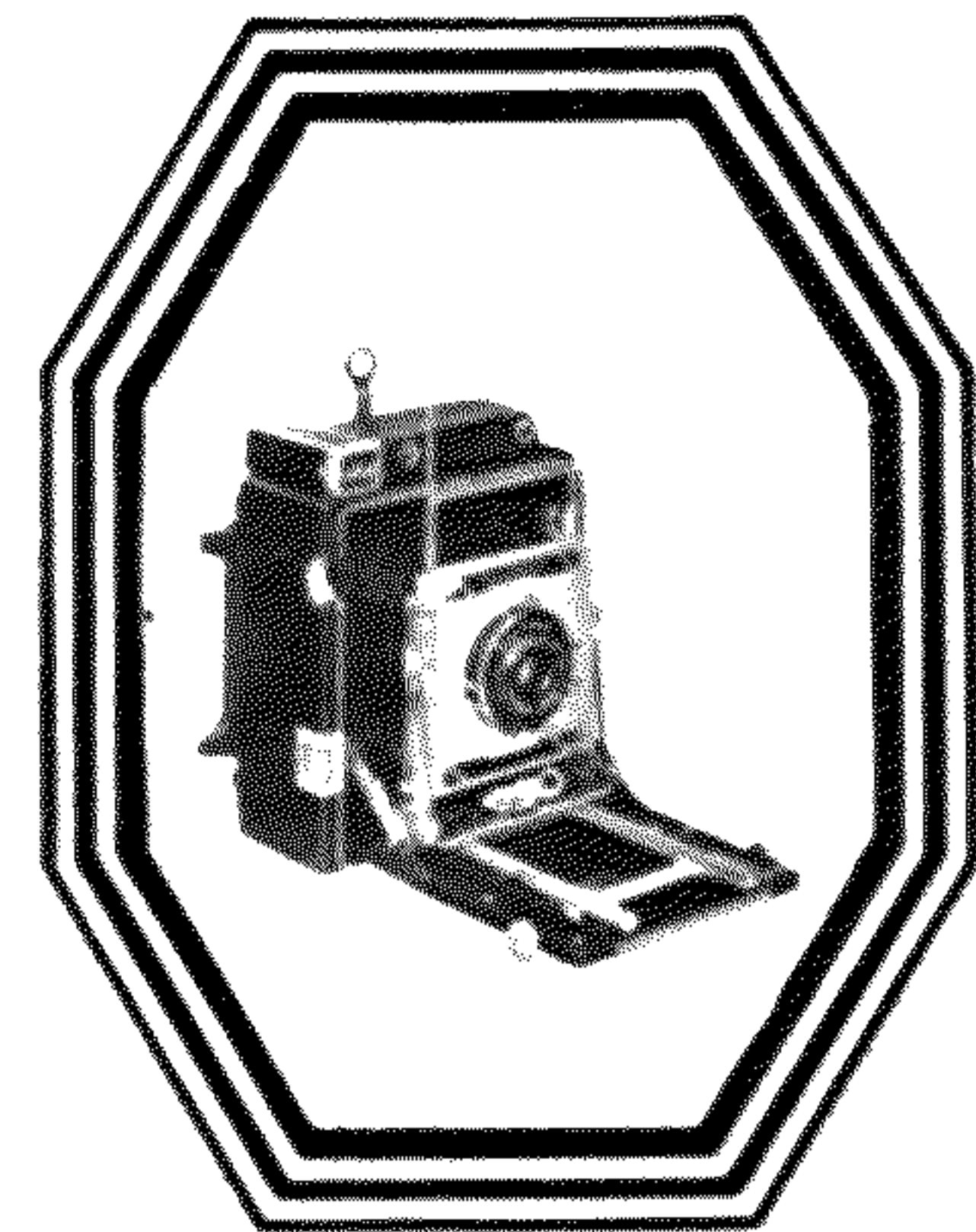
