamiya/Sekor to be a rugged customer with average noise in shutter operation, good convenience of controls (including the ratchetted wind lever) and a comparatively sophisticated dual metering system.

MINOLTA SR-T 102

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.7 MC Rokkor-X with interchangeable bayonet mount, stops to f/16, focusing to 1.75 ft.
SHUTTER: Cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, FP and X sync, self-timer.
VIEWING: Fixed eye-level prism, split-image rangefinder, microprism collar, full focusing screen.
OTHER FEATURES: One PX-13 or 625 mercury battery powers circuit using two CdS cells in series to produce Contrast Light Compensating measurement of entire screen at full aperture, shutter speeds and apertures visible in finder, multiple exposure, depth-of-field preview, mirror lock, built-in hot shoe.
PRICE: $417; SR-T 102 B (black body), $427.
MANUFACTURER: Minolta Camera Co., Ltd., Osaka, Japan.
IMPORTER: Minolta Corp., 101 Williams Drive, Ramsey, N.J. 07446.
PHYSICAL DIMENSIONS: 4¼ in. deep, 4½ in. high, 6½ in. wide. WEIGHT: 2 lb. 3 oz.

The SR-T102 delivers all the familiar ingredients of the SR-T101 and more, including provision for double exposures, aperture readout in the viewfinder, and the choice between three normal lenses: 50mm f/1.7, 50mm f/1.4 and 58mm f/1.2 MC Rokkor-X.

Focusing is improved considerably with the adoption of a horizontal split-image rangefinder within a small microprism collar on a Fresnel matte screen. Even with a 500mm f/8 mirror lens, the split-image proved acceptable. Although viewfinder magnification is high, the image is extremely bright and eyeglass-wearers should have no trouble in viewing the entire field plus aperture, shutter-speed and meter information.

The addition of aperture readouts is allowed for by making the prism housing about 3/16 in. deeper to accommodate a mirror system that reflects the f/stops from the lens barrel to a window above the viewing field; this is managed by way of a minuscule port on the prism's underside. Since numbers are clearly etched in white on all MC Rokkor and MC Rokkor-X lenses, they usually come in quite brightly.

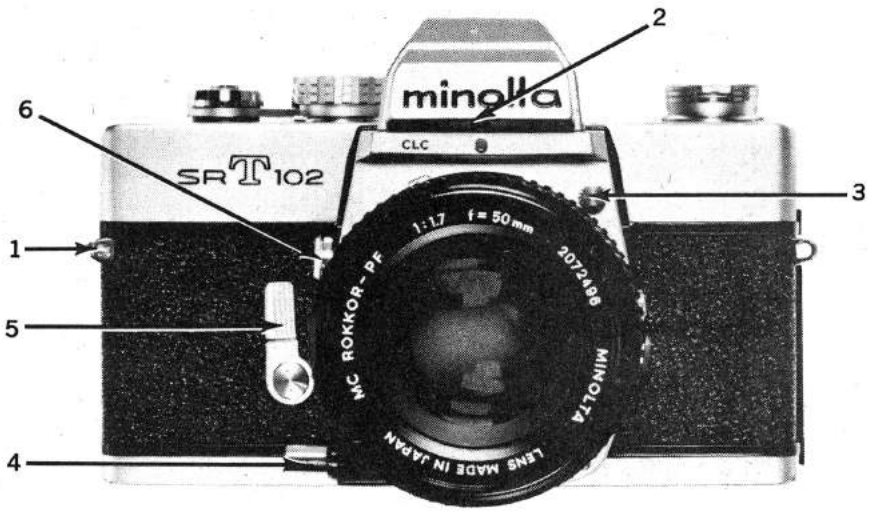
The 102 handles double exposures with great ease. Make your initial exposure, then depress the rewind button on the bottom of the camera before recocking the shutter for your second exposure. Since depressing the button disengages the sprocketed film-advance mechanism, you might think that the sprocket gear could move film out of alignment on the second exposure. After several run-throughs, we proved to ourselves that these fears are groundless. Registration was accurate every time. Nine working parts were added inside to do the job.

Minolta has introduced two new normal lenses for the 102 (and other Minoltas): a six-element 50mm f/1.7 instead of the previous six-element 55mm f/1.7, and a seven-element 50mm f/1.4 rather than the previous six-element 58mm f/1.4. Exterior changes include easier-to-grip diamond-studded rubberized focusing rings instead of the former grooved metal, f/stops in white for better visibility, and improved lens caps with tab grips on the inside rim to grab your lens more assertively.

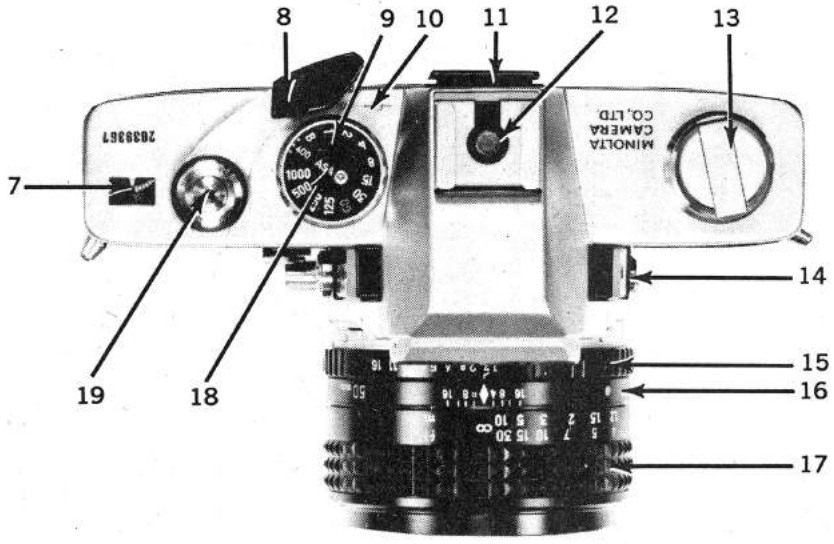
The matched-needle metering system (with MC Rokkor and Rokkor-X lenses), using Minolta's famous Contrast Light Compensator approach, remains the same; that is, it balances out most unusually contrasty scenes without having to open up or close down, as with averaging-type systems.

Our Zelox testing equipment proved meter readings to be accurate to well within ½ f/stop of a known light source. Shutter speeds were also found to be either precise or within accepted limits.

All camera controls are in exactly the same place as on the 101. Fine. The SR-T101 has always been a camera that handled extremely well—from easy loading to comfortable operation—and the 102 does likewise with welcome improvements.



1. Shoulder-strap lug. **2.** Aperture relay port. **3.** Lens-mount lock. **4.** Depth-of-field preview button. **5.** Self-timer. **6.** Mirror lock. **7.** Auto resetting frame counter. **8.** Wind lever. **9.** Shutter-speed dial. **10.** Film plane marker. **11.** Viewfinder eyepiece. **12.** Hot shoe sync. **13.** Rewind crank. **14.** Flash sync terminal. **15.** Aperture-control ring. **16.** Depth-of-field scale. **17.** Footage scale and focusing ring. **18.** ASA film-speed dial. **19.** Shutter-release button.



MIRANDA SENSOREX II

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.8 or f/1.4 Auto Miranda, with interchangeable bayonet mount, stops to f/16, focusing to 17 in.
SHUTTER: Cloth focal-plane with speeds from 1 to 1/1000 sec., plus B, and FP, X sync at 1/60 sec.
VIEWING: Interchangeable prism and screen, with full focusing screen, central split-image rangefinder and fine-focusing collar.
OTHER FEATURES: Mercury battery-powered spot reading CdS exposure meter (behind lens) on mirror, measures bottom picture area at full aperture, depth-of-field preview button, shutter wind indicator.
PRICE: $334.90 with f/1.8 lens, $374.90 with f/1.4 lens, $352.50 and $392.50 in black finish.
MANUFACTURER: Miranda Camera Co., Ltd., Tokyo, Japan.
IMPORTER: AIC Photo, Inc., 168 Glen Cove Rd., Carle Place, N.Y. 11514.
PHYSICAL DIMENSIONS: 5⅝ in. wide, 3⅝ in. high, 3½ in. deep (from front of lens to camera back). WEIGHT: 2 lb. 2 oz.

An updated version of the original Miranda Sensorex, the Miranda Sensorex II is offered for those who don't want automatic exposure and/or for those who wish to have a fine match-needle companion SLR compatible with the Miranda Sensorex EE. The prism (3) on this Model II is a bit smaller and is directly interchangeable with the EE. Since it's the same prism for the II and EE, it has a hot shoe (11) on top. Gone is the maximum aperture-ASA index setting wheel from the front. It now appears on a collar (15) surrounding the rewind crank (13) as it does on the EE. The II's film-advance lever (8) is a direct copy of the EE's—short with a black plastic tip jutting out for fast operation, and clicking decisively forward out of the way when not in use. The only holdovers from the original are the shutter-release button (2) on the front of the body just above the self-timer lever (1), instead of the EE's top-mounted release, and the extra-large frame counter (10).

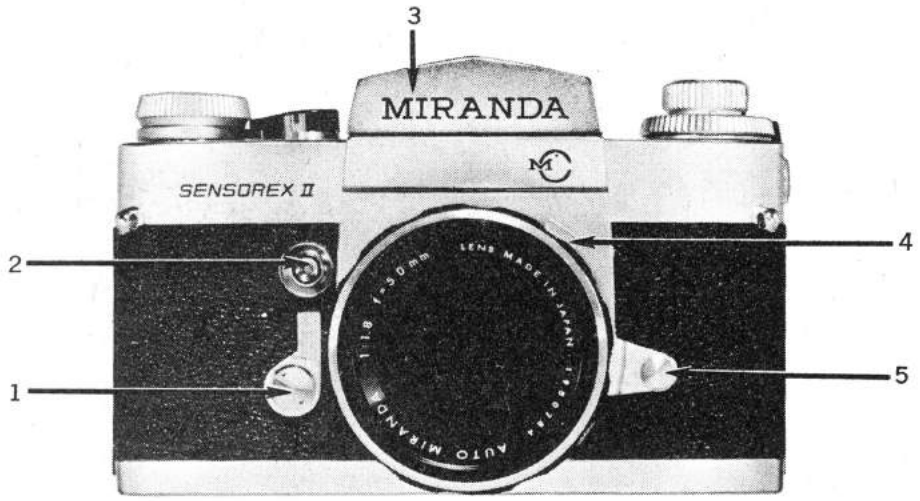
The II's viewfinder match-pointer system contains the old needles (a straight pointer that swings freely and the lollypop-shaped pointer that does the matching) on the right. The camera comes with a split-image rangefinder in the center of the standard focusing screen, but it can also be ordered with a microprism instead (both are surrounded with a fine-focusing collar). If you get the rangefinder and then change your mind, the Miranda repair depots will make the switch for free if you bring in the camera or for a $2.50 handling charge by mail.

People wearing glasses should have no trouble seeing the entire finder with its full focusing screen. The meter cell, actually a printed circuit placed underneath the mirror, measures only a concentrated portion of the bottom of the picture area, rather than the central spot, for ASA 25-1600.

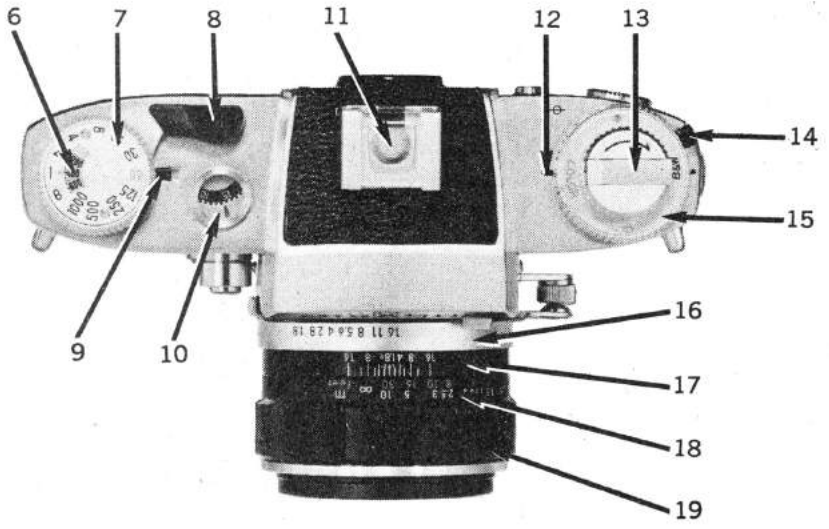
The maximum aperture of the lens must be communicated to the full aperture measuring meter and this must be done manually via a simple dial (15) under the rewind crank. The desired aperture clicks into place easily and securely. On the side of this dial is the meter on-off switch (14), similar to the original camera's but with a smooth plastic tip.

In use the Sensorex II performs in typical Miranda style. The 1-in.-diameter shutter-speed dial (7) is properly marked with large, clear black numbers on a brushed chrome surface. Its edge is knurled, as is the likewise conveniently large, rewind crank (13) with large rotating tip. The ASA setting scale (6) within the shutter dial (7) is slightly darker and more readable than on the EE. All controls are comfortably large and well placed.

This camera will accept all Miranda accessories. Miranda's non-EE lenses have the protruding arm (5) that engages an arm on the body of the II as on the original for match-pointer meter control. In addition, new Model II lenses already have the connector pin built in on the rear mount so that you can use them for full aperture reading on the EE body.



1. Self-timer. **2.** Cable-threaded shutter release. **3.** Interchangeable prism. **4.** Depth-of-field preview button. **5.** Aperture-control coupling lever. **6.** ASA index setting window. **7.** Shutter-speed dial. **8.** Rapid-wind lever. **9.** Shutter wind indicator. **10.** Frame counter. **11.** Accessory shoe, direct flash contact. **12.** Maximum-aperture setting index. **13.** Rapid rewind crank. **14.** Battery switch. **15.** Maximum-aperture wheel. **16.** Aperture scale. **17.** Depth-of-field scale. **18.** Footage scale. **19.** Focusing ring.



NIKKORMAT FTN

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/2, f/1.4 or 55mm f/1.2 Nikkor with interchangeable bayonet mount, stops to f/16, focusing to 2 ft.
SHUTTER: Metal Copal Square-S focal-plane with speeds from 1 to 1/1000 sec. plus B, MX sync, self-timer.
VIEWING: Non-interchangeable eye-ievel prism with full focusing screen plus central grid, fine-focusing collar.
OTHER FEATURES: Mercury battery-powered CdS circuit with cells at either side of the viewfinder eyepiece which measure light (centrally weighted) at full aperture over entire focusing screen, depth-of-field preview button, mirror lock-up lever, meter needle visible in top plate and finder, shutter speed visible in finder.
PRICE: With 50mm f/2 Nikkor-H, $399.50; with 50mm f/1.4 Nikkor-S, $491; with 55mm f/1.2 Auto-Nikkor, $572.50; black-finish camera body is $10 additional.
MANUFACTURER: Nippon Kogaku K. K., Tokyo, Japan.
IMPORTER: Nikon, Inc., Garden City, N.Y.
PHYSICAL DIMENSIONS: 5¾ in. wide, 3¾ in. high, 4 in. deep (front of lens to camera back). WEIGHT: 2 lb. 6½ oz.

Three major improvements distinguish the 1975 Nikkormat FTN over the earlier model. The rapid-wind lever has a comfortable plastic tip; the self-timer lever has been improved cosmetically; and all lenses are now available with Nikon's version of multicoating called Nikon Integrated Coating, identified on each normal lens by a "C" engraved on the name ring and a black-finish front ring instead of a chrome one.

To use the metering system, you set the ASA index (12-1600) on the scale underneath the lens mount, attach the lens, slip the meter coupling pin (17) into the lens aperture slot (18) and twist the lens to maximum aperture. This automatically sets the ASA index on the camera to the maximum aperture of the lens. It's advisable, however, to check the maximum aperture scale to make sure the lens does index.

The actual shutter speed in use plus the next lower and next higher can now be seen within the viewfinder. This serves as a constant exposure reminder.

The fine Fresnel rings in the viewfinder are virtually invisible, thus making focusing easier. Plus and minus symbols in the viewfinder meter centering area indicate over or underexposure. In meter tests we found that readings as low as ⅛ sec. at f/1.4 could be made with a film having an ASA rating of 400. Meter accuracy proved to be within ½ f/stop of a known light source over its range when tested on the Aerotronic P-803 Meter Tester. The centrally weighted system aided in obtaining more accuracy in backlit situations.

Most controls on the Nikkormat fall just where you want them. One short 130° throw of the excellently shaped, solid film-advance lever (8) takes care of film and shutter wind. An unusually gentle shutter-release button (2) is close to the wind lever. The Nikkormat FTN is the only SLR to make the preview control a large easy-to-push button right on the top plate of the camera (3) where it's just as handy as the shutter release. A large, clearly defined needle within the picture area on the right side of the finder is centered for proper exposure. A secondary needle window is located on the left top of the camera (12).

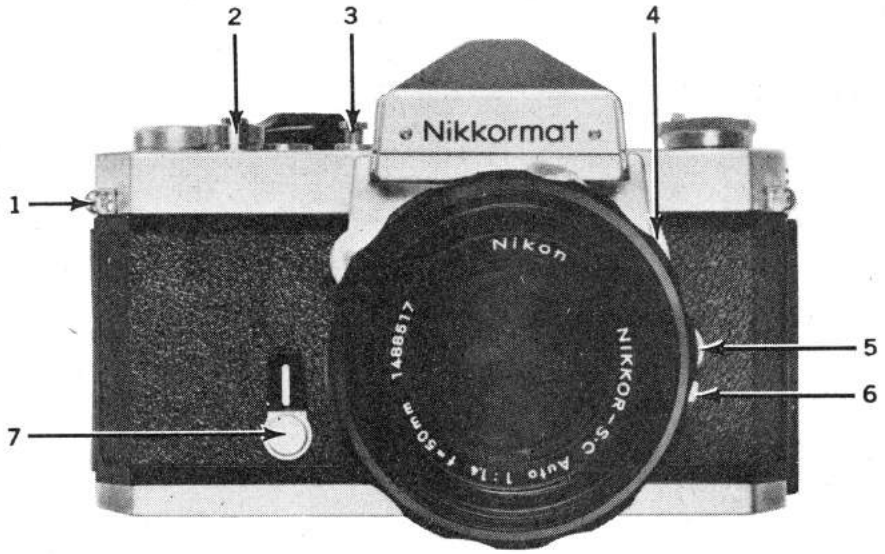
The meter circuit turns on when the rapid-wind lever is moved from inboard carrying position. For virtually vibration-free exposures while on a tripod, there's a mirror lock (4) which swings the mirror up.

The central grid is good. It worked well on lenses up to 400 and splendidly for close-ups with a bellows unit at full 1:1.

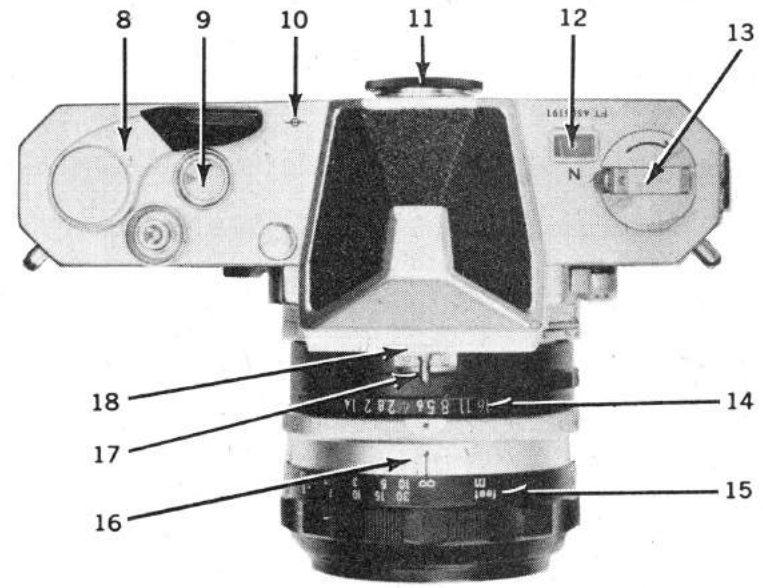
Eyeglass wearers can see almost the entire focusing screen on the Nikkormat FTN.

The Copal Square-S shutter proved well within the acceptable range of accuracy over its entire range, according to our lab test equipment.

While the Nikkormat FTN has steadily increased in cost to the point where it's no longer "medium-priced," it's still the cheapest way to enter the Nikon system.

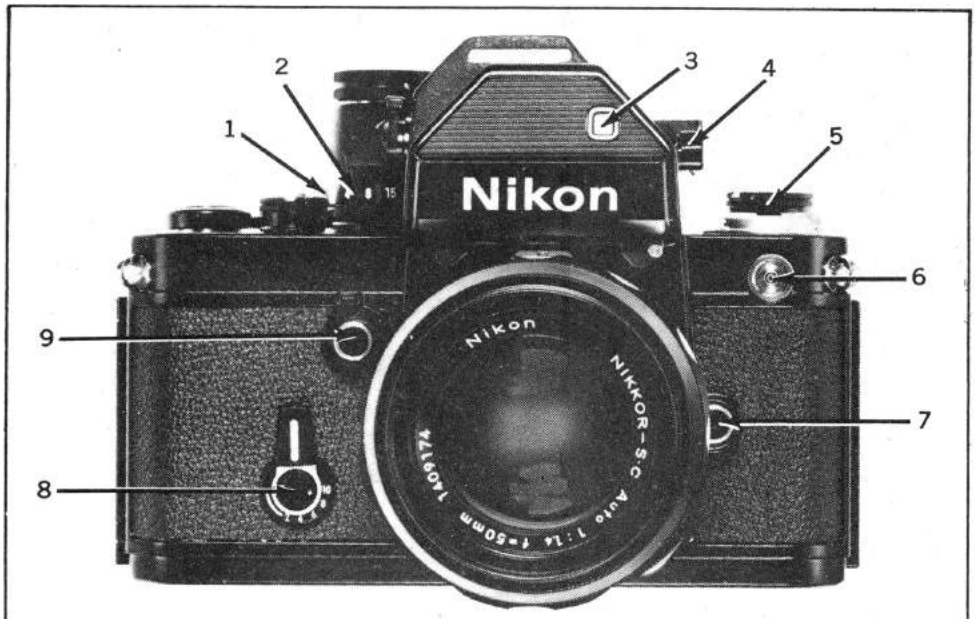


1. Shoulder-strap lug. **2.** Shutter-release button. **3.** Depth-of-field preview button. **4.** Mirror-locking catch. **5.** Lens-locking button. **6.** Shutter-speed setting lever. **7.** Self-timer. **8.** Film-advance lever. **9.** Auto resetting frame counter. **10.** Film plane indicator. **11.** Viewfinder eyepiece. **12.** Meter window. **13.** Film rewind crank. **14.** Aperture scale. **15.** Footage scale and focusing ring. **16.** Depth-of-field scale. **17.** Meter-coupling pin. **18.** Meter-coupling slot.

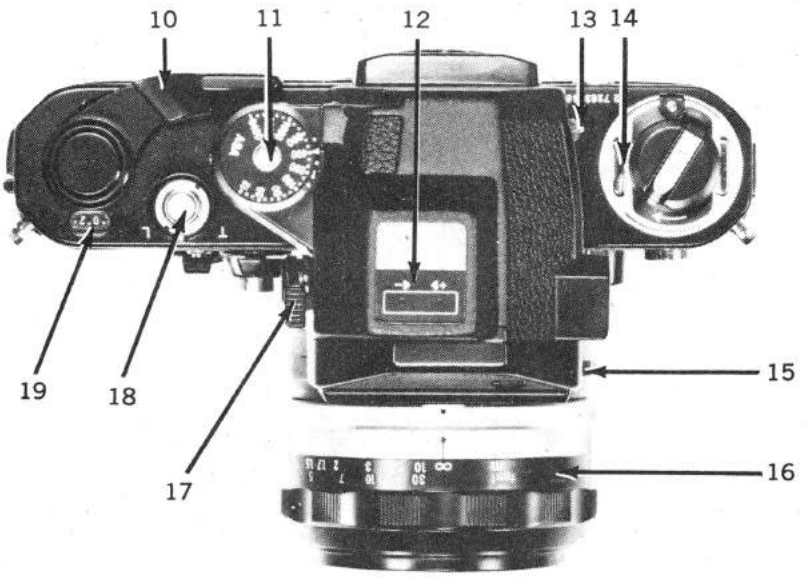


NIKON F2-S PHOTOMIC

TYPE: 35mm eye-level single-lens reflex. LENS: 50mm f/2, f/1.4 or 55mm f/1.2 Nikkor with interchangeable bayonet mount, stops to f/16, focusing to 2 ft. SHUTTER: Quilted titanium-foil focal-plane with speeds from 10 to 1/2000 sec. plus B, FPX sync. VIEWING: Interchangeable eye-level prism with interchangeable screen, central split-image rangefinder, fine-focusing collar, full focusing Fresnel screen. OTHER FEATURES: Silver battery-powered CdS circuit cells on either side of finder eyepiece measure center-weighted spot at full aperture, aperture and shutter speed visible in finder, diode light exposure control in finder and atop prism, Nikon electronic flash ready light visible in finder, mirror lockup switch, self-timer, provision for optional EE aperture control attachment. PRICE: $827.50 with 50mm f/2 lens, $919 with f/1.4 lens, $1,000.50 with 55mm f/1.2 lens. MANUFACTURER: Nippon Kogaku K.K., Tokyo, Japan. IMPORTER: Ehrenreich Photo-Optical Industries, Inc., 623 Stewart Ave., Garden City, N.Y. 11530. PHYSICAL DIMENSIONS: 6 in. wide, 4 5/16 in. high, 3 15/16 in. deep. WEIGHT: 2 lb. 12 oz.



1. Shutter selector and locking collar. **2.** Shutter-speed dial. **3.** Maximum aperture window. **4.** EE aperture-control connector. **5.** Folded rewind crank. **6.** Flash sync terminal. **7.** Lens lock button. **8.** Slow-speed selector and self-timer lever. **9.** Depth-of-field preview lever. **10.** Rapid-wind lever. **11.** ASA film-speed scale. **12.** Exposure-control diodes. **13.** Viewfinder flash readylight terminal **14.** Hot shoe sync contacts. **15.** Aperture scale. **16.** Focusing ring. **17.** Prism release lever. **18.** Shutter-release button. **19.** Frame counter.



The Nikkormat F2-S's body represents not a radical departure from the old tried-and-true F camera, but a refined and modified updated version based on all the inputs heard from amateurs and pros on how to improve Nikon's acknowledged classic.

Shutter speed allows a full 1/2000 sec. top speed, 1/80 sec. X sync, and the self-timer mechanism stretches slow speeds down to 10 sec.; the battery cells are silver instead of mercury to produce better low temperature performance and are located in the camera instead of the finder to make the finder smaller and lighter; shutter speeds and apertures are visible in the finder plus a flash unit ready light; the shutter release has been relocated; film plane accuracy has been improved with a film roller and cartridge spring holder; body contours have been softened with a hinged, removable back instead of a slip-off one; the film-wind lever has been strengthened, made smoother, the travel shortened to 120° and a plastic tip has been added; a redesigned rewind button allows the camera to be recocked for double or triple exposures; the take-up spool is multislotted; film speeds between 1/80 and 1/2000 sec. are infinitely variable; neckstrap lugs now have steel insets to prevent wear; the instant-return mirror is reset and lengthened to prevent view cutoff with long lenses, and can be raised before or after exposure; the mechanical mirror mechanism is now fully enclosed; the Photomic finder system has a new body locking device to make it more secure; the rewind lever can be raised for handier gripping and to allow accessories to be mounted beneath it; flash sync is automatically set as shutter speeds are determined; the PC terminal has a special screw-thread locking collar; there's a film reminder clip to hold a film box end on the camera's back; electric motors fasten quickly and securely to the camera's bottom.

The F2-S's finder yields the same picture view as the regular F2, but two glowing red diode lights replace the meter needle. When both lights (in the form of arrowheads) light, exposure is correct. It took us some time to become used to the system, but once mastered, we found it vastly preferable since 1) we could meter easily in light or dark, 2) the diodes could distinguish even ¼ f/stop of illumination change, 3) the finder normally reads down to 1 sec. at f/1.4 or to 8 sec. with a special technique, and 4) the glowing diodes light the shutter-speed and aperture markings making them visible in low light.

While users must be careful to shut off the meter after use lest they drain the battery completely, we believe that electronic readouts like these diodes represent the wave of SLR controls of the future.

OLYMPUS OM-1 MD

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.8, f/1.4 or 55mm f/1.2 Zuiko in interchangeable bayonet mount, stops to f/16, focusing to 18 in.
SHUTTER: Cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, FP and X sync, provision for screw-in hot sync shoe, self-timer.
VIEWING: Non-interchangeable eye-level prism with interchangeable viewing screens, central microprism with full focusing screen.
OTHER FEATURES: CdS cells on either side of the viewfinder eyepiece measure entire picture area at full aperture, meter pointer visible in finder, mirror lockup switch, locking PC terminal.
PRICE: $464.95 with 50mm f/1.8 lens.
MANUFACTURER: Olympus Optical Co., Ltd., Tokyo, Japan.
IMPORTER: Ponder & Best, Inc., 1630 Stewart St., Santa Monica, Calif. 90406.
PHYSICAL DIMENSIONS: 5½ in. wide, 3¼ in. high, 3 7/16 in. deep. WEIGHT: 1 lb. 10 oz. with f/1.8 lens.

The Olympus OM-1 is by far the smallest (5⅜ x 3¼ x 3½ in.), lightest (1 lb. 10 oz.), standard format 35mm single-lens reflex ever manufactured, centering around a camera body with innovations in the shutter mechanism, lens mount, interchangeable viewing screens and body castings—all in the interest of saving space. The latest "MD" designation, on a plate to the right of the lens, stands for "motor drive," indicating that present and future OM-1's have a special switching circuit and mechnical fittings built in which allow you to use Olympus' super-compact motor drives on "MD" bodies without further modification.

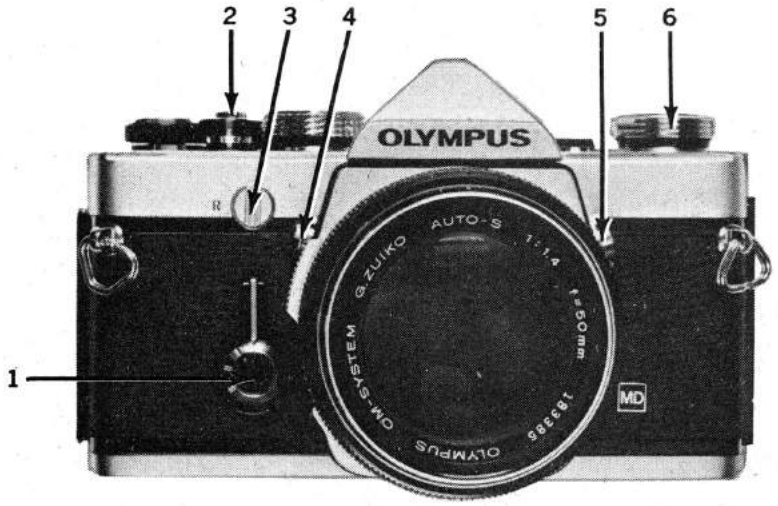
Once you get past your initial amazement at the OM-1's small size, you begin to perceive its identity as a conventional center-weighted, full-aperture metering, match-needle, bayonet-mount SLR. To activate the meter you first set the film speed (ASA 25-1600) by pressing on a small silver button just behind the shutter release, and then rotating what looks like a common garden-variety shutter-speed dial until the proper number lines up with the index mark on the shutter-release collar. You then turn a large, clearly marked meter switch at the left of the pentaprism to the "on" position, and center the needie on the viewfinder's left side in the middle of two pincers labeled plus (above) and minus (below) by rotating either the shutter-speed dial (located "around the lens") or the lens-aperture ring (at the very front of the lens).

Once you get the hang of grabbing for the camera controls in the right places the meter works very well. Finding the two ⅝ in.-long knurled tabs to turn the shutter-speed dial can be a bit of a nuisance with the camera at eye-level, but its accuracy is excellent, reading to within ½ stop of absolute accuracy throughout its entire range of high, medium and low illumination levels, all the way down to a gloriously low ½ sec. at f/1.8 with ASA 400 film.

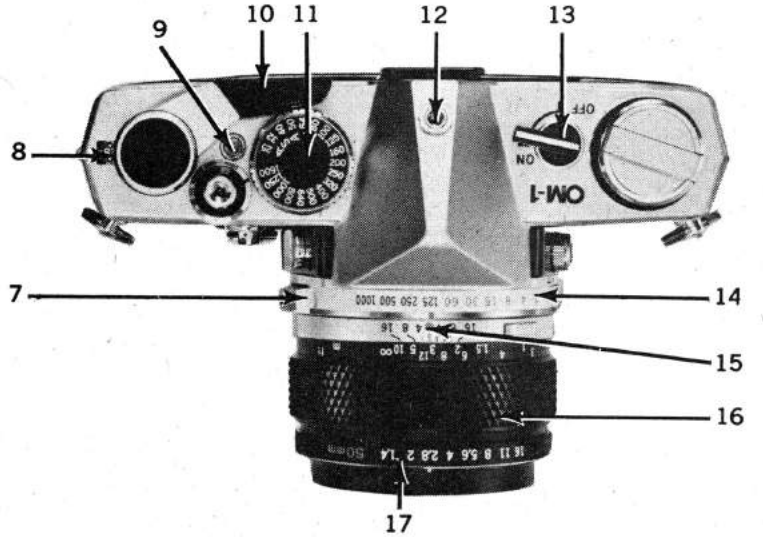
The Olympus engineers have managed to squeeze an almost life-size finder image out of the 50mm lens by incorporating greater than usual magnification in the rear eyepiece. The finder also shows a commendable 97 percent of the actual image on the negative. The overall viewing image is definitely brighter than normal and almost the entire field, including the needle and metering index, is visible by eyeglass wearers. There are no shutter speeds or apertures in the finder.

Olympus' super-small design philosophy really excels in that difficult-to-define area known as handling. Its semi-rounded ends nestle comfortably in your hands; none of the controls suffer from over-miniaturization, and focusing (via a 13/32-in.-wide diamond-studded pattern rubberized ring on the 50mm f/1.8) is reassuringly smooth.

If, like some of us, you've always longed for a 35mm single-lens reflex about the same size as a Leica M-3 and virtually as quiet and refined, take a good look at the Olympus OM-1 MD, the smallest and surely one of the cleverest SLR's around.



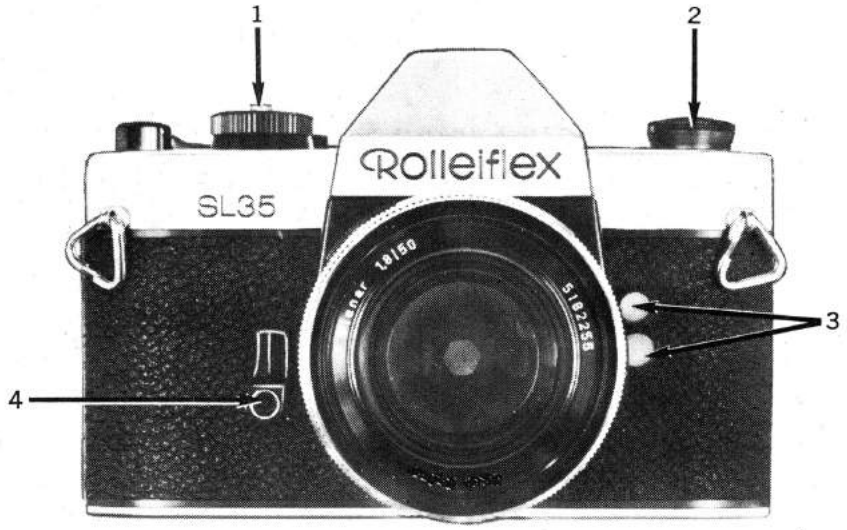
1. Self-timer. **2.** Shutter release. **3.** Rewind switch. **4.** Mirror lock. **5.** PC flash terminal. **6.** Folded rewind crank. **7.** Shutter-speed control lug. **8.** Frame counter. **9.** Film-speed release button. **10.** Rapid-wind lever. **11.** ASA film-speed setting dial. **12.** Hot-shoe connection. **13.** Meter switch. **14.** Shutter-speed ring. **15.** Depth-of-field scale. **16.** Focusing ring. **17.** Aperture ring.



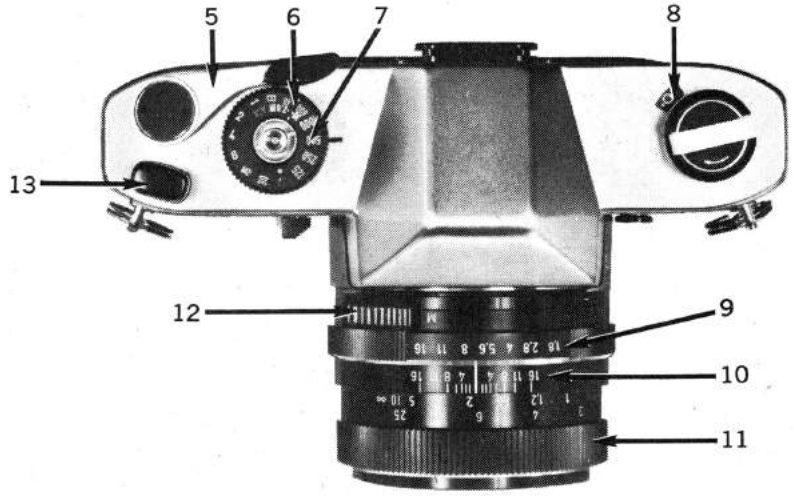
ROLLEIFLEX SL35

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.8 SL Xenon or 50mm f/1.4 HFT Planar with interchangeable bayonet mount, stops to f/16, focusing to 18 in.
SHUTTER: Rubberized focal-plane with speeds from 1 to 1/1000 sec. plus B, FP, X sync, self-timer.
VIEWING: Fixed eye-level prism with central microprism, fine-focusing collar, full focusing screen.
OTHER FEATURES: Mercury battery-powered CdS circuit cells on either side of viewfinder eyepiece measure center-weighted area of full picture field at shooting aperture.
PRICE: $292.50 with f/1.8; $429 with f/1.4; black finish, $15 additional.
MANUFACTURER: Rollei-Werke, Franke & Heidecke, Braunschweig, West Germany.
IMPORTER: Rollei of America Inc., 100 Lehigh Drive, Fairfield, N.J. 07006.
PHYSICAL DIMENSIONS: 5 9/16 in. wide, 3⅝ in. high, 3 7/16 in. deep. WEIGHT: 29 oz.

Rather amazingly—considering our rampant inflation—the Rolleiflex SL35 has an even lower price tag on it than it did last year. This is primarily due to Rollei's decision to transfer manufacture of this camera—unchanged in design—to their relatively new facilities in Singapore.



1. Shutter release. **2.** Folded rewind crank. **3.** Flash sync contacts. **4.** Self-timer. **5.** Rapid-wind lever. **6.** ASA index film-setting window. **7.** Shutter-speed dial. **8.** Frame counter. **9.** Aperture scale. **10.** Depth-of-field scale. **11.** Focusing ring. **12.** Manual diaphragm control lever. **13.** Meter operating button.



It is quite compact; the shape, with its rounded-off ends, is convenient to hold. The nearly 1:1 viewfinder image is adequately bright with a very good central microprism which shatters out-of-focus images nicely and snaps into sharp alignment at proper focus. The fine-focusing collar is very good but focusing is so easy on the entire screen that the collar is really unnecessary. The screen itself, although it does have a Fresnel plate, is virtually ringfree to the eye and slightly on the coarse side in order to produce an easier-to-focus image. Eyeglass wearers will be able to see most of the viewfinder area.

To use the metering system, you press downward on a large black plastic button near the hub of the wind lever. This turns on the meter and also shuts down the lens to the shooting aperture. By shifting either the easy-to-read shutter-speed dial atop the camera or the lens' aperture ring, you center the meter needle at the right side of the finder within the picture area. With an ASA 400 film the camera can read down to ½ sec. at maximum aperture, a very good performance indeed.

The plastic-tipped, well-shaped wind lever can tension the shutter and wind film in a single 170° stroke or several smaller ones. The shutter release is threaded at the center of the shutter-speed dial, is smooth, but does take some pressure to release. Shutter and mirror noise are slightly quieter than average for an SLR.

To open the back for loading you pull upward on the rapid-rewind crank knob. The interior is neatly finished with a good-sized pressure plate and a dual-slotted, easy-to-operate take-up spool.

We noted that the auto resetting frame counter, instead of returning to zero when the back opens, actually zeroes when the rewind knob is pulled up completely, so it's possible to retain the number of frames shot until you actually remove the film.

Interior mirror chamber baffling is well carried out, although we would like to see the bright metal edges of the lens mount at the front corners toned down a bit with blackening, making for even better interior flare elimination.

The Planar mount is, as expected, very well-machined, smooth in operation and legibly engraved with white-on-bright-black finish. To remove a lens you push inward on a red button on the lower left side of the camera body lens mount and twist the lens 45° counterclockwise. The mount itself held the lens quite securely. Adapters for Pentax-type-thread lenses to be used automatically or Lecia-type-thread lenses to be used for close-ups are available.

Manufacture of the Planar lenses, formerly by Zeiss in Germany, has been taken over by Rollei in Singapore. We hope to test the new f/1.4 Planar with HFT (High Fidelity Transfer) multicoating soon.

TOPCON SUPER DM

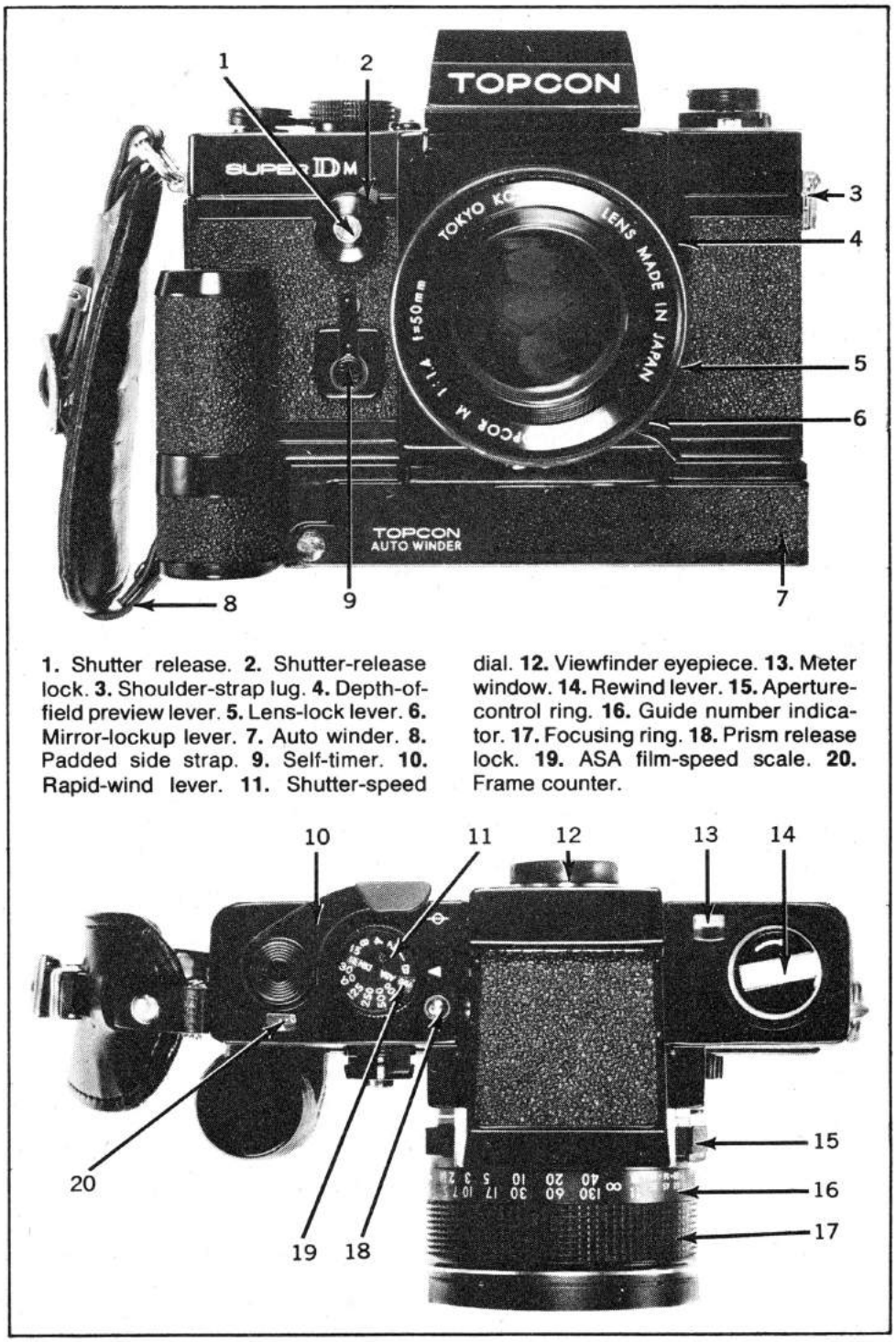
TYPE: 35mm eye-level single-lens reflex.
LENS: Interchangeable 50mm f/1.4 GN Topcor M, with stops to f/16 and focusing to 15 in.
SHUTTER: Focal-plane with speeds from 1 to 1/1000 sec. plus B, FP, X and M sync, self-timer.
VIEWING: Interchangeable eye-level prism with split-image rangefinder, fine-focusing collar plus full-focusing screen which is interchangeable with accessory viewing screens.
OTHER FEATURES: Mercury battery-powered CdS exposure meter layer on reflex mirror measures entire area at full aperture, quick-return diaphragm, instant-return mirror, depth-of-field preview lever, interchangeable eye-piece correction lenses, battery-operated auto winder, provision for electric motor drive and instant-attaching bulk-film magazine, meter needle and f/stops visible in finder, Topcor lenses from 20mm to 500mm available.
PRICE: $727.45 in black finish.
MANUFACTURER: Tokyo Optical Co., Ltd. Tokyo, Japan.
IMPORTER: Paillard, Inc., Linden, N.J.
PHYSICAL DIMENSIONS: 6 in. wide, 5 in. high (maximum), 3 15/16 in. deep.
WEIGHT: 3 lb. 7 oz.