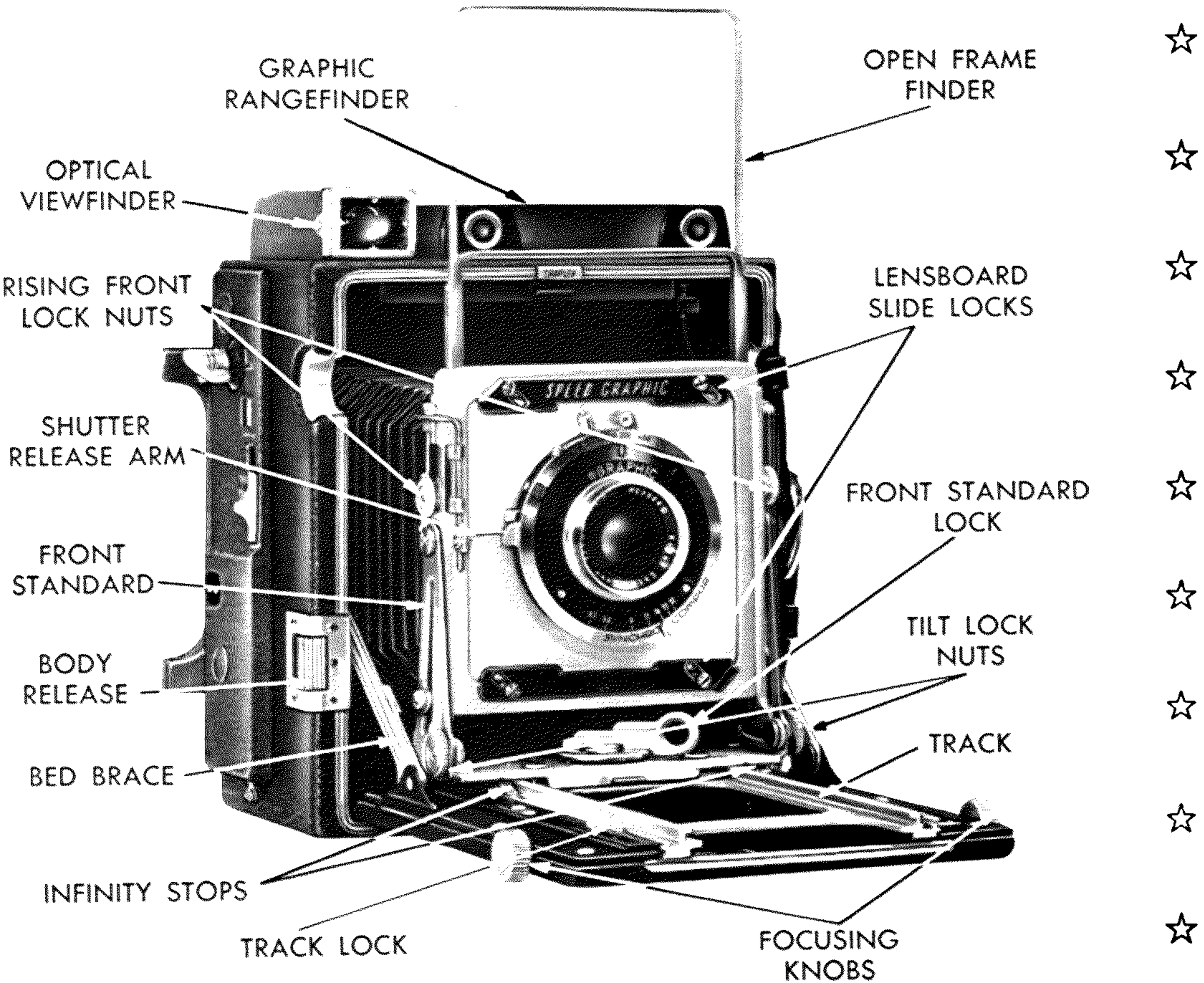