Take one venerable Topcon Super D, complete with full-aperture metering in the body and interchangeable prism, add a black finish and an accessory Auto Winder, and you've got a Super DM.

Topcon's Auto Winder simply takes the place of the traditional thumb-operated film-advance lever (though the manual lever, located in the usual place, is still available as an auxiliary film advance in case you run out of battery power). As you relax your finger pressure on the shutter button, the film is automatically advanced to the very next frame. It takes about ¾ sec. per frame and is accompanied by an average decibel whir—that's it. If this one-at-a-time film advance strikes you as anticlimactic (or you think you've got the fastest lever-advance thumb in the West), just try to fire your SLR as rapidly as a DM Topconeer. As his camera rests serenely cradled against his cheek, yours will generally be jouncing around as you wind the film rapidly. In other words, Topcon's little auto-winding motor *does* increase most people's practical photographic firepower more than the bare specifications might indicate. If not quite an electric motor drive, it's generally much faster than a film-advance lever.

The Super D and its predecessors have long been blessed with one of the most convenient systems of prism-and-screen-unit interchangeability around. To remove the prism, you just push down on a little chrome button to the left of the shutter-speed dial and slide the prism back out of its grooved slot. The screen lifts out easily by hooking even a chewed-up fingernail under the large tab at its rear and lifting upwards. The innovation comes in the form of the overhanging prism front adorned with the Topcon nameplate. Look under it and you'll see a squarish aperture, behind which is a mirror which reflects the large white-on-black apertures off the lens aperture ring into a little box just above the finder area. This system works extremely well. You can see the apertures clearly in virtual darkness as well as in bright sunlight, and you needn't shift your eye very much in order to do so. Our only gripe with Topcon's engineers is that they haven't yet devised a system to allow you to see shutter speeds in or around the finder area.

Optically, the largish 1¾-in.-deep, 2⅝-in.-diameter lens performed very well under a wide variety of lab and field conditions. But ultimately, we've got to get back to handling, for this in our opinion is the DM's reason for being. If a precision full-aperture, match-needle, behind-lens metering SLR—even with an electric film wind—doesn't *sound* too exciting by today's standards, we can only say that using the Topcon Super DM proved to be infinitely more informative than reading the spec sheet. A motor drive—even a one-at-a-time motor drive—must be experienced.



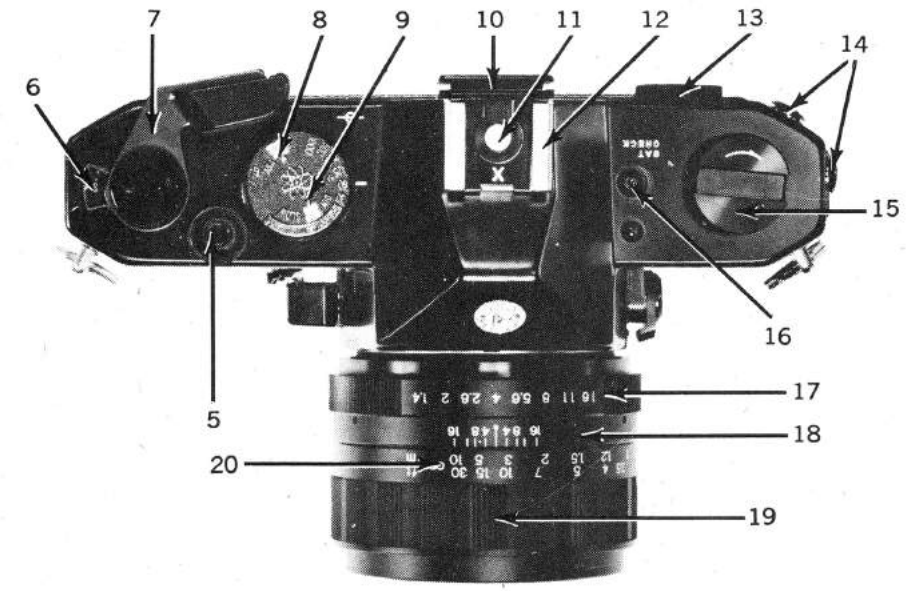
1. Shutter release. **2.** Shutter-release lock. **3.** Shoulder-strap lug. **4.** Depth-of-field preview lever. **5.** Lens-lock lever. **6.** Mirror-lockup lever. **7.** Auto winder. **8.** Padded side strap. **9.** Self-timer. **10.** Rapid-wind lever. **11.** Shutter-speed dial. **12.** Viewfinder eyepiece. **13.** Meter window. **14.** Rewind lever. **15.** Aperture-control ring. **16.** Guide number indicator. **17.** Focusing ring. **18.** Prism release lock. **19.** ASA film-speed scale. **20.** Frame counter.

YASHICA TL ELECTRO-X ITS

TYPE: 35mm eye-level single-lens reflex.
LENS: 50mm f/1.7, 50mm f/1.4 or 50mm f/1.2 Auto-Yashinon-DX, with interchangeable thread mount, stops to f/16, focusing to 20 in.
SHUTTER: Copal Square SE metal focal-plane with speeds from 2 to 1/1000 sec. plus B, FP, X sync, self-timer.
VIEWING: Non-interchangeable eye-level prism with central microprism, fine-focusing collar, full focusing screen.
OTHER FEATURES: Silver battery-powered CdS exposure meter (behind lens) measures entire picture area at shooting aperture, instant-return mirror, quick-return diaphragm, depth-of-field preview button, mirror lock-up lever.
PRICE: With 50mm f/1.7 Auto Yashinon-DX, $350; with 50mm f/1.4 Auto Yashinon-DX, $390; with 50mm f/1.2, $470.
MANUFACTURER: Yashica, Co., Ltd., Tokyo, Japan.
IMPORTER: Yashica, Inc., 50-17 Queens Blvd., Woodside, N.Y. 11377.
PHYSICAL DIMENSIONS: 6 in. wide, 3¾ in. high, 3⅝ in. deep. WEIGHT: 2 lb. 3 oz.

With this camera, Yashica stabilized its revolutionary through-lens, meter-coupled SLR design. Although the ITS was not the first to incorporate Yashica's pointerless match-needle exposure system, it represents the refinement of the inevitable "bugs" that cropped up in the earlier models. The first Electro-X introduced a pair of lighted arrows, in place of a needle, into the viewfinder (in effect, under and over-exposure warning signals). Instead of matching a needle to an index mark, you adjusted either the shutter or the lens until both lit arrows went out. This "needle matching" method, along with an electronically-controlled Copal-Square SE shutter, did indeed bring a greater degree of accuracy, simplicity and ruggedness to this type of semi-automatic exposure control.

1. Self-timer. **2.** Meter circuit switch. **3.** Shoulder-strap lug. **4.** Mirror lockup lever. **5.** Shutter-release button. **6.** Auto resetting frame counter. **7.** Film-advance lever. **8.** ASA film-speed scale. **9.** Shutter-speed dial. **10.** Viewfinder eyepiece. **11.** Direct flash contact. **12.** Accessory shoe. **13.** Battery compartment cover. **14.** Flash sync terminals. **15.** Film-rewind crank. **16.** Battery check. **17.** Aperture-control ring. **18.** Depth-of-field scale. **19.** Focusing ring. **20.** Footage scale.



The first TL Electro-X filled the bill nicely as an innovative camera, but those warning arrows were, unfortunately, hard to see at times. Yashica took care of the problem, however, with a subsequent model called the TL Electro-X ITS. Besides its all-black finish (the original was in conventional chrome) it sported a new set of arrows along the bottom of the finder, instead of along the right side as in the first model. Our tests proved the new set to be much better than the original system.

Other than that, the only other important change was the addition of a second sync terminal (14) for FP sync to go along with the existing X-sync outlet.

To substantiate the big claims for this revolutionary camera—accuracy and ruggedness—we gave it (just as we did the X) a good going over in the lab and field.

In our lab tests the ITS fared very well on our Zelox testing equipment. This smooth-handling Copal Square SE shutter on our test model proved remarkably accurate. All speeds were very nearly on the button, with only 1/125 sec. straying just a little off the mark, but still very much within tolerances. Likewise the meter; in high and medium range lighting, it too was on the button, and was a mere ¼ stop under in the low range—also well within tolerable limits. With an ASA 400 speed film the meter read accurately down to f/2.8 at 1/30 sec.

The ITS's metering system repeated its performance in field tests. Slides taken with a narrow latitude transparency film were well exposed under various lighting conditions, showing that the meter provided a good average-type reading.

The body is Yashica's best. One feature we particularly like is that back opening catch on the left side. Then there's the film-advance lever (7), non-ratchetted but with a smooth, knurled plastic tip; the large rewind crank (15); an adjustable self-timer (1); and a baffled surface beneath the mirror as well as on its underside that cuts down on unwanted light.

As with the previous Electro model, the ITS benefits from its mechanical simplicity. You certainly don't have to worry much about damaging the metering system if you drop the camera.

LEICA CL

TYPE: 35mm rangefinder camera.
LENS: 40mm f/2 Summicron-C in interchangeable bayonet mount, apertures to f/16, focusing to 2.7 ft.
VIEWING: Combined optical range-viewfinder with projected, auto-parallax-compensating bright frames for 40mm, 50mm and 90mm lenses, shutter speeds and meter scale visible in finder.
SHUTTER: Vertical cloth foal-plane with speeds from ½ to 1/1000 sec. plus B, MX sync at 1/60 sec.
OTHER FEATURES: Behind-lens CdS meter reads central 7 percent of picture area, hot flash shoe, battery check, bottom-mounted folding rewind crank.
PRICE: $525 with standard lens.
MANUFACTURER: Minolta Camera Co., Ltd., Osaka, Japan.
IMPORTER: E. Leitz, Rockleigh Industrial Park, Rockleigh, N.J. 07647.
PHYSICAL DIMENSIONS: 4⅞ in. wide, 3 in. high, 2¼ in. deep. WEIGHT: 18 oz.

The diminutive Leica CL, the first Leitz camera produced in Japan (by Minolta), has finally acquired a genuine retail price, and thankfully it's $72 less than last year's educated estimate. Optically the CL is a full-fledged member of the Leica M system, and despite its small size and short base rangefinder, it accepts most of the many lenses designed for larger M-series Leicas.

Like its big sister, the M5, the CL incorporates shutter speeds from ½ to 1/1000 sec. plus B, auto-parallax-compensated projected viewfinder frames, an M-series bayonet mount, and a limited area meter cell located on a semaphore which pops into place centrally, just in front of the shutter, as you wind the film.

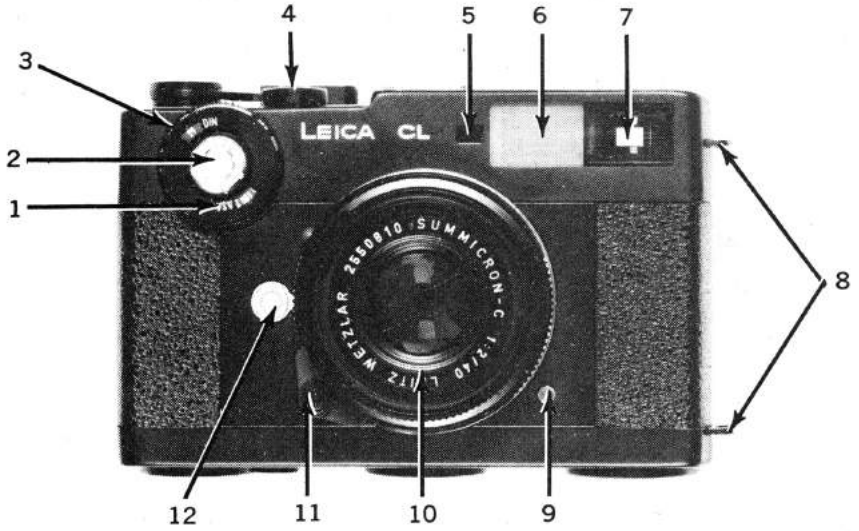
Surprise number one is the CL's shutter, Leitz' first vertical focal-plane design. This unique shutter fires downward from the top mechanically, and runs on horizontally placed shafts with plain bearings on both ends. It is best described as a simplified, non-modular, Leica-type shutter turned on its side. Advantages: extreme compactness and well-proven basic design. Potential disadvantages: extra precision required in assembly and possible difficulty in subsequent readjustment.

How well did the shutter work in practice? Superbly, varying less than 20 percent from marked values at all speeds. While shutter noise was higher-pitched and sharper than Leicas M4 or M5 at the same speeds, it was much quieter than SLR's. The CL's smooth, light shutter release is on a par with previous M Leicas and its smaller collar is as comfortable.

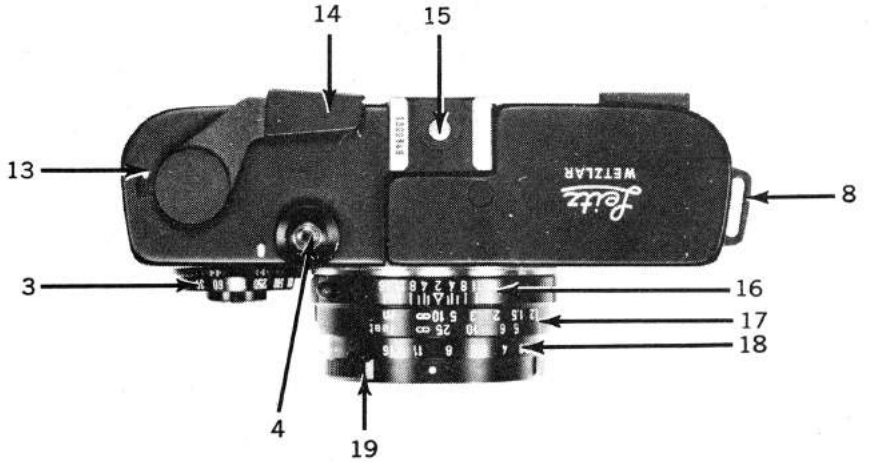
The second major surprise for traditional Leicaphiles is found in the CL's range-viewfinder. Measuring the rangefinder base length, we find it's exactly 31.6mm, the shortest on any recent Leica. What's more, the CL's finder magnification is only .55X. Nevertheless, the CL's rangefinder will accurately focus the majority of M-series bayonet-mount lenses even at maximum aperture. In the Leitz tradition, all projected finder frames are very clear, very precise, and visible even in dim light.

There are lots of good things to say about the CL's metering system, too. Owners of match-needle SLR's can meter in the accustomed manner. The meter is also a true limited-area type, reading a central 7 percent of the picture area regardless of the lens fitted. Furthermore, it is exquisitely sensitive and accurate, able to read within one-quarter of an f/stop of absolute accuracy under all possible metering conditions with the 40mm lens, and within two-thirds of a stop with the 90mm lens, according to our extensive tests. Low-light fans haven't been neglected either—the CL gets down to f/2 at ¼ sec. with ASA 400 film.

With its superb array of optics and excellent handling, the Leica CL should appeal to anyone lucky enough to own a bunch of M-series Leica lenses. It also effectively answers the criticisms of some who complained that the M-5 had grown too large. Since it's finished in the manner we've come to expect from Leitz and costs only about half as much as the M-5, it also represents an excellent value.



1. Film-speed index. **2.** Film-speed setting wheel. **3.** Shutter-speed dial. **4.** Shutter release. **5.** Rangefinder window. **6.** Frame illumination window. **7.** Viewfinder. **8.** Neck-strap lugs. **9.** Battery-check button. **10.** Lens. **11.** Focusing tab. **12.** Lens release lock. **13.** Exposure counter. **14.** Film-advance lever. **15.** Hot flash shoe. **16.** Depth-of-field scale. **17.** Distance scale. **18.** Aperture scale. **19.** Aperture ring tab.



LEICA M5

TYPE: 35mm rangefinder camera.
LENS: 50mm f/1.4 Summilux or f/2 Summicron in interchangeable bayonet mount, stops to f/16, focusing to 3 ft. 4 in.
VIEWING: Combined range/viewfinder, parallax-correcting projected frames for 35mm, 50mm, 90mm and 135mm lenses.
SHUTTER: Focal-plane with speeds from ½ to 1/1000 sec., plus B, MX sync.
OTHER FEATURES: Through-lens CdS metering, ratchetted rapid-wind lever, rapid-rewind crank, auto-resetting frame counter, hot shoe.
PRICE: $1,320 with 50mm f/1.4 Summilux, $1,182 with 50mm f/2 Summicron.
MANUFACTURER: Ernst Leitz, GmbH, Wetzlar, West Germany.
IMPORTER: E. Leitz, Rockleigh Industrial Park, Rockleigh, N.J. 07647.
PHYSICAL DIMENSIONS: 6¼ in. wide, 3½ in. high, 3 in. deep. WEIGHT: 2 lb. 3 oz.

While the Leica CL fills the bill for photographers whose tastes run to compact rangefinders, the M5 carries on the tradition of Leitz's landmark "M" series. Though bulkier than the M4 due to the addition of a through-the-lens meter, the M5 retains the lens mount, rangefinder, shutter mechanism and viewfinder frame system of earlier M's. And unlike the "hands-across-the-sea" CL, the M5 is completely made in West Germany.

The built-in viewfinder/rangefinder works as in the M4, with a rangefinder base length of 68.5mm and a magnification factor of 0.72. Viewfinder frames for 35mm, 50mm, 90mm and 135mm focal lengths appear automatically when appropriate lenses are interchanged. Any frame can be selected manually to preview the area coverage of any of the focal lengths. The 135mm and 35mm frames appear together and the frameline selector lever functions also as a battery check switch. Deflection of the exposure meter needle to or past an indicator notch means a good battery.

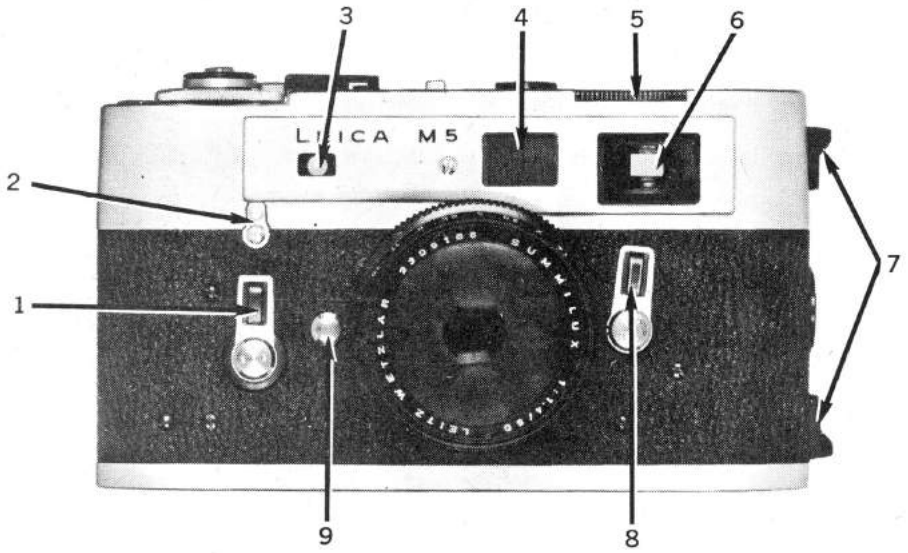
The exposure metering indications are in teh lower portion of the viewfinder frame and appear as two slanted lines. One, the shutter, is unvarying in angle; the other, the aperture, swings in an arc. Intersection of the two with an across-the-field horizontal line indicates correct exposure.

How much of the field is measured depends upon the focal length in use and ranges from 22.6° when a 28mm lens is inserted to 3.6° with a 135mm in place. With the normal 50mm lens, the measured field is 10.4°. Measuring is done by an 8mm diameter, double photo-resistor optically modified to compensate for the difference of 8mm between film plan and measuring cell. When a lens is in place and the shutter is cocked, the measuring cell lifts out of its storage well. Releasing the shutter drops it back out of the light path. Polarizing filters can be read directly through the lens without compensating adjustments.

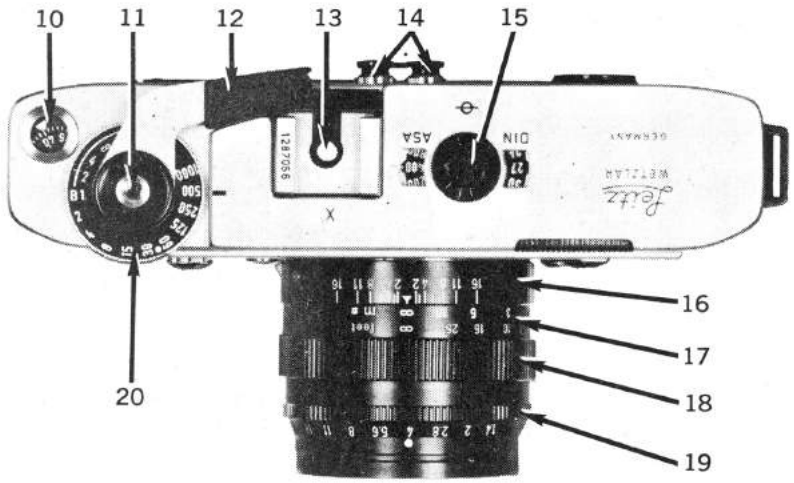
In addition to the clickstopped shutter speeds from 1/1000 sec. to ½ sec., there is a non-clicked range in the B mode for measuring times from 1 to 30 sec. Electronic flash sync is at 1/50 sec. and slower, indicated by a white dot. A hot shoe X sync accessory clip makes internally synced electronic multiflash a possibility by connecting one remote head to the X-PC terminal, with a second unit inserted in the hot shoe. Rewind lever is in the baseplate. Unfortunately, the rapid-load system will not accommodate the Leica cassettes. The film transport rapid-wind lever is the switch for the light metering system, but only when the film is advanced and the shutter is cocked does the cell pop into place.

The film-speed selector dial is easily set and the comfortably legible scales show both ASA and DIN film-speed values. Some caution is needed in using lenses with rear element-to-shutter distances less than 15mm because they will prevent the metering cell from swinging into its operating position. Some collapsible lenses must have safety collars attached.

In terms of metering sensitivity, rangefinder accuracy, and overall mechanical and optical performance, the Leica M5 attains levels few cameras can match.



1. Self-timer lever. **2.** Film-rewind advance selector. **3.** Rangefinder window. **4.** Illuminating window for viewfinder frames. **5.** Meter illuminator. **6.** Viewfinder window. **7.** Carrying strap lugs. **8.** Frameline selector lever. **9.** Interchangeable lens lock/release. **10.** Frame counter. **11.** Shutter release. **12.** Film-advance lever. **13.** Hot shoe sync accessory clip. **14.** Flash sync sockets. **15.** Film-speed selector dial. **16.** Depth-of-field scale. **17.** Distance scale. **18.** Focusing collar. **19.** Aperture selector. **20.** Shutter-speed dial.



BRONICA EC

TYPE: 2¼ x 2¼ single-lens reflex.
LENS: 75mm f/2.8 Nikkor-P in interchangeable bayonet mount, stops to f/22, focusing to 18 in.
SHUTTER: Electronically-timed cloth focal-plane with speeds from 4 to 1/1000 sec. plus B, FP, MX sync, X at 1/60 sec.
VIEWING: Interchangeable waist-level finder with full focusing screen, central fine spot, fine-focusing collar.
OTHER FEATURES: Electronically-coupled, through-lens CdS meter prism, quick-return diaphragm, instant-return mirror, depth-of-field preview button, interchangeable film back, provision for 12 or 24 exposure rolls.
PRICE: $1,236.50; meter prism, $329.50.
MANUFACTURER: Zenza Bronica Industries, Inc., Tokyo, Japan.
IMPORTER: Ehrenreich Photo-Optical Industries, Inc., Garden City, N.Y. 11530.
PHYSICAL DIMENSIONS: 5⅝ in. wide, 7⅜ in. high, 6½ in. deep (with meter finder).
WEIGHT: 5 lb. 6 oz.

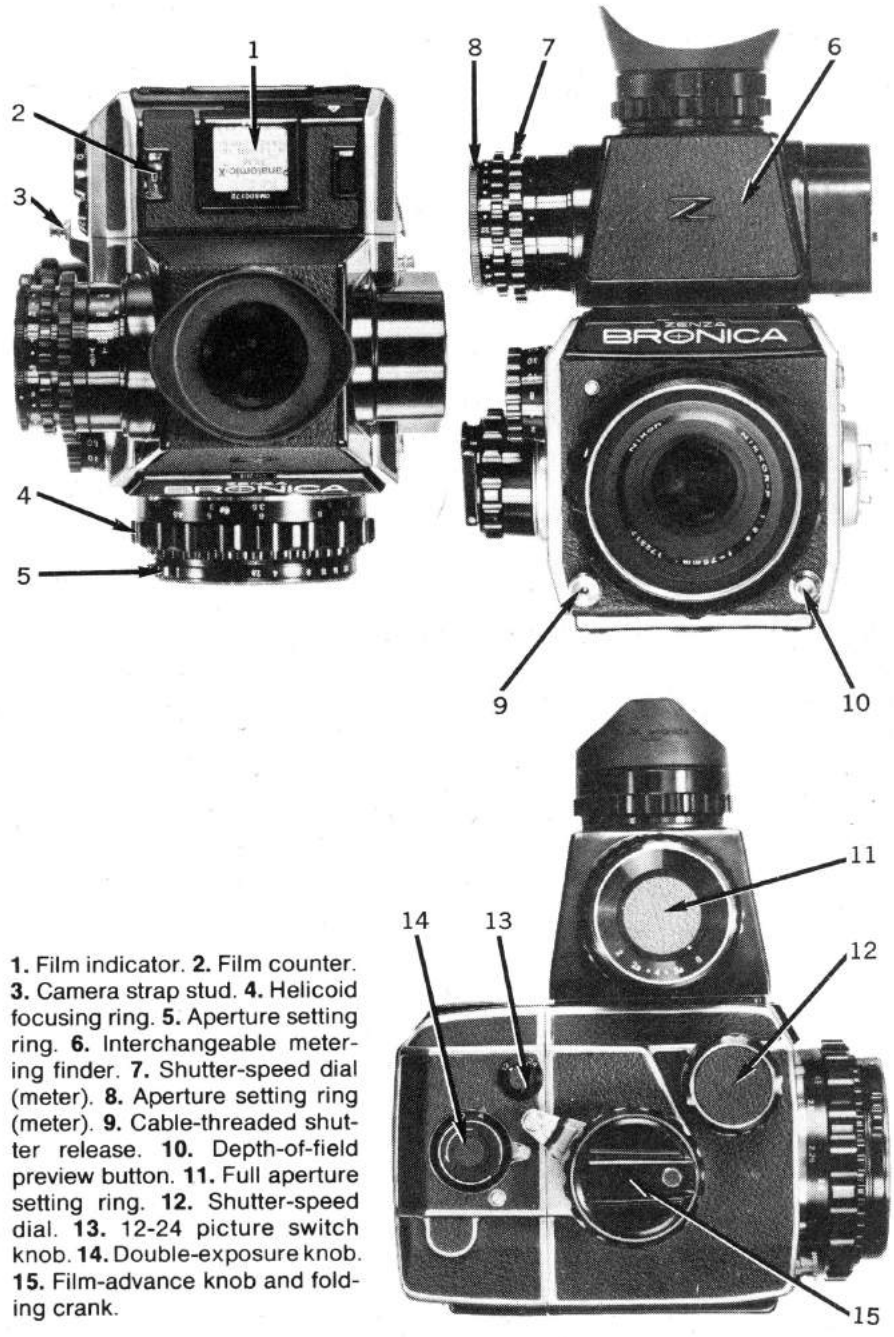
With the EC, Bronica has successfully adapted several advances in camera design to the 2¼-square format. It boasts an electronically-controlled shutter and an electronically-coupled meter finder. To incorporate these features, Bronica designed a completely new body, retaining only the removable bayonet mount, thereby permitting all but the earliest Bronica lenses to be used with the EC. Top accessories and magazines, however, are not interchangeable between the EC and other Bronicas. The EC is somewhat larger and heavier than the other currently available Bronica model, the all-mechanical S2A. Other differences include a larger, more efficient light trap in the film magazine, a magnifying hood with interchangeable eyepiece and automatically opening (and closing) sides, shutter speeds of 4 to 1/1000 sec. plus B and X sync at 1/60 sec., a two-piece instant-return mirror (most of which flips upward with a smaller section flipping down), and film winding in less than two turns of the crank.

Precise measurement indicates that the EC's shutter is remarkably accurate at all speeds, and apparent camera vibration has been somewhat reduced by splitting the instant-return mirror.

Metering is facile for a 2¼ SLR. Once you set the maximum aperture of the lens and the film speed and the selected shooting aperture on both lens and meter aperture rings, all you do to take a reading is grasp the meter prism's heavily-knurled shutter-speed ring and turn it until the needle in the finder is centered opposite a dot. This sets the correct shutter speed for the lighting conditions, automatically disconnecting the EC's manual shutter-speed dial. The system works quite similarly to match-needle 35mm SLR systems except for the fact that selecting the shutter speed first requires you to transfer the proper aperture reading from the meter scale to the lens itself. But by preselecting the shooting aperture and lining up the needle with the meter's shutter dial, you can obtain speeds in between the marked settings but not in between click halfstop detents.

The EC's meter prism incorporates no less than four separate CdS cells which appear to point toward the center of the field. Comprehensive tests indicate that they actually provide a full-area averaging measurement, however. Sensitivity is excellent, down to 1/15 sec. at f/2 with ASA 400 film, and readings in low, medium and high light levels reveal uniform metering accuracy within ½ stop. The meter's eyepiece adjusts over a huge ± 3 diopter range, but the meter scale seems to have a slightly different point of focus from that of the interchangeable focusing screen.

In addition to the major specifications, the Bronica EC incorporates a host of well-thought-out minor features. These include: a dark slide storage slot, separate battery checks for meter and shutter, a clever ball-bearing PC cord lock, provision for 120 or 220 film and intentional double exposures. Finish, fit and smooth operation of all controls reflect Bronica's high standards.



1. Film indicator. **2.** Film counter. **3.** Camera strap stud. **4.** Helicoid focusing ring. **5.** Aperture setting ring. **6.** Interchangeable metering finder. **7.** Shutter-speed dial (meter). **8.** Aperture setting ring (meter). **9.** Cable-threaded shutter release. **10.** Depth-of-field preview button. **11.** Full aperture setting ring. **12.** Shutter-speed dial. **13.** 12-24 picture switch knob. **14.** Double-exposure knob. **15.** Film-advance knob and folding crank.

BRONICA S2A

TYPE: 2¼ x 2¼ single-lens reflex.
LENS: 75mm f/2.8 Nikkor-P with interchangeable bayonet mount, stops to f/22, focusing to 18 in.
SHUTTER: Cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, FP, MX sync, X sync at 1/40 sec.
VIEWING: Interchangeable waist-level finder with full focusing screen, central fine-focusing spot.
OTHER FEATURES: Quick-return diaphragm, instant-return mirror, depth-of-field preview button, interchangeable film back, provision for 12 or 24 exposure rolls.

PRICE: $851.
MANUFACTURER: Zenza Bronica Industries, Inc., Tokyo, Japan.
IMPORTER: Ehrenreich Photo-Optical Industries, Inc., Garden City, N.Y. 11530.
PHYSICAL DIMENSIONS: 5⅜ in. wide, 4½ in. high (maximum), 6 5/16 in. deep (from front of lens to camera back). WEIGHT: 4 lb. 2 oz.

Although Bronica has gone electronic with the newer EC, the less expensive, entirely mechanical S2A is still very much a part of the line. Whereas the EC represents an entirely new design, the S2A is an evolutionary refinement of the original 2¼ Bronica SLR. The S2A differs from its immediate predecessor, the S2, primarily in the design of the gear mechanisms in the film transport and shutter wind. A careful strip-down and extensive field testing have verified that these mechanisms are now fully reliable under the demands of professional use. Since all lenses and lens accessories (but not body accessories) are interchangeable between the S2A and the EC, the two systems complement each other, and the S2A remains an excellent way to get into the Bronica system. Conversely, the S2A offers the EC owner a second, less expensive body.

Like earlier, less complicated Bronicas, the S2A retains the slide-down interior mirror (which permits lenses with less back focus such as the 50mm f/3.5 to be used), a lever and knob advance and shutter wind on the right side, and shutter speeds on the left side of the camera.

The interchangeable backs of the Bronica S2A are easily attached or removed but cannot accidentally fog the film in the magazine aperture. In order to take the back off, you must push the dark slide fully into the light trap.

The back permits you to change film inserts. This lets you preload extra film and reload the camera with some saving in time. On the other hand, you sacrifice much of the advantage of the interchangeable back which lets you change films in the middle of a roll, a benefit if you shoot b&w and color.

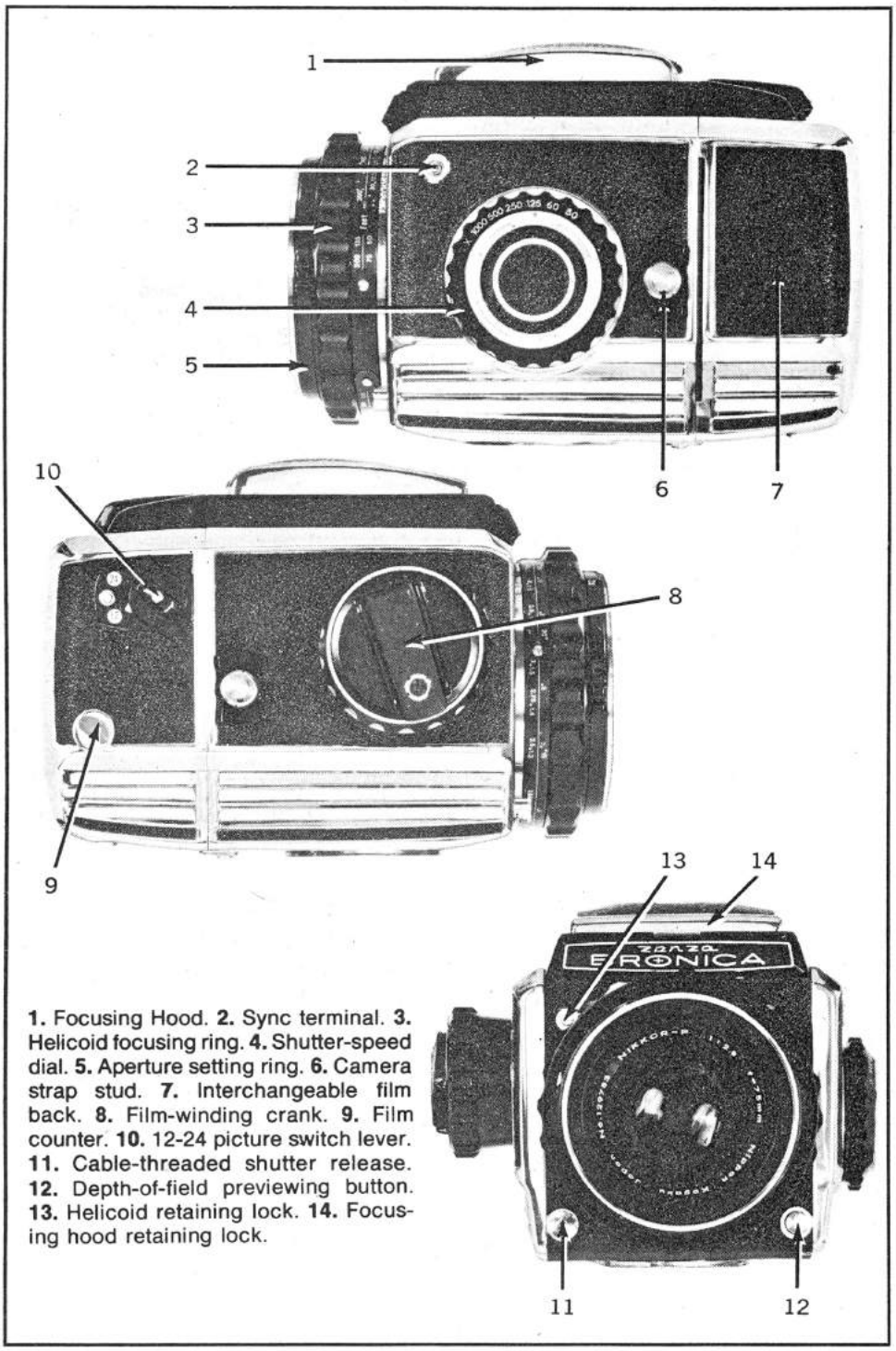
The Bronica S2A has provision for 24-exposure 220 roll film. On the right side of the camera, near the exposure counter, there's a small lever (10) which you flip from its usual 12 indication to the 24 marking when using the longer roll.

The Bronica focuses to a somewhat surprising 18 in. with the normal lens. The closest focusing distance of longer than normal lenses is more limited: slightly less than 6 ft. with a 135mm lens, and 12 ft. with the 200mm lens. However, the 50mm wide angle gets down to 12 in.

By pressing on a small button near the lens mount on the camera body (13) and twisting the helicoid focusing ring (3) 45° counterclockwise, you can remove the entire helical mount, revealing a really cavernous bayonet mount on the camera. This permits mounting large diameter lenses in focusing barrels, or the bellows, which focuses to 1:1 and has swings and tilts.

The helical mount itself is adequately smooth and excellently knurled with a focusing arc of 270°. The Bronica Nikkors bayonet off the helical mount when you press a large lever on each lens and twist 45° counterclockwise.

The focusing screens, magnifiers and optical systems of the S2A are similar to earlier Bronicas. Winding to the next frame still takes 4¼ turns, which can mean quite a bit of finger exercise.



1. Focusing Hood. **2.** Sync terminal. **3.** Helicoid focusing ring. **4.** Shutter-speed dial. **5.** Aperture setting ring. **6.** Camera strap stud. **7.** Interchangeable film back. **8.** Film-winding crank. **9.** Film counter. **10.** 12-24 picture switch lever. **11.** Cable-threaded shutter release. **12.** Depth-of-field previewing button. **13.** Helicoid retaining lock. **14.** Focusing hood retaining lock.

HASSELBLAD 500C/M

TYPE: 2¼ x 2¼ single-lens reflex.
LENS: Interchangeable bayonet 80mm f/2.8 Zeiss Planar with stops to f/22, focusing to 3 ft.
SHUTTER: Synchro-Compur between-lens with speeds from 1 to 1/500 sec. plus B, MX sync, self-timer, separate shutters built into each lens.
VIEWING: Interchangeable waist-level finder with full focusing screen.
OTHER FEATURES: Automatic diaphragm, 2¼ x 2¼, 2¼ x 1⅝, 1⅝ x 1⅝ in. format interchangeable roll-film backs, depth-of-field preview, accessory rapid-wind lever, interchangeable finders and viewing screens.
PRICE: $1,086.
MANUFACTURER: Victor Hasselblad, ag, Goteborg, Sweden.
IMPORTER: Paillard, Inc., 1900 Lower Rd., Linden, N.J.
PHYSICAL DIMENSIONS: 6½ in. deep, 4¼ in. high, 4¼ in. wide. WEIGHT: 3 lb. 3 oz.

There has been virtually no change in the past year in this originator of the interchangeable 2¼ SLR camera. When compared with the latest crop of competitive roll-film reflexes, the Hasselblad looks like a camera with few distinctive features, but the very simplicity of the classic Hasselblad shape is itself one of the 500 C/M's outstanding characteristics.

A range of 13 interchangeable lenses fitted with Synchro-Compur shutters, film backs for 120, 220, 70mm and Polaroid film packs, and a wide range of additional accessories all add to this camera's reputation as a standard among professional medium-format instruments.

Briefly, here's how the camera operates. You focus with the lens at full aperture. When you press the shutter release (10) the lens closes down to the predetermined opening, the shutter, which has been open, closes, the baffle protecting the film swings out of the way, the shutter opens and closes, and the baffle closes. When you wind the film to the next exposure, the shutter is recocked and opens for focusing.

The 500 C/M is designed to be a waist-level camera despite the gadgets available for it, such as eye-level prisms, external handle grips, and so-called quick-focusing handles. Shooting at waist level, controls are easy to see and use. Shutter speeds (1) and apertures (2) are situated on top of each lens and easy to see. The cross coupling of shutters and apertures can be uncoupled rather conveniently, unlike earlier shutter-aperture coupling systems.

If you have difficulty in focusing on a plain ground-glass screen (many eyeglass users do), you can change to the screen with microprism or split-image prism. But for those who can use this plain ground glass, its fine Fresnel focusing screen is a dream, especially with the longer than normal 80mm lens. To help you focus, they have placed a 2½X flip-down magnifier inside the excellent form-fitting focusing hood (5) which excludes excess sidelight.

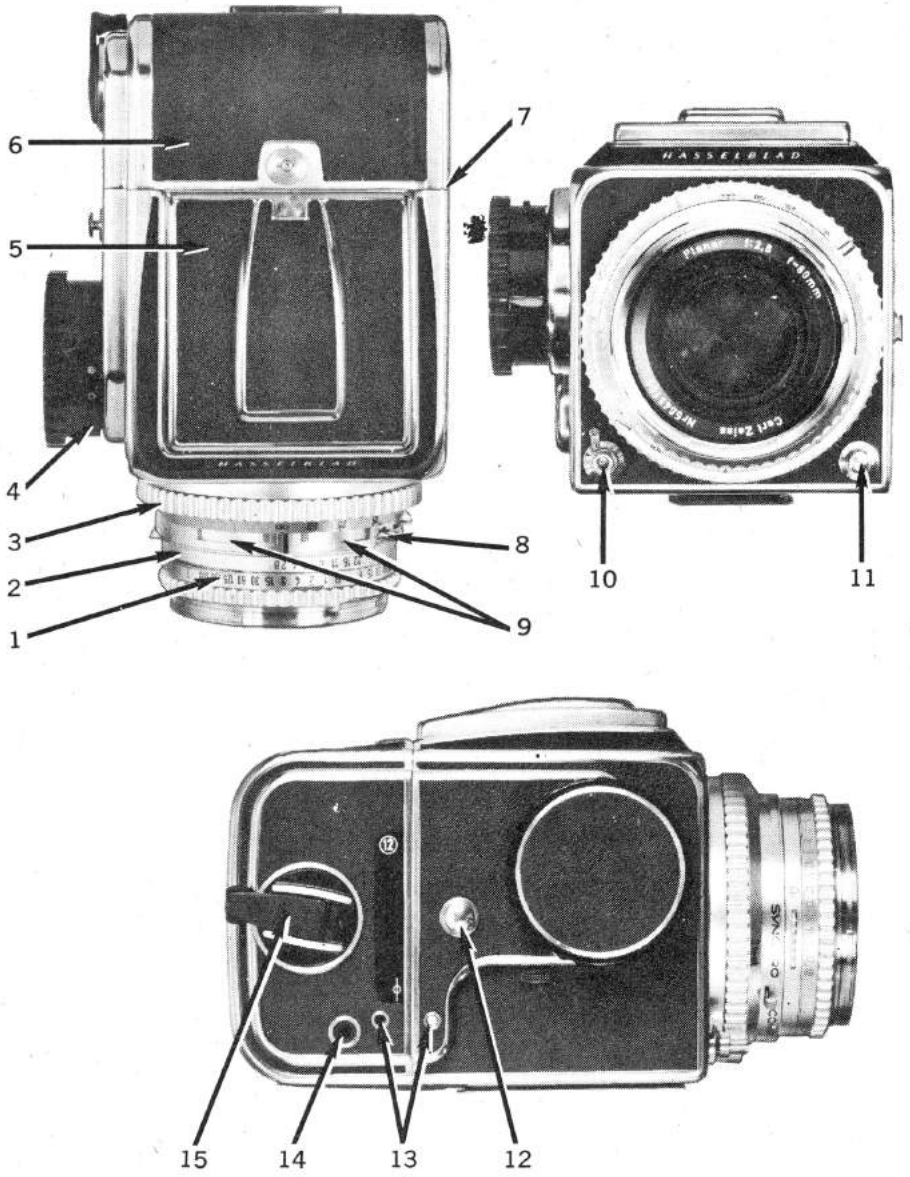
The Hasselblad can be used at eye level with its various eye-level prisms, sports-finders and pistol grips.

While we're on focusing, we should mention that the focusing rings (3) on the Zeiss lenses leave much to be desired in the way of a grippable surface. An accessory quick-focusing ring makes up for it, however.

The film-advance/shutter-cock knob (4) is removable. An accessory quick-wind crank makes it easy to complete the single turn it takes to transport the film and set the shutter. Cranking really isn't necessary unless you're a fast-action specialist.

Magazines (6) are simple to use. Loading film into one of them is easy. An important feature insures that with the slide (7) inserted in the magazine you cannot make an unintentional exposure, nor can you entirely remove the magazine from the camera if the slide is out. Because extra magazines cost $198 each, you may prefer to remove only the film chamber for loading.

In addition to the 500 C/M, there is the Superwide C ($1,341.50), the motorized 500EL/M ($1,411.50) and the newest Hasselblad 500EL-70 ($1,552 to $1,905).



1. Shutter-speed ring. **2.** Aperture ring. **3.** Focusing ring. **4.** Film-advance knob. **5.** Removable focusing hood. **6.** Interchangeable film magazine. **7.** Dark slide. **8.** Sync/self-timer selector and sync terminal. **9.** Depth-of-field scale. **10.** Shutter-release button. **11.** Lens lock release. **12.** Strap lug. **13.** Shutter/film-wind reminder windows. **14.** Frame counter. **15.** Magazine film-advance crank.

HONEYWELL PENTAX 6X7

TYPE: 2¼ x 2¾ (6 x 7 cm) eye-level single-lens reflex.
LENS: Interchangeable bayonet 105mm f/2.4 Super-Multi-Coated Takumar with stops to f/22, focusing to 3½ ft.
SHUTTER: Electronically controlled rubberized cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, provision for T, FPX sync.
VIEWING: Interchangeable eye-level pentaprism with microprism, fine-focusing collar, full focusing screen, dealer interchangeable screens.
OTHER FEATURES: Battery check, mirror reset button, provision for 120 and 220 film and accessory through-lens CdS metering prism, depth-of-field preview.
PRICE: $1,158.50.
MANUFACTURER: Asahi Optical Co., Ltd., Tokyo, Japan.
IMPORTER: Honeywell Photographic Prod. Div., 5501 S. Broadway, Littleton, Colo.
PHYSICAL DIMENSIONS: 7⅛ in. wide, 5⅞ in. high, 6⅜ in. deep. WEIGHT: 5 lb. 5 oz.