Pacemaker Graphic

INSTRUCTION MANUAL





This is a condensed operating manual covering the basic points of the three sizes and two models of the Pacemaker GRAPHIC Cameras. If you desire a more complete manual, just drop a line to our Consumer Service Dept., and it will be sent.

Opening the Camera: Press the bed release button at the top center or top left corner of the camera body (appears as a bump in covering) and lower door or bed until it locks. Draw the front standard out to the infinity stops and lock. NOTE that these are constant reference points to permit checking ground glass sharpness at all times. They may be folded down to allow use of extended bellows.

TAKING THE PICTURE:

1. Set the diaphragm pointer and shutter speed according to the film maker's recommendation or use a good exposure meter. When using the SPEED GRAPHIC, make certain the focal plane shutter is open when using the front shutter or vice versa.
2. Focus—using the focusing scale on bed or ground glass or rangefinder. Close shutter and cock.
3. Insert loaded film holder in back of camera and withdraw dark slide.
4. Center the subject in open frame finder or optical viewfinder and check adjustment for parallax if needed.
5. Hold camera steady and press or squeeze back on body release to make exposure.
6. Replace dark slide in film holder.
7. For next exposure, repeat above procedure and be sure a new film is in place.

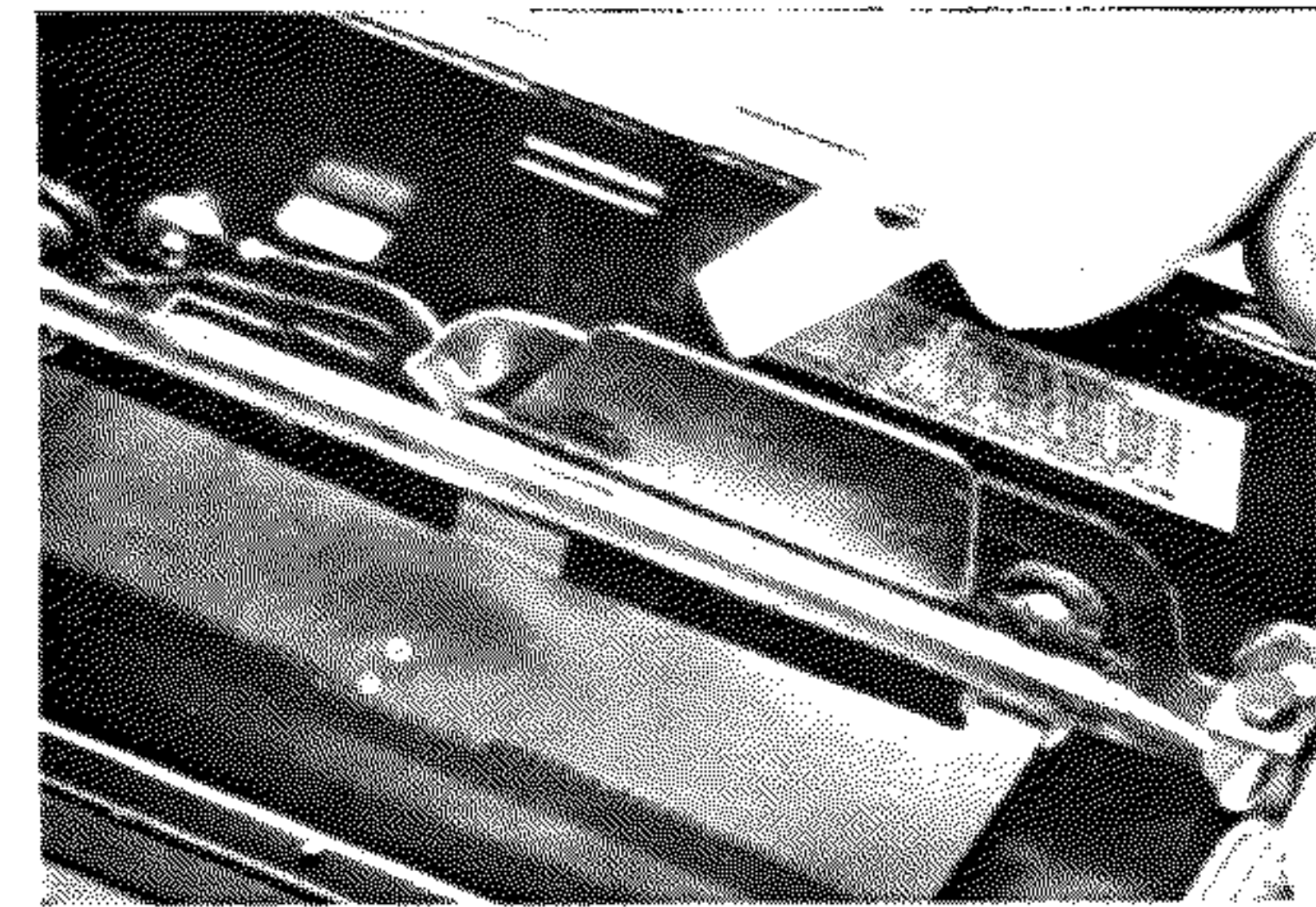
Closing the Camera: Before closing the bed, be sure to roll the track back as far as possible with the focusing knob. Lock the front standard after sliding it back into the camera box.