Despite the obvious advantages of a medium-format SLR designed to look, feel and handle like an overgrown 35mm SLR, the Pentax 6 x 7 has lacked one very important standard 35mm accessory—a through-lens meter finder. Well, Honeywell finally introduced their long-awaited meter finder in 1974. It couples with the shutter-speed dial (13) and indicates the light reading via a match-needle system. You select the shutter speed first and adjust the lens aperture to line up the needle in the finder. Amazingly, the meter prism is no bigger or heavier than a conventional prism.

Eye-level handling is undoubtedly the big Pentax's major strong point compared primarily to waist-level-operating 2¼ designs. For a camera this size, its balance can only be described as superb. It would be hard to improve the Pentax's ability when hand held in poor light conditions. The optical system delivers a life-size 1:1 viewing image. The Pentax's bright fine-lined Fresnel focusing screen with central microprism surrounded by a fine-focusing doughnut was equal to the task.

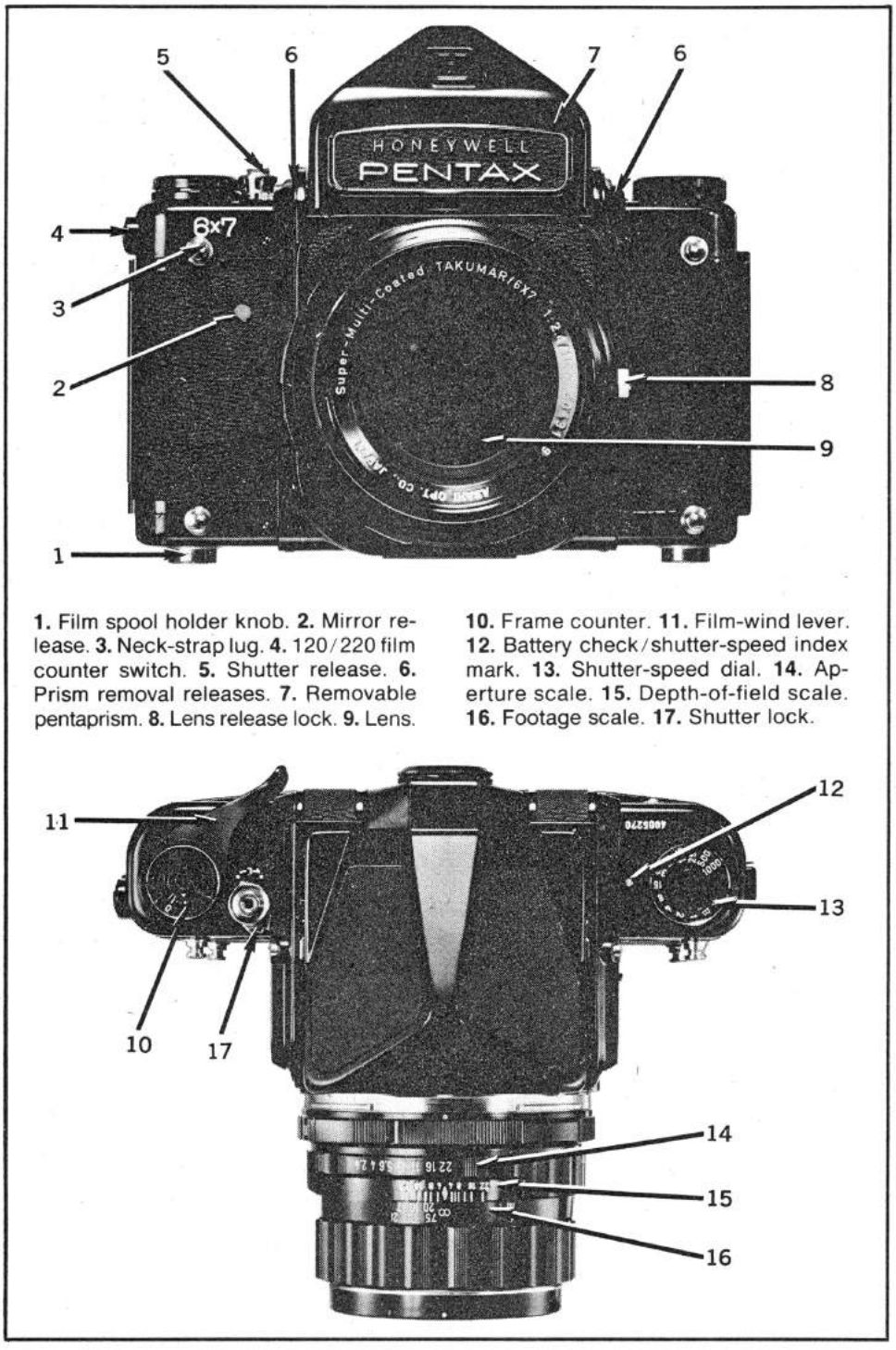
Do not expect the view through the prism finder to equal in brightness that of a 35mm SLR. It doesn't, but it's very usable and clear. We found the surrounding wide fine-focusing collar to be extremely efficient and easy to use—as was the entire outer picture area. Focusing ease was aided considerably by the smooth, quick action of the normal lens, which covers its entire focusing range in just over 180°. If you wear eyeglasses, you should be able to see almost the entire screen.

The 6 x 7's single-stroke advance lever is modeled in shape on the Spotmatic's. It operated smoothly, though with somewhat greater than normal pressure required, in just over 180°. The shutter release was well-placed and operated smoothly.

Though the Pentax has a large instant-return mirror, its action is well damped and the camera as a result is quite steady, unlike many 2¼ SLR's, which are virtually unusable, hand-held, below 1/125 sec. Shutter noise was at the obviously audible level, typical of most 2¼ SLR's. Resolution tests prove the Pentax's film plane flatness is superior to most others we've tested.

The Pentax 6 x 7 shutter is an electronically controlled, cloth focal-plane unit which gets its power from a rather rarish (so you'd better keep an extra one handy) Eveready 544 silver-oxide battery. This shutter proved exceptionally accurate over its entire range, even at 1/1000 sec., according to our Sigma Testing Unit.

To keep the size down, the Pentax engineers have opted for a pentaprism which covers only 85 percent of the picture area. Should you demand to see 100 percent of the image, you can always press the two little buttons on either side of the pentaprism, lift it out, and substitute a waist-level finder. All its 11 lenses, including the macro lens and telephoto lenses up to the 1000mm f/7 Reflex-Takumar, feature a 1/6-turn, internal, three-lug bayonet mounting and a beautiful black finish.



1. Film spool holder knob. **2.** Mirror release. **3.** Neck-strap lug. **4.** 120/220 film counter switch. **5.** Shutter release. **6.** Prism removal releases. **7.** Removable pentaprism. **8.** Lens release lock. **9.** Lens. **10.** Frame counter. **11.** Film-wind lever. **12.** Battery check/shutter-speed index mark. **13.** Shutter-speed dial. **14.** Aperture scale. **15.** Depth-of-field scale. **16.** Footage scale. **17.** Shutter lock.

KOWA SUPER 66

TYPE: 2¼ x 2¼ single-lens reflex.
LENS: 85mm f/2.8 Kowa in interchangeable breech-lock mount, stops to f/22, focusing to 2½ ft.
SHUTTER: Seiko TL between-lens with speeds from 1 to 1/500 sec. plus T, MX sync, self-timer, separate shutters built into each lens.
VIEWING: Interchangeable waist-level finder with fine-focusing center, full focusing Fresnel screen.
OTHER FEATURES: Automatic diaphragm, preview lever, 120-220 roll-film interchangeability, interchangeable focusing screens, multiple exposure, mirror lockup, interchangeable focusing hoods.
PRICE: $660.
MANUFACTURER: Kowa Co. Ltd., Nagoya, Japan.
IMPORTER: Berkey Marketing Companies, Inc., 25-20 Brooklyn-Queens Expressway West, Woodside, N.Y. 11377.
PHYSICAL DIMENSIONS: 5½ in. wide, 5 in. high, 6 5/16 in. deep. WEIGHT: 4 lb. 2 oz.

Kowa's long journey toward the upper reaches of the medium-format professional SLR world began in 1966 with the Kowa Six. What it lacked in features and quality it made up for with an attractive low price. But with the introduction of the MM model in 1973, the picture changed. This camera had ten lenses, from 19mm to 500mm, and many professional accessories that were almost comparable to Hasselblad's lens and accessory lines. But despite its high price and higher quality, it still had no internal film lock—an essential feature for today's top 2¼ SLR's. Kowa now offers this last technical requirement with the Super 66. Amazingly, the new model is priced lower than the former MM model.

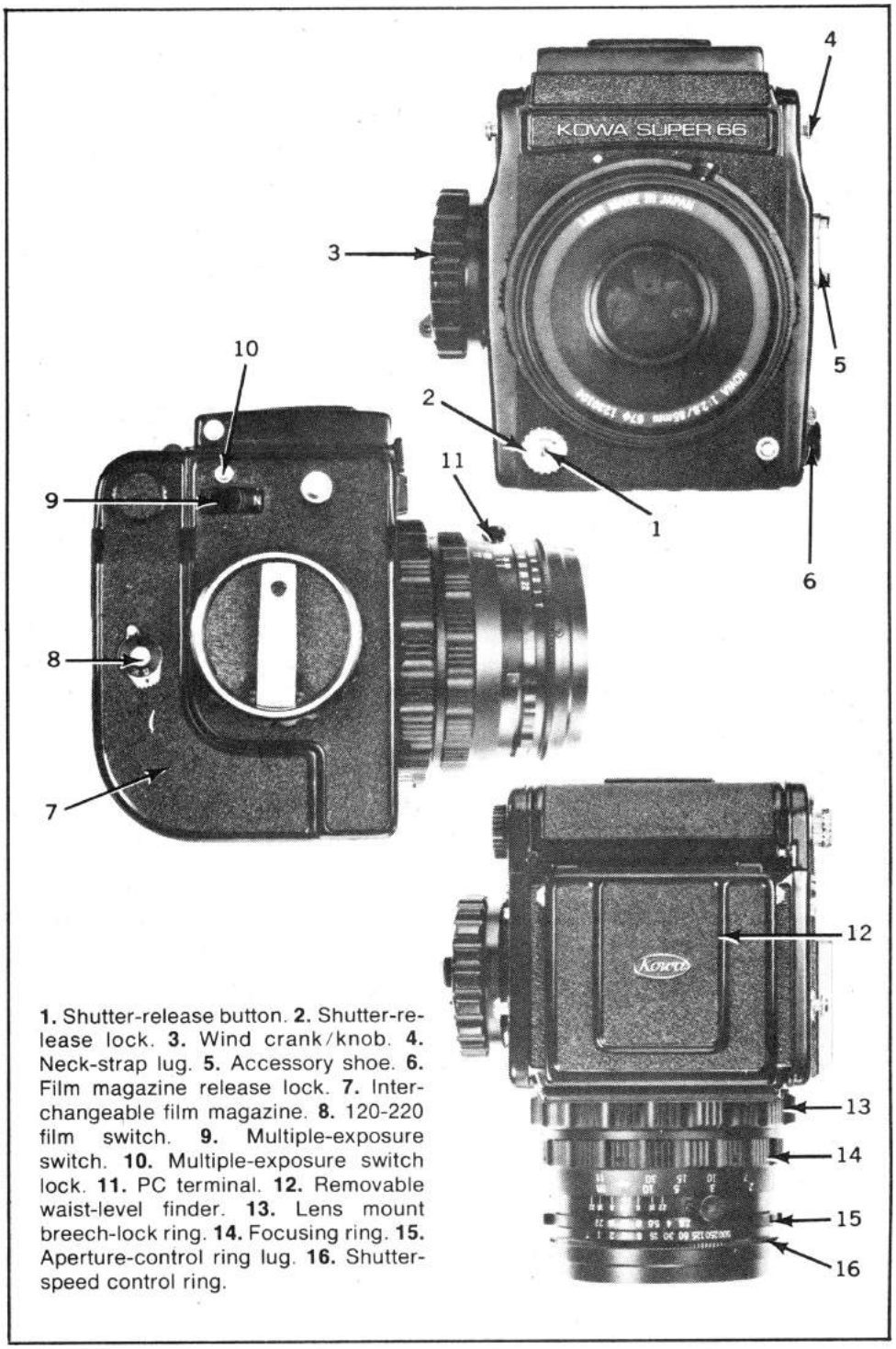
Let's take a look at the Super 66's features. It's unusually-shaped, interchangeable film back is unhooked from the camera body by a touch of a button (6). Since it doesn't have a dark slide (quite an ingenious solution to this problem), you must advance the film first to lower a light shield. In most 2¼ SLR's this shield is located right behind the mirror. By shifting its position, Kowa has eliminated the dark slide. The L-shaped film back, though small enough to fit easily in your camera bag, does present a problem: you cannot load it with film while the camera is on a tripod. Film loading itself is much easier than with the Hasselblad-type system. You just slip a roll in the bottom portion of the back, anchor it to the take-up spool and wind it up as with the Rollei twin-lens reflex. Double-exposure provision is now much easier than with the MM model. First, you push the lock button (10), then the multiple-exposure switch (9) forward. As long as the switch remains in this forward position, you can take as many exposures as you want on one frame. To return to normal shooting, push the lock button again and the switch automatically returns to its original mode.

In addition to the normal film back which accepts 120 and 220 rolls, there is another which gives you 1⅝ x 2¼-in., rectangular-format pictures—16 frames on 120, 32 on the longer 220 film roll.

One of the Kowa's more unique accessories is a 110mm f/5.6 macro lens which gives you a 1.2X life-size image when used with an extension tube. Without the tube, it goes down to 31 in. (1/5 life-size).

The general run of accessories available for this more professional instrument includes a range of six user-interchangeable focusing screens, critical magnifier and 45°-angled meter finders, extension tubes, adapters for photomicrography, eyepiece correction lenses, and the usual rapid-focusing handle familiar to Hasselblad users. Fortunately for prospective Kowa owners, the basic concept of a fast-handling, reasonably lightweight, modular, medium-format reflex camera hasn't been sacrificed to obtain this considerable increase in overall photographic versatility.

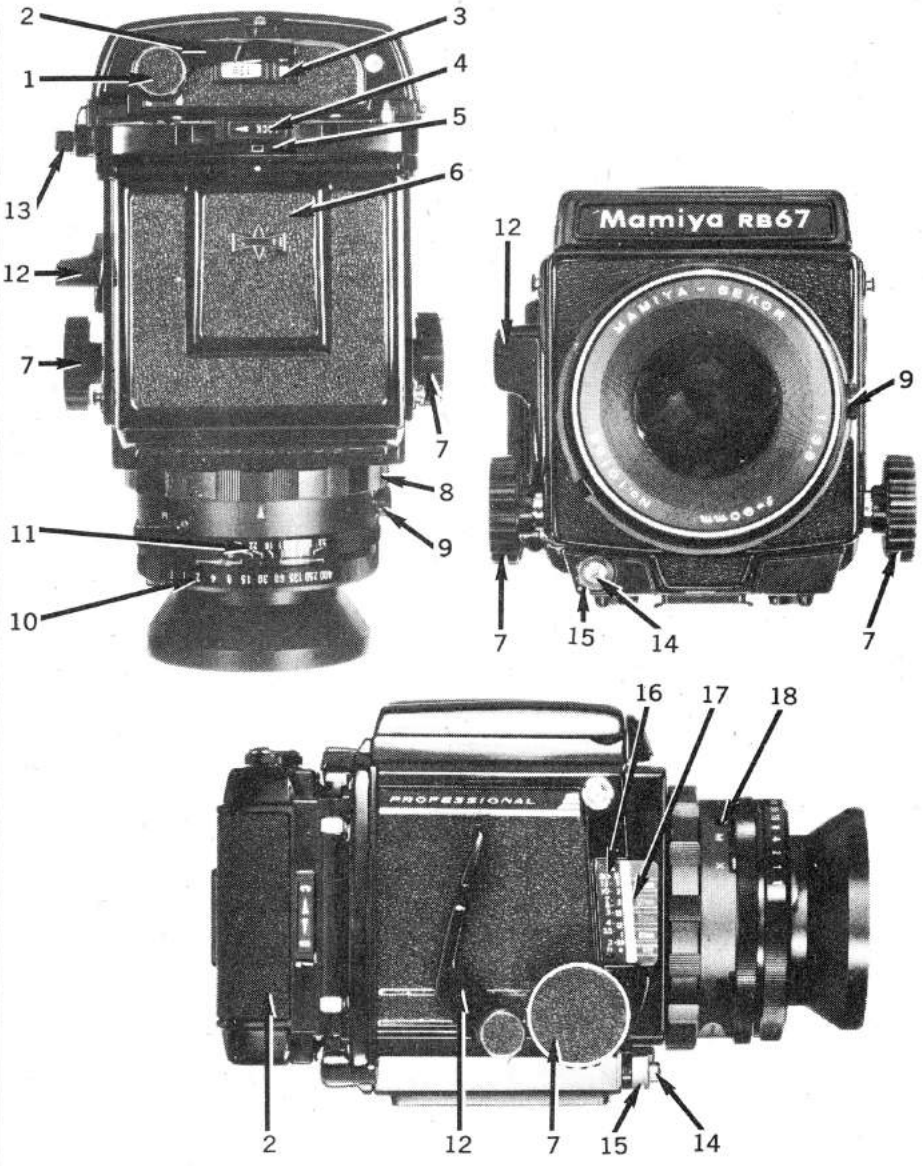
Nevertheless, the price of the Kowa Super 66 maintains its place as the "poor man's Hasselblad," despite its added features and better quality finish.



1. Shutter-release button. **2.** Shutter-release lock. **3.** Wind crank/knob. **4.** Neck-strap lug. **5.** Accessory shoe. **6.** Film magazine release lock. **7.** Interchangeable film magazine. **8.** 120-220 film switch. **9.** Multiple-exposure switch. **10.** Multiple-exposure switch lock. **11.** PC terminal. **12.** Removable waist-level finder. **13.** Lens mount breech-lock ring. **14.** Focusing ring. **15.** Aperture-control ring lug. **16.** Shutter-speed control ring.

MAMIYA RB67

TYPE: 2¼ x 2¾-in. single-lens reflex.
LENS: Interchangeable 90mm f/3.8 Mamiya/Sekor with stops to f/32 and focusing to 17 in.
SHUTTER: Seiko No. 1 between-the-lens leaf in each interchangeable lens, with speeds from 1 to 1/400 sec. plus T, MX sync.
VIEWING: Interchangeable waist-level finder with interchangeable focusing screens.
OTHER FEATURES: Automatic diaphragm, single-stroke film advance, depth-of-field scale and preview lever, revolving Graflok back accepts standard 2¼ x 3¼ Graphic film holders plus 120 and 220 Mamiya RB magazines, Polaroid pack and Mamiya Press roll-film magazines with special adapters.
PRICE: $756 with 90mm f/3.8 lens and 120 roll-film back.
MANUFACTURER: Mamiya Camera Co., Tokyo, Japan.
IMPORTER: Ehrenreich Photo Optical Industries, Inc., 623 Stewart Ave., Garden City, N.Y. 11533.
PHYSICAL DIMENSIONS: 8⅞ in. deep, 5½ in. high, 4¼ in. wide. WEIGHT: 5 lb. 15 oz.



1. Film-advance lever. **2.** Interchangeable film magazine. **3.** Frame counter. **4.** Magazine slide lock. **5.** Format indicator. **6.** Waist-level finder. **7.** Focusing knobs. **8.** Interchangeable breech-lock collar. **9.** Mirror-release operating knob. **10.** Shutter-speed ring. **11.** Aperture control. **12.** Shutter-cocking lever. **13.** Dark slide. **14.** Shutter release. **15.** Locking collar. **16.** Distance scale. **17.** Extension factor index. **18.** Sync contact and selector.

Take one look at the Mamiya RB67 and you immediately know it's at home primarily in the studio rather than in the field. Indeed, its weight alone places it in the tripod-mounted class. Once settled atop a tripod, however, the RB67's capabilities are limited only by the photographer's imagination.

The revolving back accepts five different film holders without adapters in addition to Polaroid and Mamiya Press holders with suitable adapters. Consequently, the RB67 can use filmpacks, sheet film, 120 and 220 roll film and Polaroid Land 107, 108 and 105 packs. Except with the Polaroid, you have the choice of horizontal or vertical format with 2¼ x 2¾-in. dimensions—almost perfectly enlargeable to 8 x 10 in.

The focusing hood can be replaced by a noncollapsible magnifying hood with an adjustable eyepiece. The glass focusing screen is also interchangeable. There are five screens available, plus through-lens meter heads and eye-level finders.

The focusing scale mounted above the right-hand focusing track indicates the bellows extension in millimeters as well as the focusing distance for seven separate lenses. With the 50mm lens you can get an almost life-size image without any attachments. The 90mm lens gives you about half life-size. The pattern guide on the focusing scale simplified exposure compensation for such close-ups.

Mamiya RB67's focusing screen shows a large, clear image that goes in and out of focus crisply. Because the RB67 has a revolving back, both the vertical (shown as solid lines) and horizontal (displayed in broken lines) image areas appear on the large square screen.

When you press the shutter release the screen blacks out as the non-instant-return mirror flips out of the light path. The noise is comparable to other 2¼ SLR's. The heavier camera is somewhat easier to hand hold at slower shutter speeds, though it is clearly designed as a studio camera that can challenge the smaller view cameras on their home grounds. Tests of the Seiko shutters showed them to be accurate with ¼ f/stop over most of their speed range and well within acceptable tolerances at the highest speeds.

Operation of the RB67 is straightforward. Loading is similar to most 2¼-in. roll-film cameras but differs because the center element of the magazine is removable for loading. After loading, this unit is replaced in the shell. This camera does not incorporate a double-exposure prevention mechanism. You must, therefore, advance the film before clicking the shutter.

A new model with built-in double-exposure prevention will be introduced in the very near future. We have to expect, though, that this new model may be priced much higher than the conventional RB67. This new Pro S model will also have horizontal-vertical frame lines which operate automatically as you revolve the back.

ROLLEIFLEX SL66

TYPE: 2¼ x 2¼ single-lens reflex.
LENS: 80mm f/2.8 Zeiss Planar with interchangeable lens mount, stops to f/22, focusing to 6½ in.
SHUTTER: Cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, X, FP sync.
VIEWING: Interchangeable waist-level finder with full focusing screen, central microprism grid.
OTHER FEATURES: Quick-return diaphragm, instant-return mirror, depth-of-field preview button, interchangeable film back, provision for 12 or 24-exposure rolls, tilting movement for depth-of-field control, double bayonet, end of film reminder.
PRICE: $1,290.
MANUFACTURER: Rollei-Werke Franke & Heidecke, Braunschweig, West Germany.
IMPORTER: Rollei of America, Inc., 100 Lehigh Dr., Fairfield, N.J. 07006.
PHYSICAL DIMENSIONS: 5⅞ in. wide, 4¼ in. high, 6¾ in. deep. WEIGHT: 4 lb. 6 oz.

The SL66 is Rollei's contribution to the professional 2¼ SLR sweepstakes. It's a large, sophisticated system camera with several unique and controversial features.

The system consists of a boxy body with interchangeable lenses, interchangeable finders and interchangeable magazines. The shutter is a fabric focal plane which the manufacturer feels is justified on the basis of greater versatility, lower prices for lenses and simplicity of construction.

Internally, the mirror differs from conventional SLR's. It is a swinging, movable axis design which in effect is a retractable instant-return mirror. You can release the mirror separately by means of a catch on the side of the camera, but it returns to the viewing position only after shutter release.