Focusing Scales: For long distances, align the markings of one scale with the other scale according to your estimate of distance. For shorter distances, set the arrow on the movable scale to the stationary scale according to your distance estimate. Double check or verify with ground glass or rangefinder if desired.

Focusing scales must be calibrated for each individual lens. More than one set of scales and stops may be fitted to Pacemaker GRAPHICS.

Finders: The *open frame* finder is generally used for fast action. Click stops and scale markings for parallax adjustment are at the right side of the open frame—except in the late models of 4 x 5 Crown and Speed. These have the coiled spring type of open frame and the parallax correction is in the adjustable peepsight. Slide the eyepiece up or down and open the front frame to full size.

The *Optical Viewfinder* accepts interchangeable field masks for lenses of different focal lengths and parallax is corrected by rotating the eyepiece disc. On 4 x 5 Graphics with Graphic Range Finder the Optical Viewfinder is built-in and corrects automatically for parallax. Use the Wide Angle Adapter when using 90 mm wide angle lenses.



The Graphic Rangefinder image will coincide with the image of the surrounding field when the camera is accurately focused. For each different focal length lens used there will be an individually matched cam. These cams should be kept with its lens and lensboard when not in use. To change or install cams merely insert into the slotted tube which is housed inside and under the top of the camera box. See illustration.

Ground Glass Focusing: Press in on the small latch at the bottom of the viewing hood. Open the shutters* of the camera. To remove the hood for close examination of the corners of the ground glass, press outward on the spring clips at either side of the hood and lift off. To close the viewing hood, press inward on the side wings, fold the lower flap up and fold the top down to lock.

*Front on Crown,—front and back on Speed.

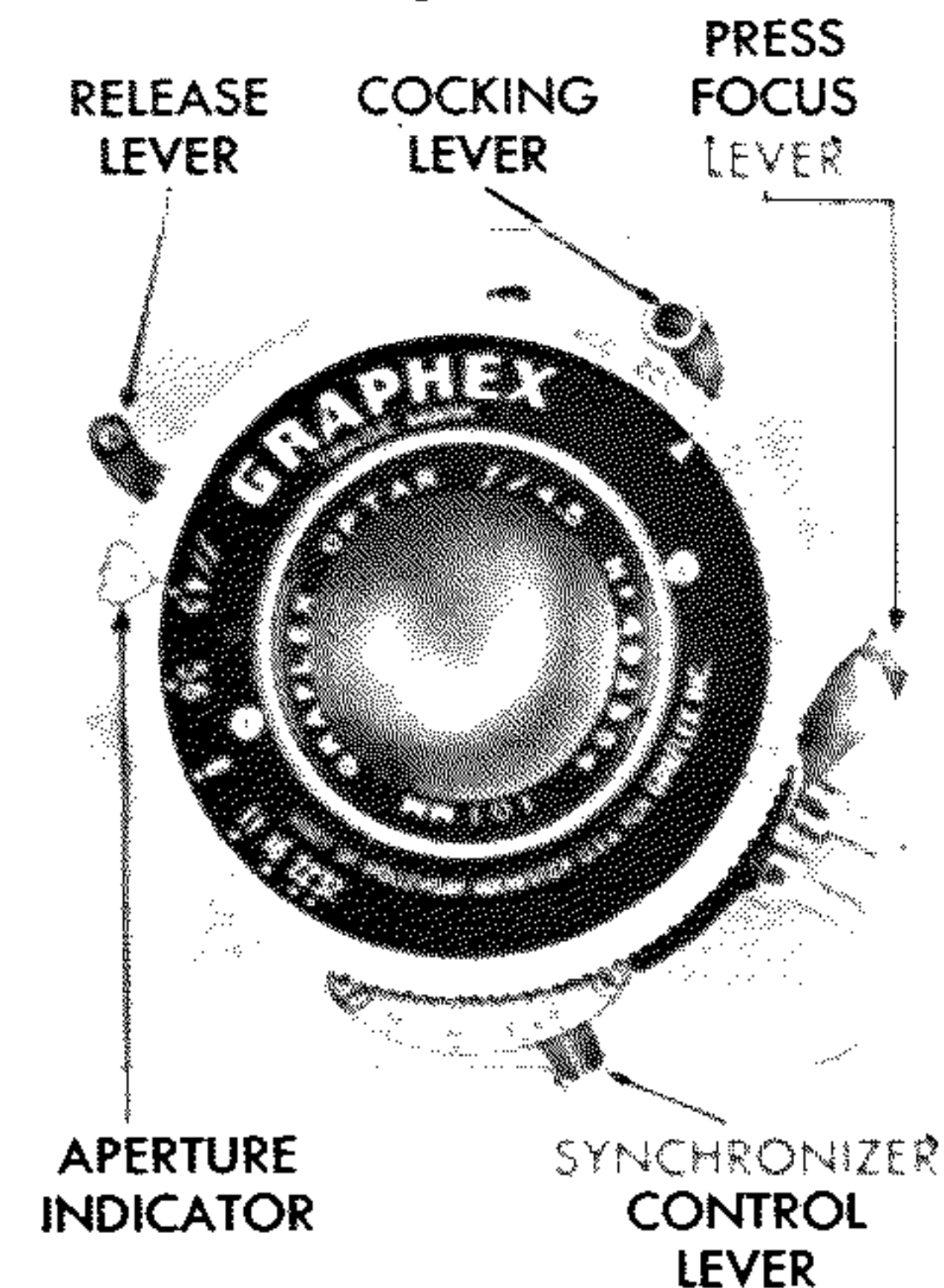
Rangelite: This is a double beam focusing device built into the Graphic Rangefinder for little or no existing light photography. The red button is the switch. When both beams superimpose on the subject to make one spot of light, the camera is accurately focused.

Graflok Back: This uses *ONLY* GRAPHIC attachments. It is a spring back with a panel removable by pressing inward on the knurled edges of the panel arms at the top and bottom and sliding the assembly to the right where it may be lifted off. The GRAPHIC Roll Holders, film pack adapters and GRAFMATIC Film Holders may then be attached and locked in place with the slide locks. The last two accessories may also be inserted under the focusing panel and locked in place with the slide locks.

Graflex Back: This accepts *ONLY* GRAFLEX attachments. Film receptacles and the focusing panel are held by top and bottom slide locks.

GRAPHEX SHUTTERS

Selecting Speeds: Turn the outer knurled ring until desired number is opposite the pointer on the front of the shutter (additional pressure is required in turning to 1/400 to overcome resistance of the booster spring).



Flash with Synchronized GRAPHEX: Connect the cord from contact posts on the shutter to the SHUTTER (series) Outlet of battery case. Move synchronizer control lever to proper position according to type of lamp being used before cocking shutter. For faster (black) speeds, use black "M" position, for slower (red) speeds, use corresponding red "M". For gas-filled type "F" lamps or high speed electronic flash not operated by a relay, use "X-F" setting. Use red shutter speeds with SM and SF lamps. Place in the "OFF" position if flash is not being used, or shutter is being tripped with a solenoid. Trip shutter by the Body Release. Do not attempt to use the button on the battery case.