Focusing is extremely accurate and uses a brilliant micro-Fresnel with a 16mm diameter central microprism and a built-in flip-down 3½X magnifier. The screen frame lifts out to change screens and the molded plastic screen itself can be replaced in its frame in the event of damage. The focusing hood is, as expected, interchangeable.

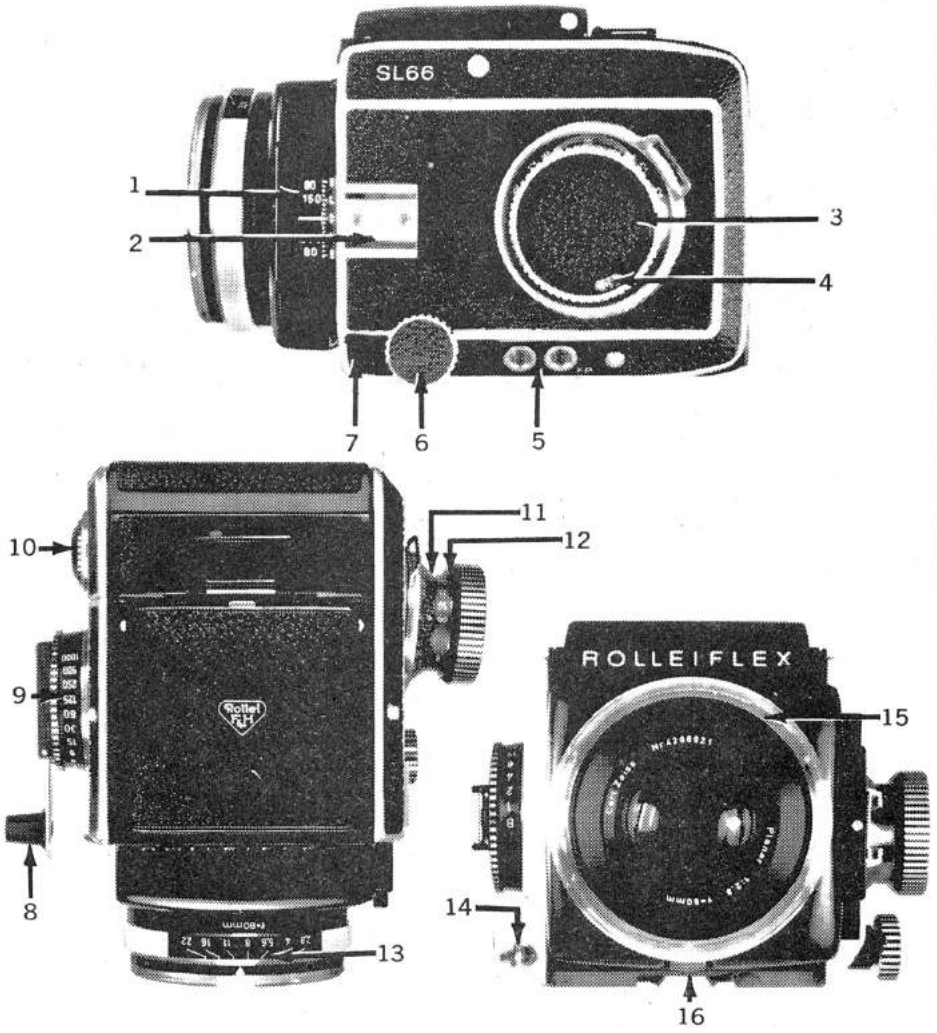
There is a complete range of lenses, from the 50mm f/4 Distagon to the 1000mm f/8 Tele-Tessar, to supplement the standard 80mm f/2.8 Planar. All lenses from 50mm to 250mm have automatic aperture coupling by an internal linkage that engages a member on the lens mount. The lens is fully open to focus, stops to your preselected aperture, and then opens again when the mirror returns to the viewing position. In the higher tele class, Rollei has a new 1000mm which has a manually operated diaphragm, as does the 500mm. The 1000mm lens stops all the way down to f/64, while the 500mm f/5.6 stops down to a useful f/45.

In response to the needs of studio photographers, two lenses (the 150mm f/4 Sonnar and 80mm f/4 Distagon) are mounted with their own five-speed (1/30-1/500 sec.), full-flash sync Compur shutters. The wide-angle-formula Distagon also allows full use of the camera's lens-tilting arrangement, permitting limited but useful control of depth of field.

The built-in bellows affords a remarkable degree of lens extension and this can be increased further by reverse mounting of the lenses from 50mm to 120mm; longer focal lengths can be reverse mounted but there is no practical advantage for focal lengths longer than the 120mm S-Planar, which is particularly recommended for close-up work. Luminar lenses from 16 to 63mm extend the close-up capability to a magnification of 11X.

One of the most unusual features of the SL66 is sure to be one of the liveliest sources of argument. You can tilt the lens axis up or down through 8° and set this on a scale at the side of the bellows by means of a plastic template. This degree of control is of little use for perspective control but can, under certain circumstances, offer depth-of-field adjustment.

Most controls are well-placed and convenient to latch onto for relatively quick shooting. Shutter speeds, depth-of-field scale, etc., are clearly etched, and the camera is generally very well finished.



1. Tilt control panel. **2.** Accessory shoe. **3.** Focusing knob. **4.** Film-speed reminder dial. **5.** Sync contacts. **6.** Tilt control locking knob. **7.** Tilt control lever. **8.** Film-advance/shutter-cocking crank. **9.** Shutter-speed selector dial. **10.** Film winding knob, end-of-film reminder. **11.** Depth-of-field scale. **12.** Distance scale. **13.** Aperture selector ring. **14.** Shutter release and lock. **15.** Double bayonet mounting rim. **16.** Lens release and lock.

MAMIYA C330

TYPE: 2¼ x 2¼ interch. twin-lens reflex.
LENS: 80mm f/2.8 stops to f/32, focusing to 7 in.
SHUTTER: Seikosha-S between-lens, with speeds from 1 to 1/500 sec. plus B and MX sync.
VIEWING: Waist-level with full focusing screen, eye-level sports-type viewing.
OTHER FEATURES: Combined film-advance and shutter-cocking crank, intentional double exposures, automatic resetting frame counter, interchangeable finders and screens, semi-automatic film loading, knurled focusing knob, 120-220 back, auto parallax-compensation selector.
PRICE: With 80mm f/2.8 lens, $488. Body only, $331.
MANUFACTURER: Mamiya Camera co., Tokyo, Japan.
IMPORTER: Ehrenreich Photo-Optical Industries, Inc., 623 Stewart Ave., Garden City, N.Y. 11530.
PHYSICAL DIMENSIONS: 4⅞ in. wide, 6¾ in. high, 4⅝ in. deep. WEIGHT: 3 lb. 13½ oz.

The Mamiya C330 is a camera in a class by itself. It all started with the basic idea of transforming the venerable twin-lens reflex into an interchangeable lens camera, and Mamiya has developed this basic concept almost to its limits. So, what began as a sound but primitive idea has evolved into an almost completely foolproof automatic mechanism (except for the exposure system) capable of satisfying professionals as well as highly sophisticated amateurs.

Fortunately, the C330 is not only unique but also extraordinarily rugged, providing a sturdy base which accepts a wide variety of accessories. Its long bellows allows you to use compact telephoto lenses and permits focusing in the near macro range with the 80mm normal lens. Parallax and exposure-compensation indicators are provided in the finders.

There's even a choice of shutter releases—one on the right side (17) where it's always been, and one at the front of the base (9). Should you purchase the accessory pistol grip, there's also the option of a trigger release.

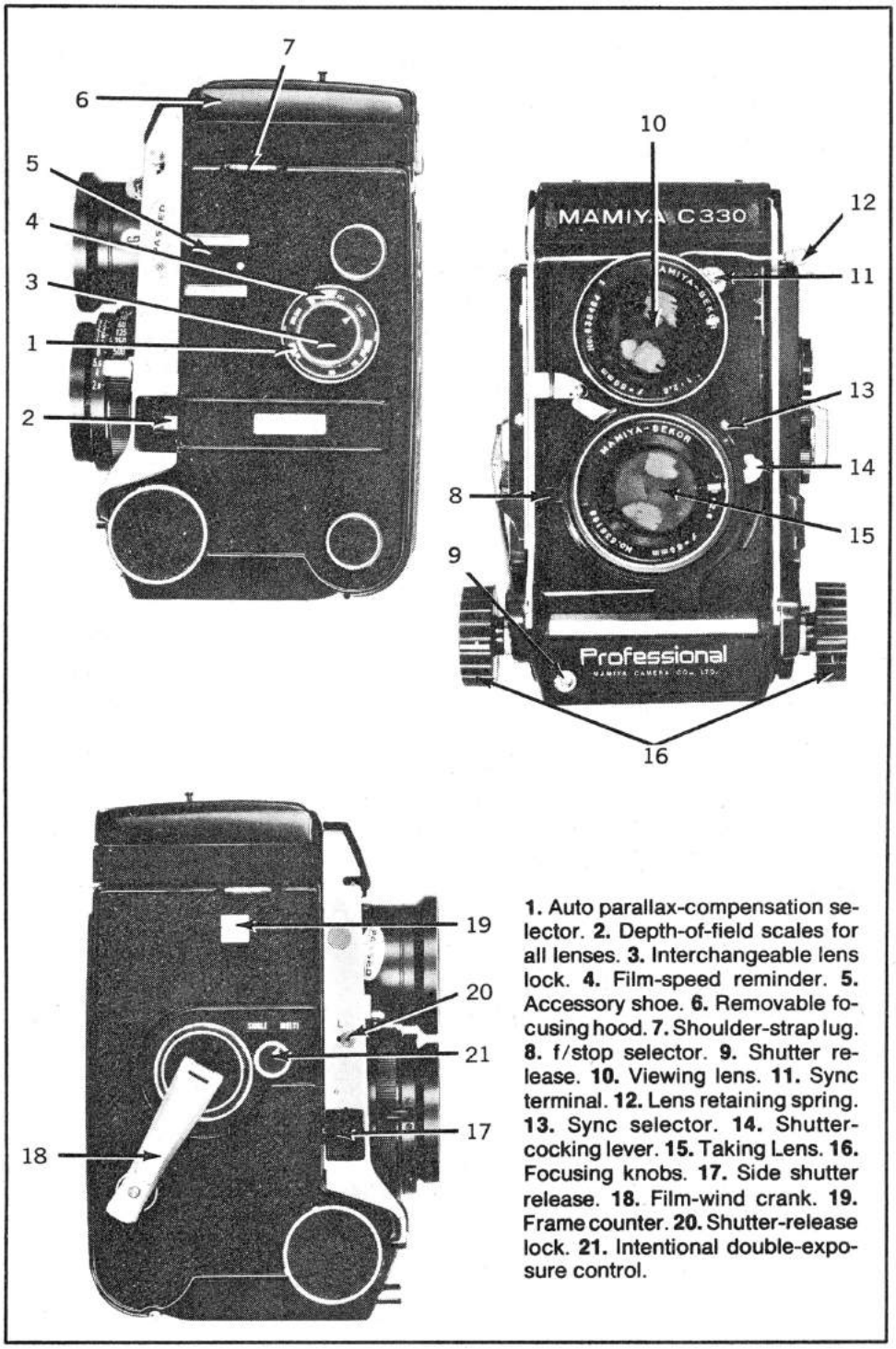
The film-advance crank (18) geared into the lens' shutter-cocking mechanism (14) requires only one forward stroke. There's no back swing as with the C33. When you turn the crank you activate a coupling that depresses the shutter-cocking lever. While double exposure prevention is thus built into the camera, you can bypass it if you choose. You turn a tiny dial (21) on the right side of the camera from the roll-film setting to the sheet or multi-exposure setting. You can then cock the shutter manually.

The automatic parallax compensation and effective aperture indicator work for all lenses except the 65mm wide-angle. To set the camera for automatic parallax indication you set a small dial (1) on the left side of the camera to the focal length you wish to use. As you rack out the bellows, an in.-long horizontal indicator needle appears at the top of the viewing screen. Anything above the needle is out of the picture area. All you need do to prevent chopping off a head, or omitting an important area, is raise the camera until the top of the subject you wish to include is under the indicator after you focus. The indicator also points to a scale of exposure increase factors on the left side of the ground glass.

As a further aid to easy calculations, the depth-of-field scale is now in the form of a hexagonal-shaped rod on the left of the camera covering all lenses from the 55mm f/4.5 to the 250mm f/6.3. Besides major additions such as the six interchangeable focusing screens, minor refinements are also in evidence. Lenses are now in black finish and a shutter-release lock has been added for extra safety.

The regular finder can be replaced by the Porrofinder, with or without CdS metering, or a prism finder, giving you as much as 2.5X more magnification. The great asset, of course, is unreversed eye-level viewing with this finder.

The C330 accepts 220 roll film with a turn of the pressure plate. It also accepts sheet film via an accessory holder.



1. Auto parallax-compensation selector. **2.** Depth-of-field scales for all lenses. **3.** Interchangeable lens lock. **4.** Film-speed reminder. **5.** Accessory shoe. **6.** Removable focusing hood. **7.** Shoulder-strap lug. **8.** f/stop selector. **9.** Shutter release. **10.** Viewing lens. **11.** Sync terminal. **12.** Lens retaining spring. **13.** Sync selector. **14.** Shutter-cocking lever. **15.** Taking Lens. **16.** Focusing knobs. **17.** Side shutter release. **18.** Film-wind crank. **19.** Frame counter. **20.** Shutter-release lock. **21.** Intentional double-exposure control.

ROLLEIFLEX 2.8 F/120-220

TYPE: 2¼ x 2¼ twin-lens reflex.
LENSES: 80mm f/2.9 Xenotar taking, 80mm f/2.8 Heidosmat viewing, stops to f/22, focusing to 3 ft.
SHUTTER: Synchro-Compur between-lens with speeds from 1 to 1/500 sec. plus B, MX sync, self-timer.
VIEWING: Waist-level with Rolleiclear focusing screen, central microprism, auto parallax compensation and eye-level sportsfinder.
OTHER FEATURES: Combined shutter-cock film-advance crank, automatic film loading and frame counter, double exposure prevention with provision for intentional double exposures, adjustable pressure plate for 35mm film (with adapter), built-in exposure meter (E.I. 12 to 1600) coupled to lens aperture wheel, filter factor compensation adjustment, accepts 120 or 220 roll film.
PRICE: $765.
MANUFACTURER: Rollei-Werke Franke & Heidecke, Braunschweig, West Germany.
IMPORTER: Rollei of America, Inc., 100 Lehigh Dr., Fairfield, N.J. 07006.
PHYSICAL DIMENSIONS: 4 5/16 in. wide, 5¾ in. high, 4⅛ in. deep. WEIGHT: 2 lb. 13 oz.

The great standby among 2¼ x 2¼ twin-lens reflexes has become something of a modern classic, not admired from afar but still in wide use for many applications. There's been no design change for a couple of years now, but we haven't heard any complaints.

The 120-220 model F has the familiar wheels for adjusting aperture (4) and speeds (2); it has the automatic film advance system made famous by its predecessors, the fully-synchronized Compur shutter, and excellent capabilities as a hand camera. These properties are synonymous with "Rollei" and they're incorporated in the Rolleiflex 2.8F along with more recent features: a) a fine optical focusing screen which produces a sharp, bright image to the corners; b) removable focusing hood for easy masking; c) photoelectric exposure meter (3) manually coupled to the diaphragm mechanism. The 120-220 adds flick-of-a-switch convenience to change from the 120 to the longer 220 roll. And a central microprism simplifies accurate focusing. The 2.8F viewing screen is extremely sharp and bright from center to corners. Using the central microprism, with the accessory pentaprism of waist-level magnifying hood, adds a new dimension to Rollei operation.

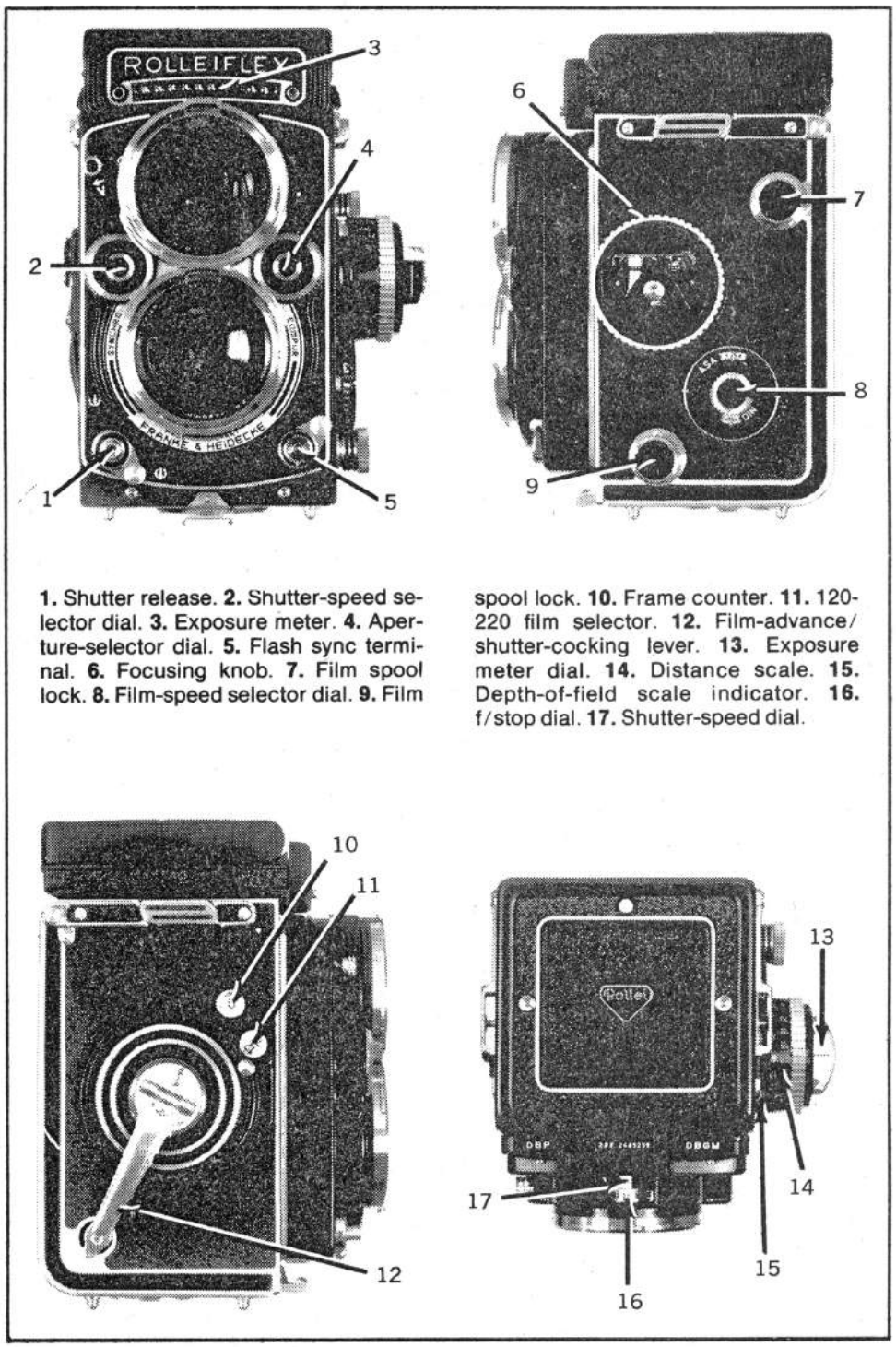
The built-in photoelectric exposure meter (3) may be used from the picture-taking position for making average reflected light readings, or incident readings with an accessory. We obtained the best results by making reflected readings close to our subject so as not to fool the meter.

The moving pointer (13) is lined up with the stationary one in the focus knob (6) by adjusting the camera's aperture wheel (4). Everything's set if you've already set the appropriate shutter speed (17) and also have set the exposure index of the film you're using on a dial (8) situated on the camera. Previous Rollei meters had high and low sensitivity positions. The one on the new Rollei has one position, yet is surprisingly sensitive. We found that it could read all the way down to 1/15 sec. at f/2.8 when used with 400 ASA film.

In addition to the Rolleiflex 2.8F/120-220, there is the Tele-Rollei which has a 135mm f/4 Carl Zeiss Sonnar taking lens and a 135mm f/4 Heidosmat viewing lens.

The Tele-Rollei comes with a central split-image rangefinder which is not as satisfactory as the central microprism of the 2.8F/120-220 Rollei. The screen can be replaced with one having the central microprism, however, depending on the personal preference of the user.

Because the Rollei is parallax-corrected, the use of the accessory 0.35 and 0.7 Rolleinars or the Rolleinar 1, 2, and 3 close-up supplementaries makes the Rolleis superior to the 2¼ single-lens reflexes for some photographic applications. The camera has also maintained its position as a fine press and general field camera.



1. Shutter release. **2.** Shutter-speed selector dial. **3.** Exposure meter. **4.** Aperture-selector dial. **5.** Flash sync terminal. **6.** Focusing knob. **7.** Film spool lock. **8.** Film-speed selector dial. **9.** Film spool lock. **10.** Frame counter. **11.** 120-220 film selector. **12.** Film-advance/shutter-cocking lever. **13.** Exposure meter dial. **14.** Distance scale. **15.** Depth-of-field scale indicator. **16.** f/stop dial. **17.** Shutter-speed dial.

YASHICA MAT-124G

TYPE: 2¼ x 2¼ twin-lens reflex.
LENSES: 80mm f/3.5 Yashinon taking and f/2.8 viewing, stops to f/32, focus to 3.3 ft.
SHUTTER: Copal-SV between-lens with speeds from 1 to 1/500 sec. plus B, MX sync, self-timer.
VIEWING: Waist-level with central fine-focusing spot, full focusing screen, auxiliary eye-level sportsfinder.
OTHER FEATURES: Combined shutter-cock/film-advance crank, semiautomatic film loading with auto frame counter, double-exposure prevention, built-in CdS exposure meter (E.I. 25 to 400) coupled to lens and shutter control wheels, accepts 120 or 220 roll film.
PRICE: $195.
MANUFACTURER: Yashica Co., Ltd., Tokyo, Japan.
IMPORTER: Yashica, Inc., 50-17 Queens Blvd., Woodside, N.Y. 11377.
PHYSICAL DIMENSIONS: 4 in. wide, 5¾ in. high, 4 in. deep. WEIGHT: 2 lb. 6½ oz.

The 2¼ x 2¼ twin-lens reflex is not yet ready for the archives. But while 120 film is alive and thriving in the SLR format—complete with interchangeable lenses, finders, etc.—fans of the big, fixed-lens TLR have been watching their world shrink slowly over the years. Of the few companies still producing these models, Yashica has adopted the trends rampant in other formats and brought some form of automation to the TLR. The latest and best of a long line of Yashica TLR's, the Mat-124G sports a match-needle, coupled-CdS-exposure-meter type of exposure control.

This meter first appeared on Yashica's Model 12 camera, was repeated on the Model 24 (for the long 220 rollfilm) and carried forward to the present 124, which incorporates both the 120 and 220 formats. Naturally, a few modifications were necessary to accommodate both film lengths and these modifications were in turn modified on the G model. Externally, the G is noted for its sleek black finish; internally, the big move has been a simplification of the 120-220 switching procedure.

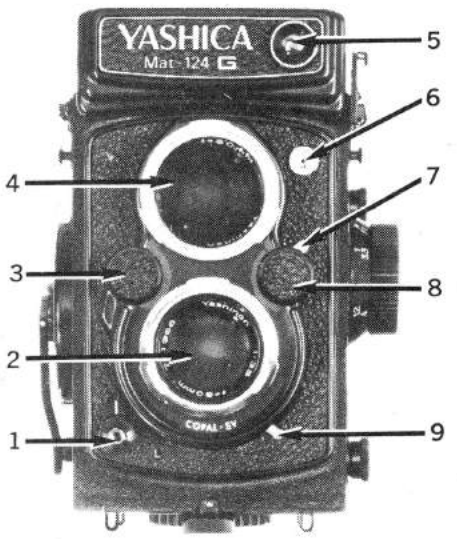
To change formats all you do is press and slide the film pressure plate about ¼ in. Through a cutout in the plate you see either "12 ex." in green or "24 ex." in red. Positioning the plate automatically sets the frame counter (20) and wind mechanism. The only time you may have trouble is in lining up the film. In loading, you wind the film until the arrow on the film's paper backing is aligned with a mark inside.

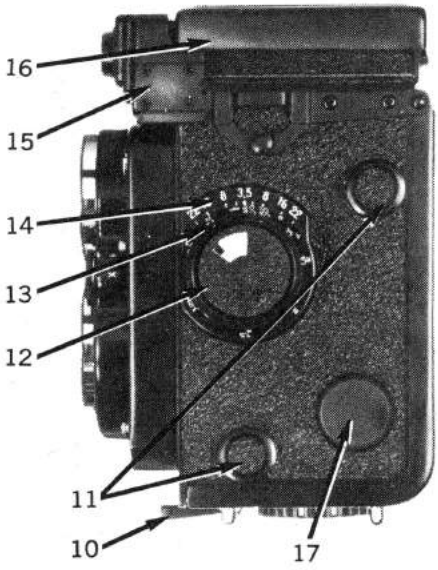
The 220 mark (red, following the color scheme) is in almost the same spot on the camera's back as the mark in most regular 120 cameras. But its 120 (green) mark is on the underside of the camera's inside, quite close to the film spool itself. Thus it comes up pretty fast when you are winding the film. You have to slow down your winding a bit and keep your eye on the bottom, not the back, in order to load 120.

Up on the nameplate, top front, is the telltale eye that reveals the CdS cell exposure meter (5). Such an exposure system means there's a battery, located in a small compartment (17) on the bottom left side, and a circuit that should be turned off when not in use to prevent drain on that battery. The Mat-124G prevents this drain very neatly. The circuit is on only when the hood (16) is raised to viewing position.

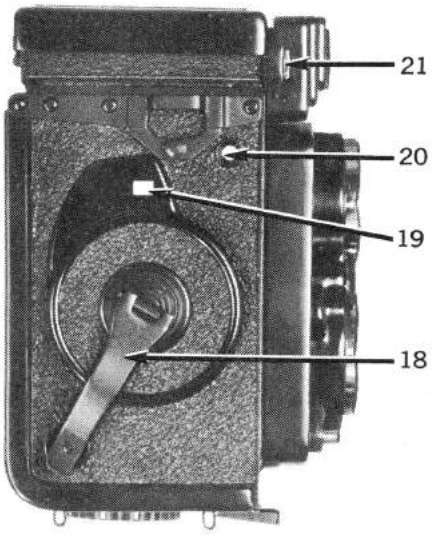
Along the top front are the meter controls. At the right end a small window (26) contains the ASA scale—from 25 to 400—which you set via a small knurled wheel on the side. Here you have to be a little careful not to move the wheel accidentally and dislodge your ASA setting. However, since you are always looking down at the pointer window (23) next to the ASA window (26), a periodic glance will tell you if the setting has been changed.

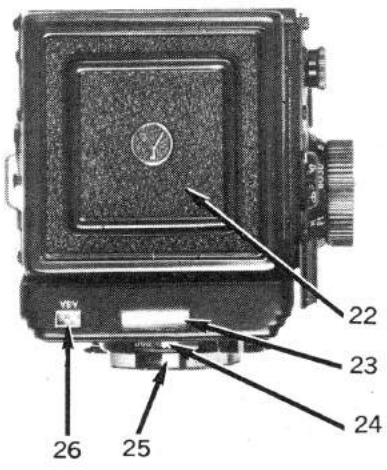
The longer window (23), smack in the middle, has a thin red pointer and a thickish green open-ended pointer; both are clearly visible against a copper-colored background. The shutter-speed setting wheel (3) on the right controls the red pointer, and the aperture wheel (8) controls the corresponding green pointer.





1. Shutter-release button. **2.** Taking lens. **3.** Shutter-speed selector wheel. **4.** Viewing lens. **5.** CdS cell window. **6.** Flash sync terminal. **7.** Flash sync selector. **8.** Aperture selector wheel. **9.** Self-timer. **10.** Back lock. **11.** Film spool holder knobs. **12.** Focusing knob. **13.** Footage scale. **14.** Depth-of-field scale. **15.** Accessory shoe. **16.** Focusing hood. **17.** Battery compartment. **18.** Film-advance/shutter-cock crank. **19.** 120-220 indicator. **20.** Frame counter. **21.** Film-speed setting wheel. **22.** Sportsfinder. **23.** Meter window. **24.** Aperture indicator. **25.** Shutter-speed indicator. **26.** Film-speed scale.





MAMIYA UNIVERSAL

TYPE: 2¼ x 3¼, 2½ x 3½, 6 x 9cm and 6 x 7cm cut film, film pack plate, Polaroid and roll-film camera.
LENSES: 100mm f/3.5, stops to f/32, focusing to 3½ ft.; 100mm f/2.8, stops to f/ 32, focusing to 3½ ft.
SHUTTER: Seikosha-S with speeds from 1 to 1/500 sec. plus B, MX sync.
VIEWING: Eye-level view-rangefinder with separate bright frame fields for 100, 150 and 250mm lenses.
OTHER FEATURES: Graflok back, 1 3/16-in. back extension, auto parallax adjustment for 100, 150, 250mm lenses, detachable hand grip, interchangeable roll-film, cut film, plate film, Polaroid back.
PRICE: With 100mm f/3.5 and Graflok back, $474.
MANUFACTURER: Mamiya Camera Co.
IMPORTER: Ehrenreich Photo-Optical Industries, Inc., 623 Stewart Ave., Garden City, N.Y. 11530.
PHYSICAL DIMENSIONS: With roll-film holder and grip—7 13/16 in. wide, 6⅞ in. high, 5⅜ in. deep (front of lens to camera back). WEIGHT: 3 lb. 15½ oz. (without pack adapter).

Mamiya Universal fans have never claimed that their favorite camera has the fastest operating mechanism in the small press field. Its real advantage lies in its supreme versatility in film-back interchangeability, a feature of particular importance to studio and commercial photographers.

It accepts a Polaroid back as well as four other sizes, including 2¼ x 3¼ and its various cousins. The Polaroid feature, besides being handy for general on-the-spot shots, may be especially appreciated by photographers who must often test the look of their lighting and contrast and who require immediate results.

Other features introduced into the 23, however, remain extant. Instead of the bayonet mount lock buttons to secure the lens—as on older models—the Universal (as with the 23) has a massive, knurled bayonet locking ring (12) around the entire lens mount. It locks lenses in place quickly and efficiently, accommodating the rather large, recently introduced 250mm f/5, which requires the extra support.

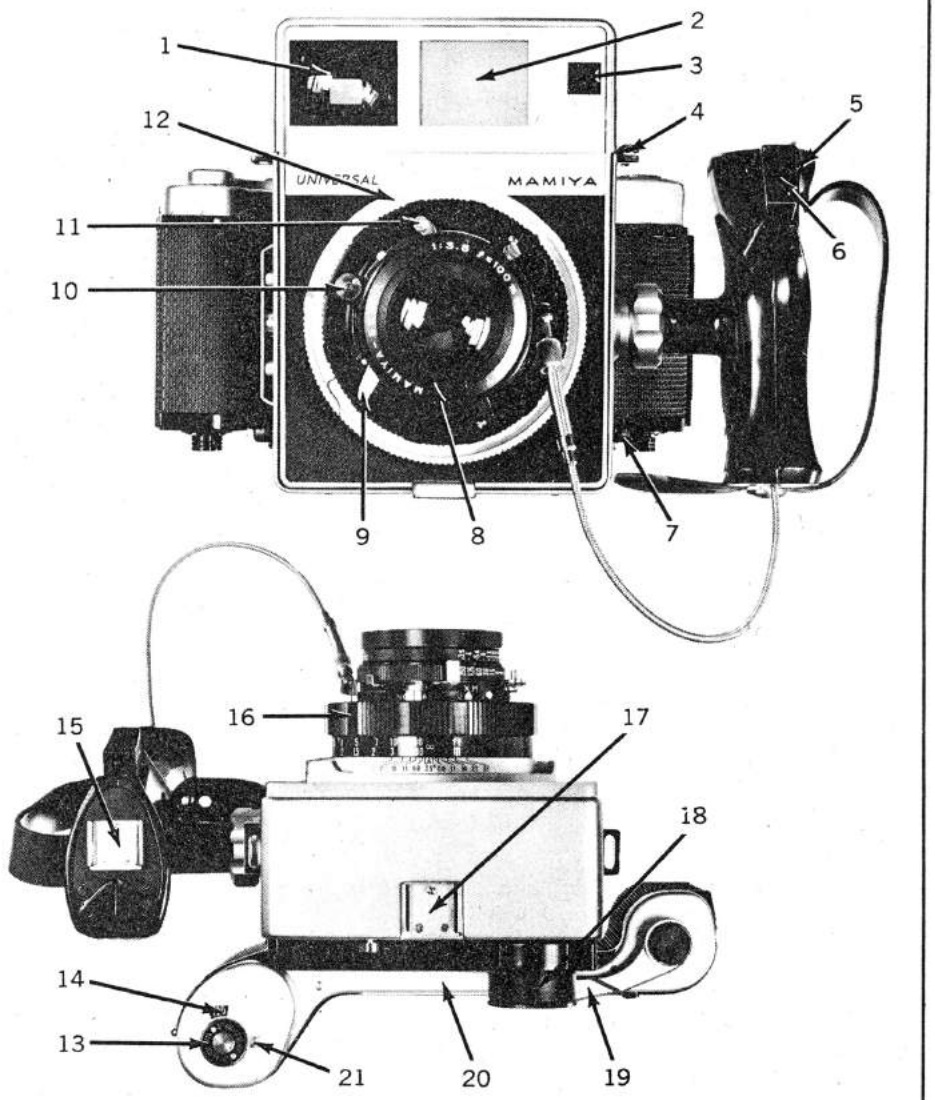
The eyepiece (18) is sufficiently large to afford comfortable viewing. The viewfinder, with its clearly etched markings for 100, 150 and 250mm lenses, is bright, with a good-sized dot in the center for double-image rangefinder focusing. Changing viewing angles is simply a matter of pushing a slide at the rear of the camera, and the focal length frame you want shows in a tiny window at the back of the camera and is also projected in the finder. In addition, the finder has auto parallax compensation, which is critical for close work.

The standard lens for the Universal (as with the Super 23) is a 100mm f/3.5 or f/2.8, as against the 90mm f/3.5 for older machines such as the Deluxe or Standard. The newest in the line, however, is the 50mm f/6.3. This complements the existing 65mm f/6.3, 75mm f/5.6, 127mm f/4.7, 150mm f/5.6 and 250mm f/5.

The latter, by the way, cannot be used on the Standard or Deluxe. While it's physically possible to mount the lens, there's some doubt that the camera mount is strong enough to take the weight. In addition, there are no finder masks available for the 250mm lens, which the older cameras required to change viewing angles.

Canted at a slight angle, the hand grip (5) is about as comfortable as a side-mounted grip can get. The grip, fitted with an accessory shoe (15), can be easily removed when not needed, by unscrewing a notched locking ring and pulling straight out. The trigger (6) for the cable release falls quite conveniently under the index finger of the left hand. You can also release the shutter with lever (9) on the lens.

Typical of press-type cameras, there's no double-exposure prevention, since film advance (19)—on the roll-film holder—and shutter cocking (11) are independent actions. Those who are multiple-exposure fans will consider this feature a plus.

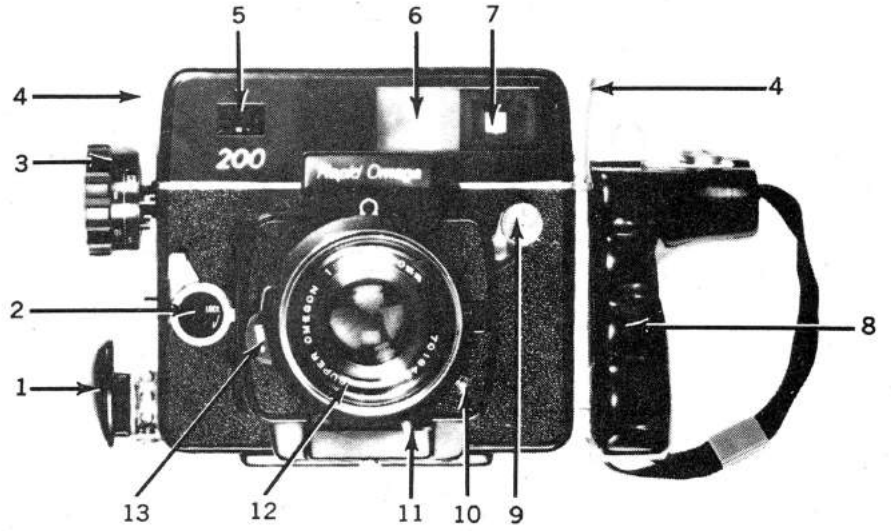


1. Viewfinder window. **2.** Bright frame screen. **3.** Rangefinder window. **4.** Neck-strap lug. **5.** Hand grip. **6.** Shutter-release trigger for cable release. **7.** Lock for film back. **8.** 100mm f/3.5 Mamiya/Sekor lens. **9.** Shutter-release lever. **10.** Flash sync terminal. **11.** Shutter-cocking lever. **12.** Bayonet-mount locking ring. **13.** ASA reminder dial. **14.** 120-220 film wind stop control window. **15.** Accessory shoe. **16.** Focusing ring. **17.** Accessory shoe. **18.** View/rangefinder eyepiece. **19.** Roll-film holder's film-advance lever. **20.** Roll-film holder. **21.** Roll-film holder's exposure counter.

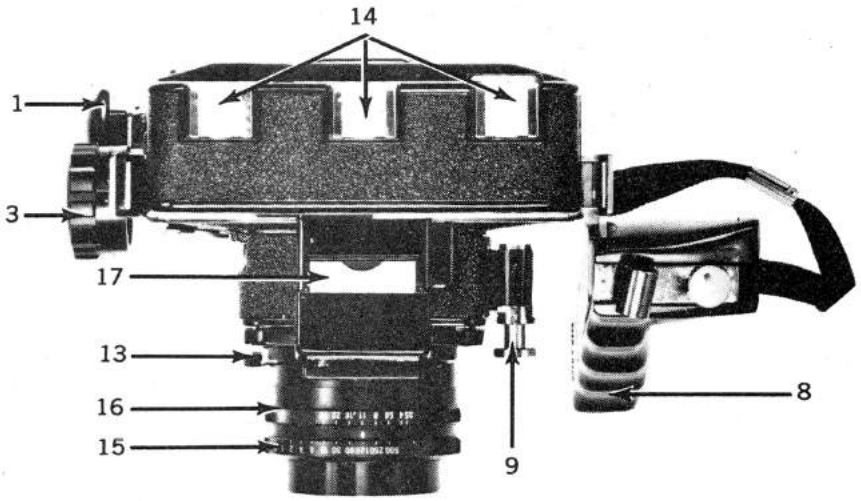
RAPID OMEGA 200

TYPE: 2¼ x 2¾ roll-film rangefinder
LENS: Interchangeable 90mm f/3.5 Super Omegon with stops to f/32, focus to 3½ ft.
SHUTTER: Seikosha between-lens with speeds from 1 to 1/500 sec. plus B and MX sync in each lens.
VIEWING: Combined view/rangefinder, with bright frame lines for 90 and 180mm lenses, corner dots for 135mm lens, automatic parallax corrections.
OTHER FEATURES: Interchangeable 120 and 220 roll-film backs, automatic film advance and shutter cocking, flash guide, three accessory shoes, cable-release clip, adjustable hand grip.
PRICE: With 90mm f/3.5 and 120 back, $575; with 220 back, $595.
MANUFACTURER: Information not available at present time.
IMPORTER: Berkey Marketing Inc., Rapid Omega Div., 25-20 Brooklyn-Queens Expressway West, Woodside, N. Y. 11377.
PHYSICAL DIMENSIONS: 8⅞ in. wide (with pistol grip), 5¼ in. high, 5 11/16 in. deep. WEIGHT: 4 lb. 13 oz.

Ruggedness and fast operation are the prime qualities many professional photographers seek in a medium-format camera. In response, the Rapid Omega 200 provides quick and easy focusing, a rapid film wind, and fail-safe interchangeability of lenses and film magazines—all in the same durable body.



1. Film-advance and shutter-cocking lever. **2.** Film magazine lock **3.** Focusing knob. **4.** Neck-strap lugs **5.** Rangefinder window. **6.** Frame illumination window **7.** Viewfinder **8.** Hand grip **9** Shutter release. **10.** PC flash contact. **11.** Auxiliary shutter-cocking lever. **12.** Lens. **13.** Lens mount lock. **14.** Accessory shoes. **15.** Shutter-speed scale. **16.** Aperture scale. **17.** Flash guide.



The Rapid Omegas (the 100 and 200) are essentially 120/220 6 x 7cm-format rangefinder cameras with parallax-compensating bright frame viewfinders and 1-1/500 sec. full-flash-sync shutters in each interchangeable lens (58 to 180mm). But the less expensive Rapid Omega 100 lacks the 200's fully interchangeable film magazine. Since the front portion of what would be the magazine is fixed to the 100's body, only film holders and magazine backs can be interchanged on that model.

Rapid Omega lenses have two fixed pins at the rear that locate lenses precisely. Also, 90, 135 and 180mm lenses have rangefinder-coupling pins that connect to the finder system through an opening in the camera body. All pins are sturdy, but it's a good idea to always store lenses in their specially-fitted cases to protect them.

As in all top-grade modern rangefinder cameras, the finder automatically adjusts for change in focal length and parallax. And by the way, the Omega's projected frame system is about the most accurate available. There are no coupling pins for wide-angle lenses since there's no bright frame finder. All Rapid Omega lenses are neatly finished in matte black with highly readable, yellow aperture numbers (16) and white shutter-speed numbers (15).

You focus with a generous-sized knurled knob (3) on the right side of the camera body. Overall image brightness on the Rapid Omega 200 is good—in fact better than on earlier models.

To advance film and cock the shutter on the 200, you pull out and then push in the film-advance lever (1). During actual film advance the pressure plate is withdrawn from the place for exposure. This approach makes shutter-release pressure considerably lighter than on previous designs.

The film back on the Rapid 100 is not designed to allow mid-roll film removal. The magazine locks directly onto the camera and there's no way of safely removing it short of going into a darkroom. The 200's back system actually consists of two sections locked together—a magazine and a section containing the dark side. You can simply unlock the magazine at the end of the roll and exchange it for another back. Or you can insert the dark slide and remove the entire unit—which makes it possible to change emulsions in mid-roll.

The Rapid Omega 200 is undoubtedly one of the most versatile, highly maneuverable large-format hand cameras available today, offering a wide range of interchangeable lenses (58-180mm) and full flash sync at all speeds, in addition to convenient handling. While no substitute for a view camera, it has nevertheless become a fixture among many fast-moving pros.

POLAROID SX-70

TYPE: Polaroid Land Film Pack single-lens relfex.
LENS: 117mm f/8 with stops to f/95, focusing to 10 in.
SHUTTER: Electronically-controlled leaf with speeds from 14 to 1/180 sec., X sync.
VIEWING: Non-interchangeable eye-level finder with central split-image rangefinder, full area focusing and viewing.
OTHER FEATURES: Electric motorized film advance and shutter recocking, lighten/darken control, provision for remote shutter button, flash socket for 10-shot GE flahsbar.
PRICE: $180.
MANUFACTURER: Polaroid Corp., Cambridge, Mass. 02139.
PHYSICAL DIMENSIONS: Shut: 7x4x1 in.; Open: 7x4x6 in. WEIGHT: 24 oz.

Aside from invisible but welcome internal improvements, this year's SX-70 offers a most welcome new feature—a central split-image rangefinder to aid users in finding the exact point of sharpest focus, often a somewhat pesky problem until now.

You pull up on the folded finder top and the pocketbook-sized, leather-covered, metalized-plastic body that looks and feels like metal, SX-70 Land camera springs to life. Push a small lever on the side and the hinged front compartment opens, ready for a 10-shot load of the SX-70 Lnad film. Insert the pack, shut the flap and presto, the internal motor, powered by the battery within the film pack itself, spews a cardboard film cover out of the front. You peer into the viewfinder. You see what appears to be a single-lens reflex focusing ground-glass screen—only it isn't. Through a complicated series of aspheric and Fresnel mirrors and eyepieces, you are actually viewing an aerial image—as in a pair of binoculars—a bright aerial image, far brighter than any ground-glass focusing screen could achieve.

You press the good-sized, electronically operated red rubber release button on the camera front. An internal mirror flies upward, the shutter mechanism operates, gears whir and a plasticized 3½-in.-square turquoise-colored picture sheet with a white border zips outward from the same slot as the cover did.

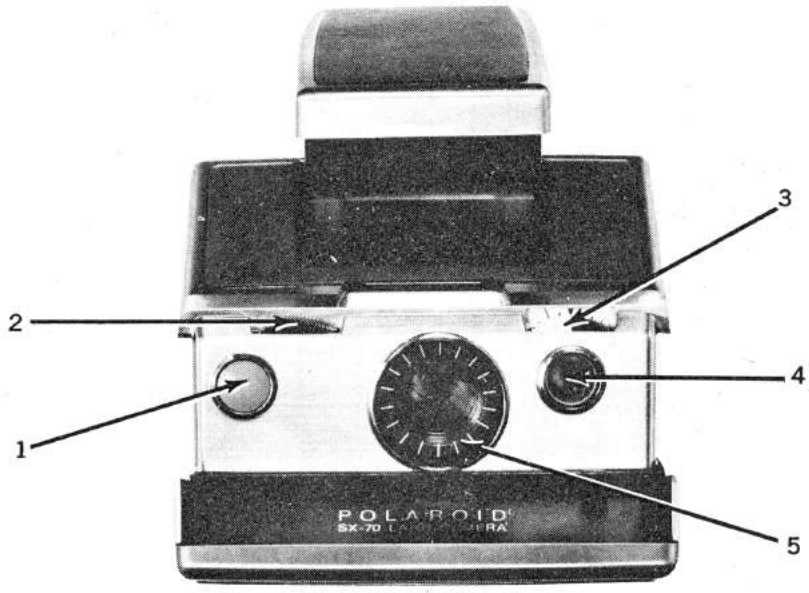
Within 1 min. an image begins to appear under the protective Mylar. The picture is completely developed in from 5 to 10 min.