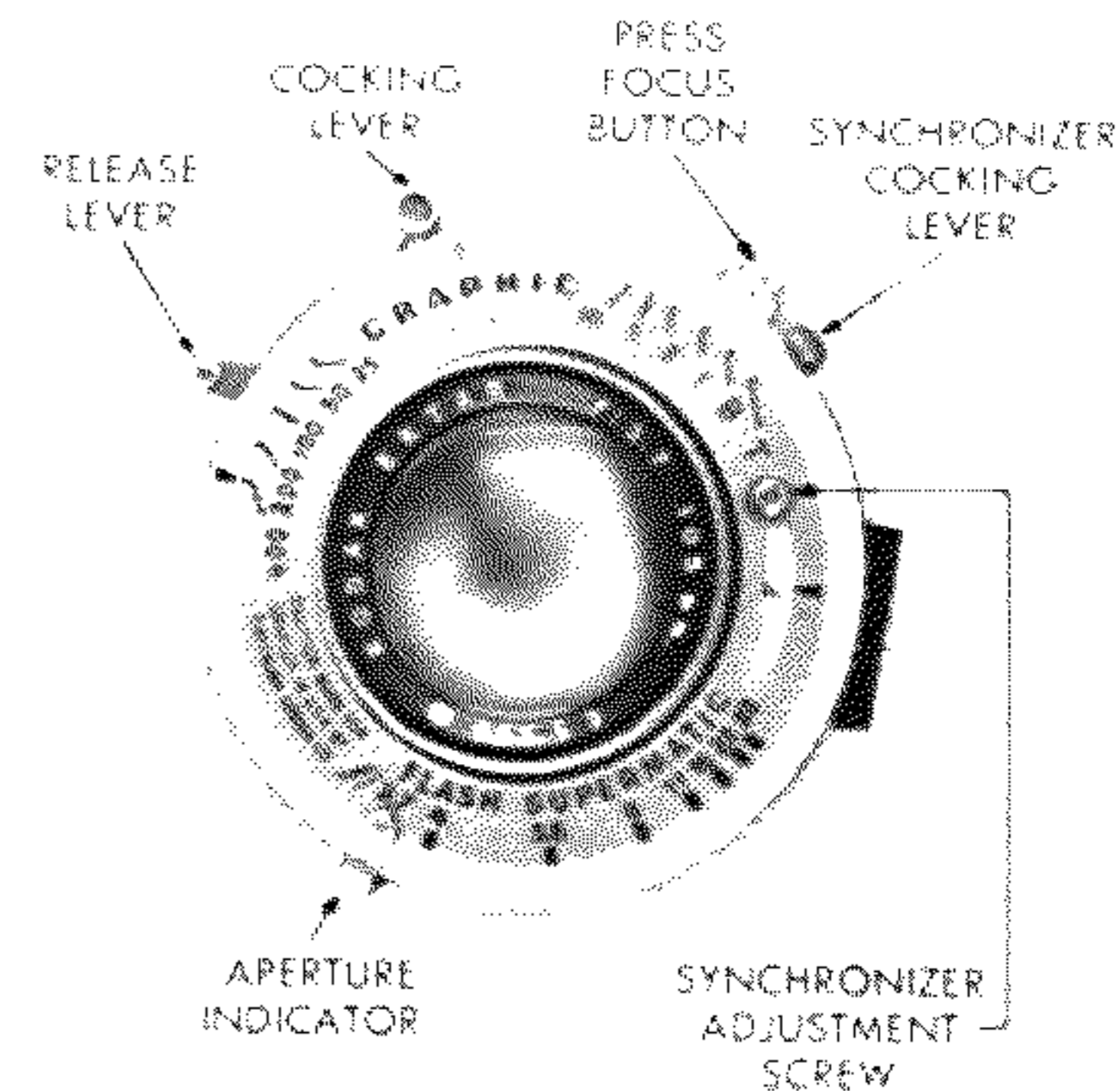
To Operate: If you have a Speed GRAPHIC, be sure focal plane shutter is open. Set synchronizer control lever if flash is used. Set shutter speed and aperture indicator (diaphragm) for exposure required. (Use film exposure guide or a meter for best results). Move cocking lever to the right to cock the shutter. Hold camera steady and carefully squeeze the shutter or body release to make the exposure. For convenience in focusing, the "press focus" lever may be used. Cock shutter in the normal way, depress the "press focus" lever until shutter blades open. To close, move the lever forward and upward. Trip shutter as above. This shutter may be operated by an external solenoid, if desired, but be sure to move control lever of synchronized shutter to "OFF."

Graphex (X) Shutter: The GRAPHEX (X) shutter is operated in the same manner as described above. The contact posts on the shutter are intended to be used only with Class "X" (zero delay) electronic flash units, and not with standard flash lamps. For synchronization with standard flash lamps and with relay operated high speed units, a solenoid should be attached to the shutter and synchronized with its operation.

SUPERMATIC SHUTTERS

Selecting Speeds: Turn outer knurled ring until pointer is opposite shutter speed number for exposure required.