Exposure for this film having a speed equivalent to ASA 100 is determined by a silicon cell circuit with the cell mounted on the camera front. It's completely automatic, with apertures selected from f/8 to f/95 and speeds from 14 to 1/180 sec. This is a somewhat slow speed for stopping action or for guaranteeing sharpness if you don't have much of an ability to hold a camera steady. However, a larger aperture lens would be impossible in this highly pocketable camera.

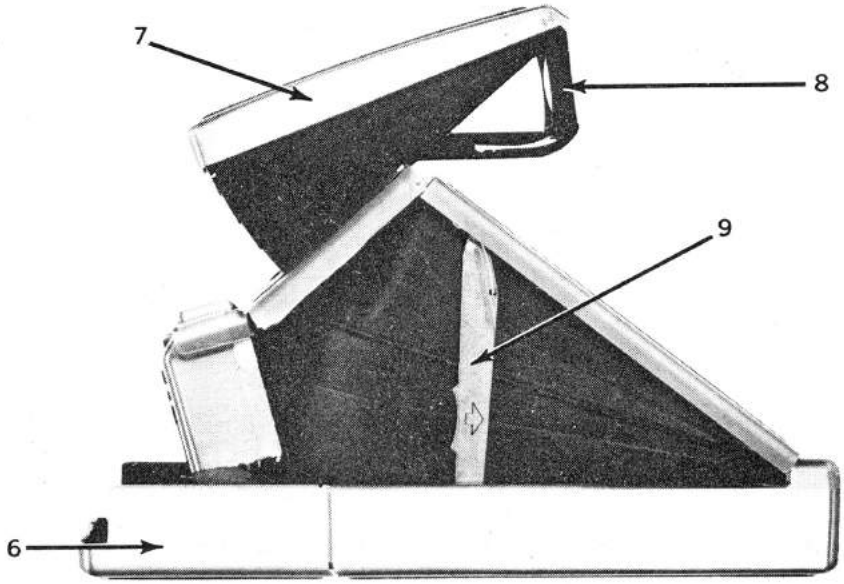
Is the picture too dark or light? Turn the exposure adjustment wheel on the front of the camera for more or less exposure and try again. How do you know when there isn't sufficient light to hand hold a shot? You don't. When in doubt, insert a 4 3/16-in.-long, ½-in.-wide GE 10-shot flashbar specially designed for the camera. The camera can shoot up to 20 ft., firing one bulb after another until all five are used on one side of the bar. You then turn the bar around and fire off the remaining five shots. Special circuitry bypasses any bad or used flashbulbs.

The design and operation of the camera is a real crowd-stopper. Both knowledgeable photographers and tyros were very impressed with its operation. While the image is virually grainless, the new film's ability to resolve detail is approximately equal to the older film for the older cameras.

The Mylar, plus the many layers, does give the new prints a certain depth and luminosity older Polaroid color pack films did not possess. The ability to turn out all-dry prints every 1.5 sec. will do much to make this camera not only a favorite of present Polaroid fans, but its pocket size will certainly attract users who felt the older cameras were too bulky.



1. Shutter-release button. **2.** Focusing wheel. **3.** Darken/lighten control wheel. **4.** CdS meter cell. **5.** 117mm f/8 lens. **6.** Hinged loading front. **7.** Finder housing top plate. **8.** Viewfinder eyepiece. **9.** Opening/closing support strut.



POLAROID 195

TYPE: Polaroid Land film-pack camera.
LENS: 114mm f/3.8 Tominon with stops to f/64, focusing to 3½ ft.
SHUTTER: Seiko between-lens leaf with speeds from 1 to 1/500 sec. plus B, MX sync, self-timer.
VIEWING: Etched frame viewfinder with separate coupled rangefinder.
OTHER FEATURES: Spring-operated developing timer on camera back covers 0-120 sec.
PRICE: $199.95.
MANUFACTURER: Polaroid Corp., Cambridge, Mass. 03239.

PHYSICAL DIMENSIONS: 7½ in. long, 5¾ in. high, 6½ in. deep (with bellows extended). WEIGHT: 2 lb. 13 oz.

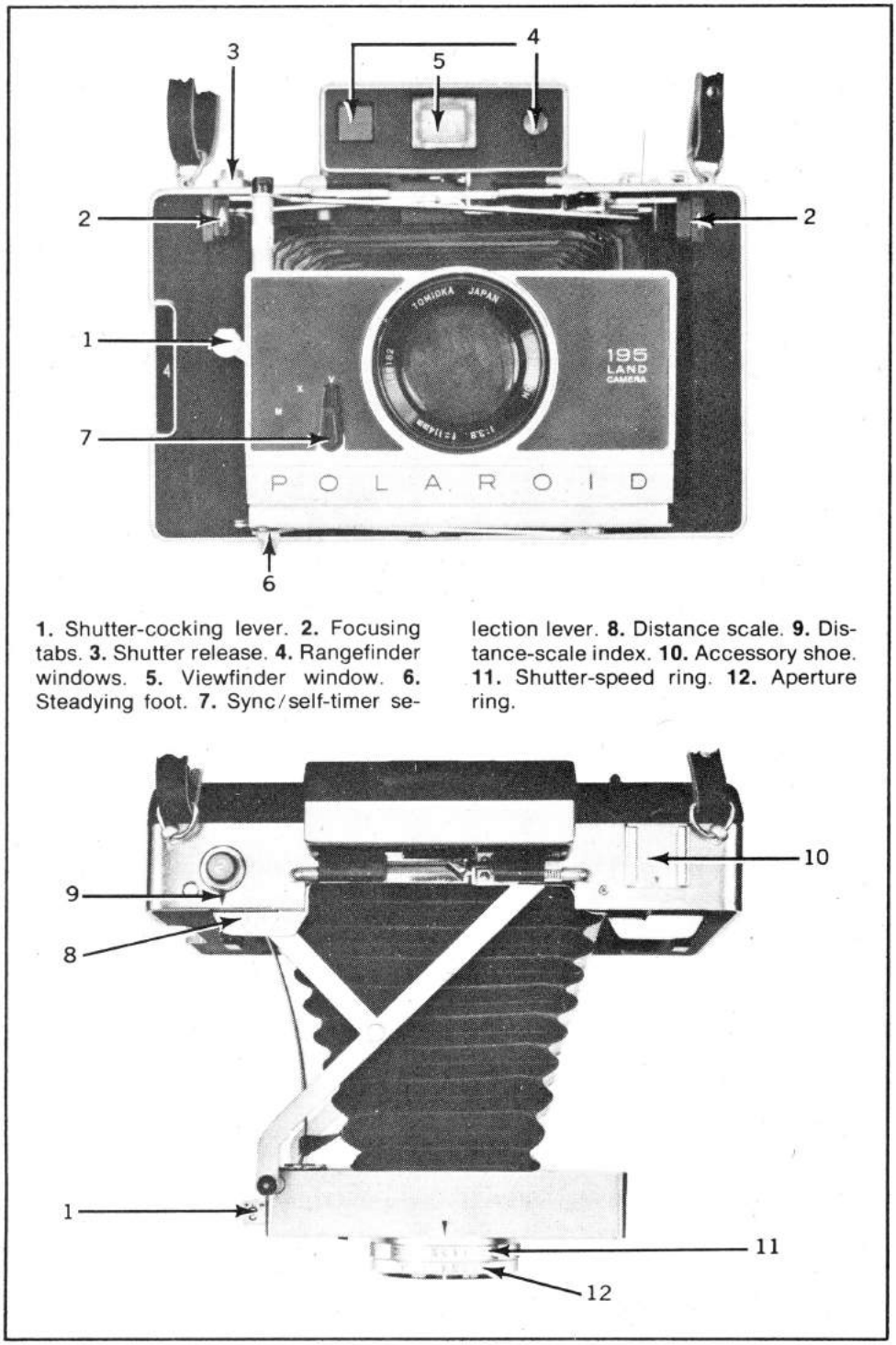
The fully-adjustable, manual-exposure, non-automatic Polaroid film-pack (3¼ x 4¼-in. format) camera has returned, to the delight of professional photographers and f/stop-setting amateurs everywhere. Not incidentally, it may knock the bottom out of the used Polaroid 180 market. (The 180 is the only previous fully-adjustable Polaroid-pack camera, and it has recently brought in as much as $200 per copy from desperate professionals needing its flexibility.)

The new 195 Land Camera features a Seiko 1-1/500-sec. shutter with MX sync, a built-in self-timer (settable by turning the lever at the left of the lens to the "V" position), and apertures to f/64. But there the similarity to the long-discontinued 180 ends. Improvements include a 114mm f/3.8 Tominon (Tomioka) lens (a full half-stop faster than the 180's f/4.5 lens), and a built-in developing timer with calibrations to 120 sec. Missing is the 180's beautiful Zeiss-Ikon projected-frame-line, parallax-compensating range/viewfinder. In its place is a Japanese unit with separate rangefinder and viewfinder windows, the latter incorporating a plain etched frame devoid of parallax markings.

The basic configuration of the 195 is quite similar to other Polaroid pack models of recent years. You flip open (and off, if you wish) the plastic front cover, flip up the magnetically-held rangefinder/viewfinder, draw out the bellows fully, drop a Polaroid film pack in the back of the camera, and you're ready to meter (or guess) the exposure and transfer this information to the aperture and shutter-speed controls around the lens. Then pull out the first film tab, cock the shutter, find your subject distance by aligning the superimposed images in the rangefinder window, move your eye about half an inch to the right behind the viewfinder window, compose, and fire away. As always, the action of the push-pull, double-finger-operated focusing lever is smooth and secure, while all controls are still numbered so you can't forget to do the right things in order—a good feature even on this "professional" Polaroid.

Before you pull out the No. 1 film from the side of the camera, you should make sure to set the mechanical timer at the back of the camera. It's continuously variable from 0-120 sec., depending on the type of film and the temperature conditions under which you're shooting. Unlike the electronic timers on some previous Polaroid models, the 195's timer must be manually actuated by flipping a lever and, instead of emitting a piercing beep when the set time has elapsed, it merely stops whirring along. Apparently, Polaroid's design intention was to keep this batteryless camera as batteryless as possible to answer the gripes of numerous pros.

Although Polaroid film-pack emulsions number 107 (3000 ASA, black-and-white prints, no negative) and 108 (75 ASA, color prints, no negative) are by now too familiar to require additional comment, it is noteworthy that Polaroid introduced the 195 in conjunction with Polaroid type 105 film, an ASA 75, long-tonal-range, black-and-white emulsion which produces a print plus a usable negative (after clearing and washing). Unquestionably, the new manual 195 Polaroid and Polaroid type 105 pack film combination will appeal to many who have in the past regarded Polaroids as less-than-professional instruments.



1. Shutter-cocking lever. **2.** Focusing tabs. **3.** Shutter release. **4.** Rangefinder windows. **5.** Viewfinder window. **6.** Steadying foot. **7.** Sync/self-timer selection lever. **8.** Distance scale. **9.** Distance-scale index. **10.** Accessory shoe. **11.** Shutter-speed ring. **12.** Aperture ring.

ROLLEI 35

TYPE: 35mm compact, nonrangefinder.
LENS: Fixed 40mm f/3.5 Schneider Xenar with apertures to f/22, focusing to 3 ft.
SHUTTER: Special Compur between-lens leaf shutter with speeds from ½ to 1/500 sec. plus B, X sync.
VIEWING: Optical viewfinder with etched bright frame.
OTHER FEATURES: CdS cell meter with matched pointers coupled to aperture and shutter controls, accessory shoe with hot flash contact.
PRICE: $190; black finish, $200.
MANUFACTURER: Rollei Singapore (Pte) Ltd., Singapore 14.
IMPORTER: Rollei of America, Inc., 100 Lehigh Dr., Fairfield, N.J. 07006.
PHYSICAL DIMENSIONS: 3⅞ in. wide, 2 11/16 in. high, 2 5/16 in. deep. WEIGHT: 15 oz.

The Rollei 35 continues to be first and foremost among pocket 35's, and, amazingly, it's actually been reduced in price by $5-15 (the latter for a black-finish model) since last year. Undoubtedly this reflects somewhat lower production costs in Singapore where it's now produced, but our close examination reveals quality to be identical to the former German model.

There are some other variations Rollei 35 fans may notice, however. A new viewfinder with less magnification and parallax markings has been used, and the lens has been changed from a 40mm f/3.5 Zeiss Tessar to a 40mm f/3.5 Schneider Xenar.

This isn't the simple, does-everything-itself machine for a tyro. It isn't automatic and the manual setting footage scale (8) has no simplified close, middle distance and infinity symbols. You must gauge footages and rely on the depth-of-field scale.

The Rollei 35 is essentially an average illumination (or better) camera. The CdS meter will react accurately down to f/5.6 at 1/30 sec. with a film having an ASA speed of 400, and lower with slower films.

When you slide the back plate off the camera for loading you'll note that the pressure plate isn't attached to the camera back. It's hinged to the main camera body, as is just about everything else.

You thread the film across the film guide rails into a rather wide take-up spool slot, which has a bright white center so you can't miss the slot even if the illumination is poor. You then slide the camera back on, pull out the lens tube (9) and twist slightly to lock it in place, give three flips on the left-handed 190° single-stroke rapid-wind lever (15) and you are ready for the first shot. The white meter needle and red circle pointer are easily visible atop the camera. The shutter-speed dial (6) and aperture wheel (10) have markings whose legibility would do credit to a much larger camera.

Make a good guess of the distance, frame the subject within the bright frame of the optical viewfinder (4), which shows a smaller than life-size but surprisingly big image, and squeeze off a shot with the cable-release-threaded shutter button (11) on the top right of the camera.

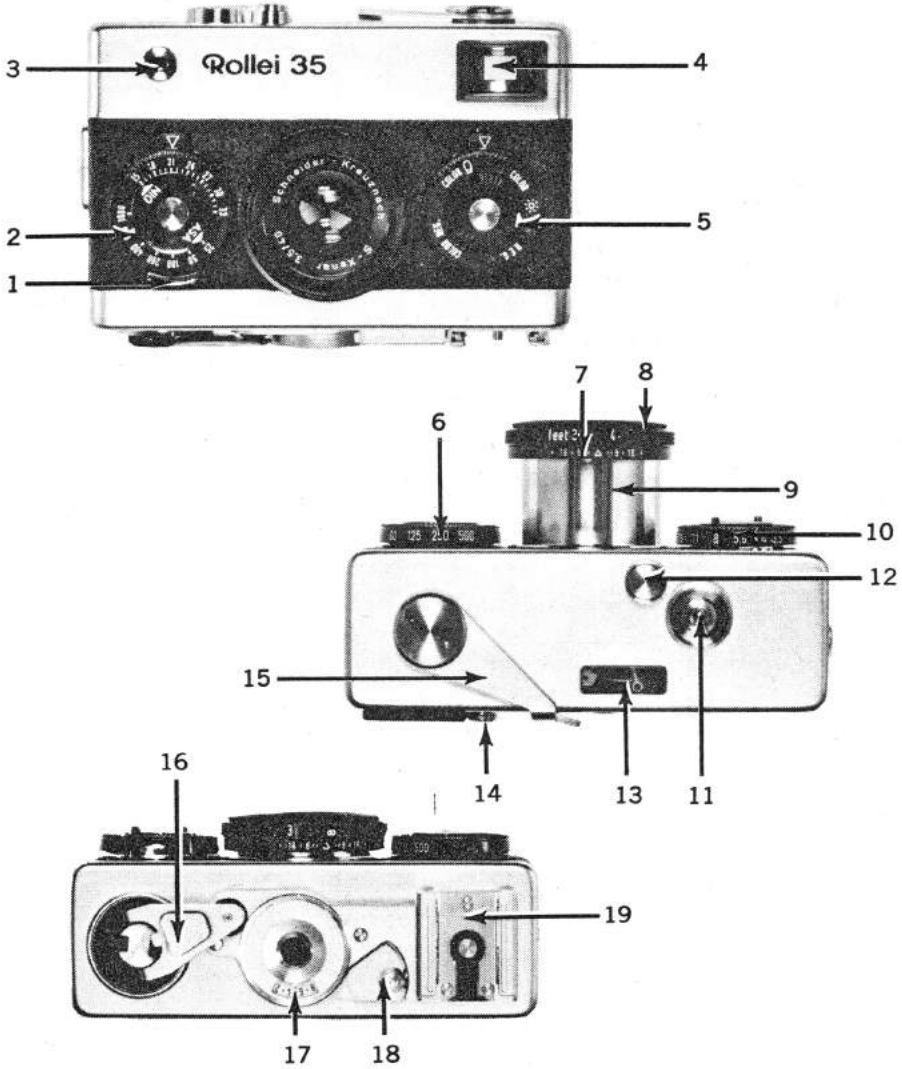
After your last exposure, you swing out the large rapid-rewind crank (16) on the bottom of the camera, check to make sure its keying lug is locked snugly into the rewind spindle, throw the rewind lever (14) on the back of the camera and rewind away using the large-sized crank.

To collapse the lens, you push a small button (12) atop the camera, twist the lens and push the tube inward. You cannot take a picture with the lens collapsed; you can't push the release or even advance the film unless the lens is fully extended.

A few cautionary words. You must not try to force the lens to collapse until you've cocked the shutter. Unless the camera's innards are arranged properly there isn't room for the lens tube.

Tests showed that the CdS circuit was accurate to within ½ f/stop over its entire range; the shutter was within 15 percent of marked values over its speed range—a very good leaf shutter performance.

Like the Minox, the Rollei 35 has taken its place as a prestige possession as well as a practical and capable instrument.



1. Aperture dial lock. **2.** Film-speed selector. **3.** Exposure meter window. **4.** Viewfinder window. **5.** Film-type reminder dial. **6.** Shutter-speed selector dial. **7.** Depth-of-field scale. **8.** Distance scale. **9.** Retractable lens mount. **10.** Aperture selector dial. **11.** Shutter release. **12.** Lens mount release/lock. **13.** Metering window. **14.** Rewind-advance selector. **15.** Film-advance lever. **16.** Film-rewind crank. **17.** Frame counter. **18.** Body-locking catch. **19.** Accessory shoe.

WIDELUX F-7

TYPE: 35mm fixed-focus panoramic viewfinder camera.
LENS: 26mm f/2.8 Schwartz, stops to f/11, fixed focus at infinity.
SHUTTER: Revolving drum-type focal-plane with speeds of 1/15, 1/125 and 1/250 sec.
VIEWING: Super-wide frameless optical finder.
OTHER FEATURES: Revolving lens-shutter drum, takes 11 24 x 59mm 140° panoramic pictures on a 20-exp. roll, 21 on 36-exp. roll.
PRICE: $595.

MANUFACTURER: Panon Camera Co., Tokyo, Japan.
IMPORTER: Harrison Camera Corp., 249 Post Ave., Westbury, N.Y. 11590.
PHYSICAL DIMENSIONS: 6⅞ in. wide, 3⅝ in. high, 2½ in. deep. WEIGHT: 1 lb. 13 oz.

The almost lost art of panoramic photography is still alive, thanks to the efforts of one tiny company called Panon, which developed their first super-wide camera in 1959. Despite its sole occupancy of the extreme-wide view camera field for many years, the demand evidently was not there; so the original Panon, which used 120 roll film, and its 35mm successor both disappeared from the camera shops.

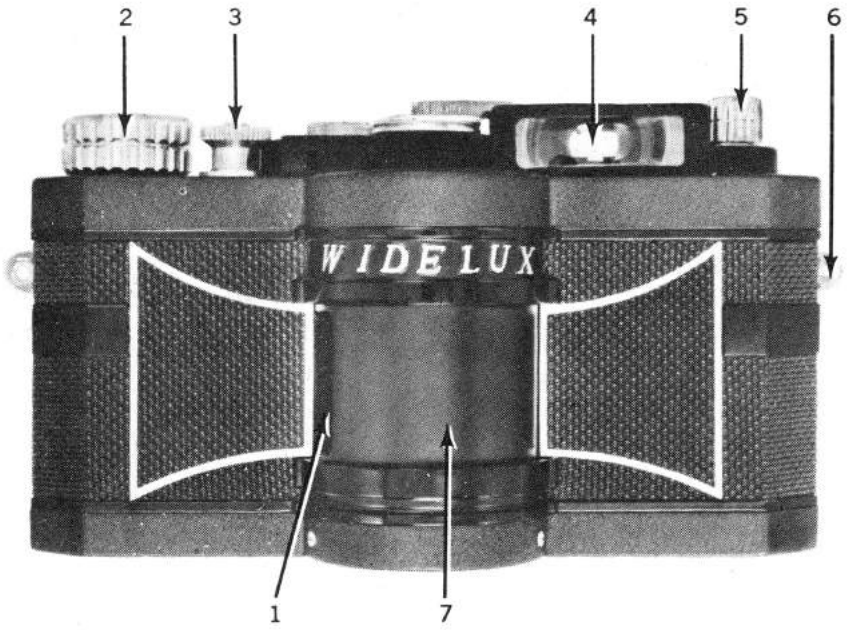
Now, after a few years' absence, the Panon has been resurrected under the name of Widelux F-7. The features are much the same as the original 35mm Panon, and it produces breathtaking views whether by projection or enlarged print.

Let's see how it works. First take the camera back off by turning the lock knob (10). It comes off entirely. Loading requires a film leader slightly longer than that usually needed for 35mm cameras. Threading the film through the two guide rollers and the sprocket is somewhat complicated at first. After checking the film counter (8) to be sure it's at zero (it zeros automatically), you start winding to the first frame. Shutter speed must be set after the film is wound—just like the old Leicas, except you needn't lift up the speed dial. The aperture is set with a dial located just in front of the shutter-speed dial. As you press the shutter-release button (3) you hear a zipping noise, the result of the lens turning on its supporting drum axis. The front side of the drum has an opening for the lens, and the back side has another opening for the shutter slit as it passes in front of the film plane. The front remains open at all times, while the rear opening closes when you wind the film and opens only when you click the shutter.

The shutter-speed accuracy, therefore, depends entirely on the turning speed of the drum. More important than speed, however, is the evenness of the exposure. Since the shutter slit is always the same width—about 2mm—the drum's movement must be perfectly smooth. Even a slightly uneven turn causes vertical stripes on the picture. After lengthy (close to one year) trials in our lab and field, we found almost no evidence of uneven exposures or incorrect shutter speeds. Stroboscopic tests show speed errors running below 30 percent and less unevenness of exposure (under 20 percent), which was far better than our expectations.

The value of a specialized camera is only as good as the services provided by the importer. For instance, there are no slide mounts for 24 x 59mm slides, but Harrison Camera sells them in packages of 120 for $22.50. That's all well and good, but you need a 2¼ slide projector. Of course, you can use the Realist Deluxe 620, sold by Harrison along with a special filter set for the Widelux F-7. The set consists of skylight, daylight-to-type-B, type-B-to-daylight conversion, 2X neutral density, Y2, and orange filters; it costs $48.

Admittedly, such a specialized camera is not easy to produce. The price, therefore, is high but reasonable. We would suggest some improvements in the future. Three shutter speeds are not enough to control exposures over a wide range of lighting situations. The lens should have lens apertures smaller than f/11 and, if possible, the camera should have a better viewfinder.



1. Opening for lens. **2.** Film-advance knob. **3.** Shutter release. **4.** Finder. **5.** Rewind knob. **6.** Neck-strap lug. **7.** Lens/shutter drum. **8.** Frame counter. **9.** Level. **10.** Camera back lock. **11.** Shutter-speed dial. **12.** Lens aperture dial.