Flash Synchronization with Flash Supermatic: Connect the cord from the shutter contact posts to SHUTTER (series) outlet in the battery case. To set, pull adjustment control button up to unlock, or loosen screw, if shutter has this type of adjustment. Set synchronizer adjustment according to type of lamp being used. For synchronization with electronic units not operated by a relay, cock and release shutter in the normal way. Do not pull down on synchro cocking lever. Trip by press-



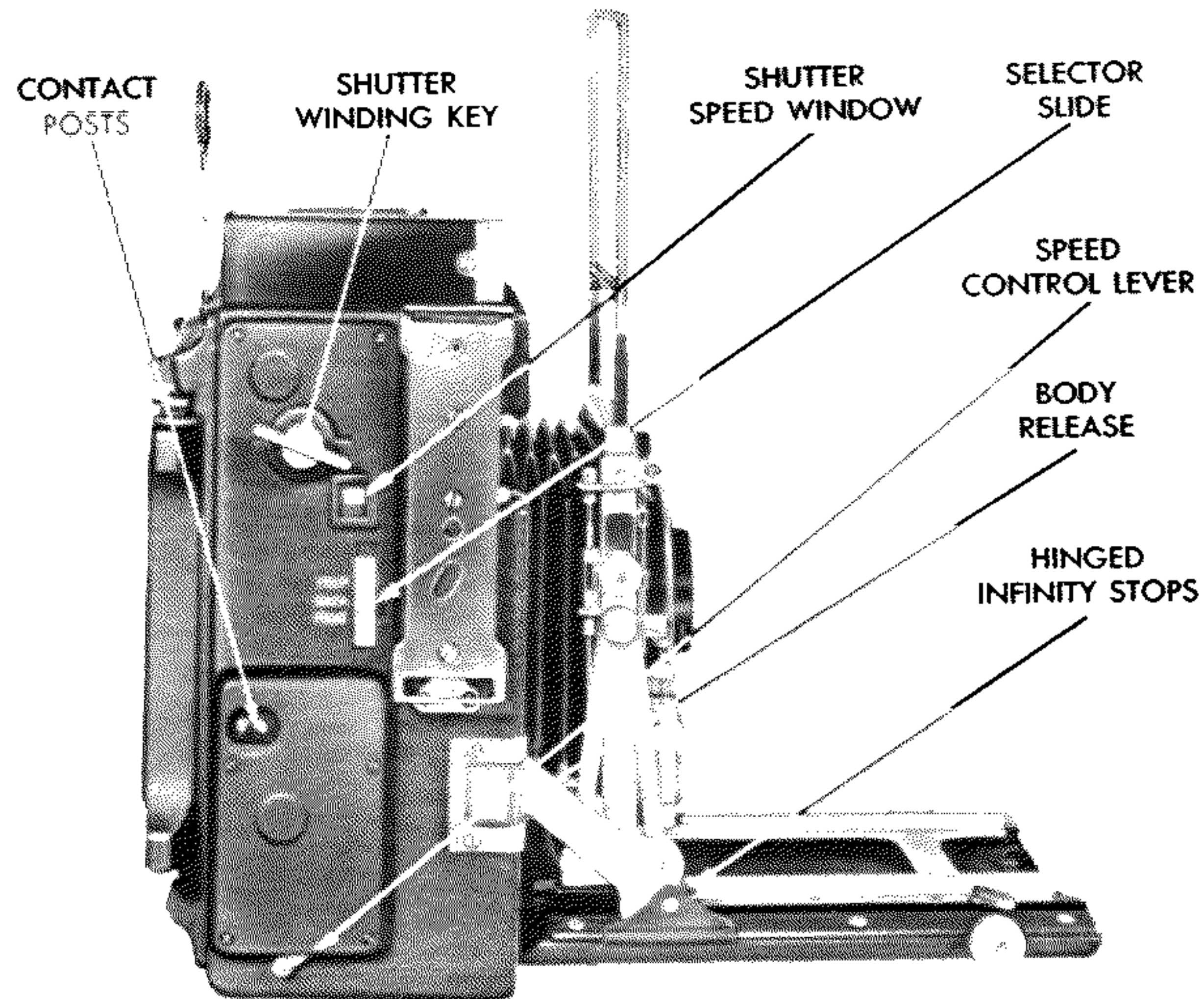
ing Body Release. Do not attempt to use the button on the battery case. The Flash Supermatic Shutter is not intended to be solenoid operated.

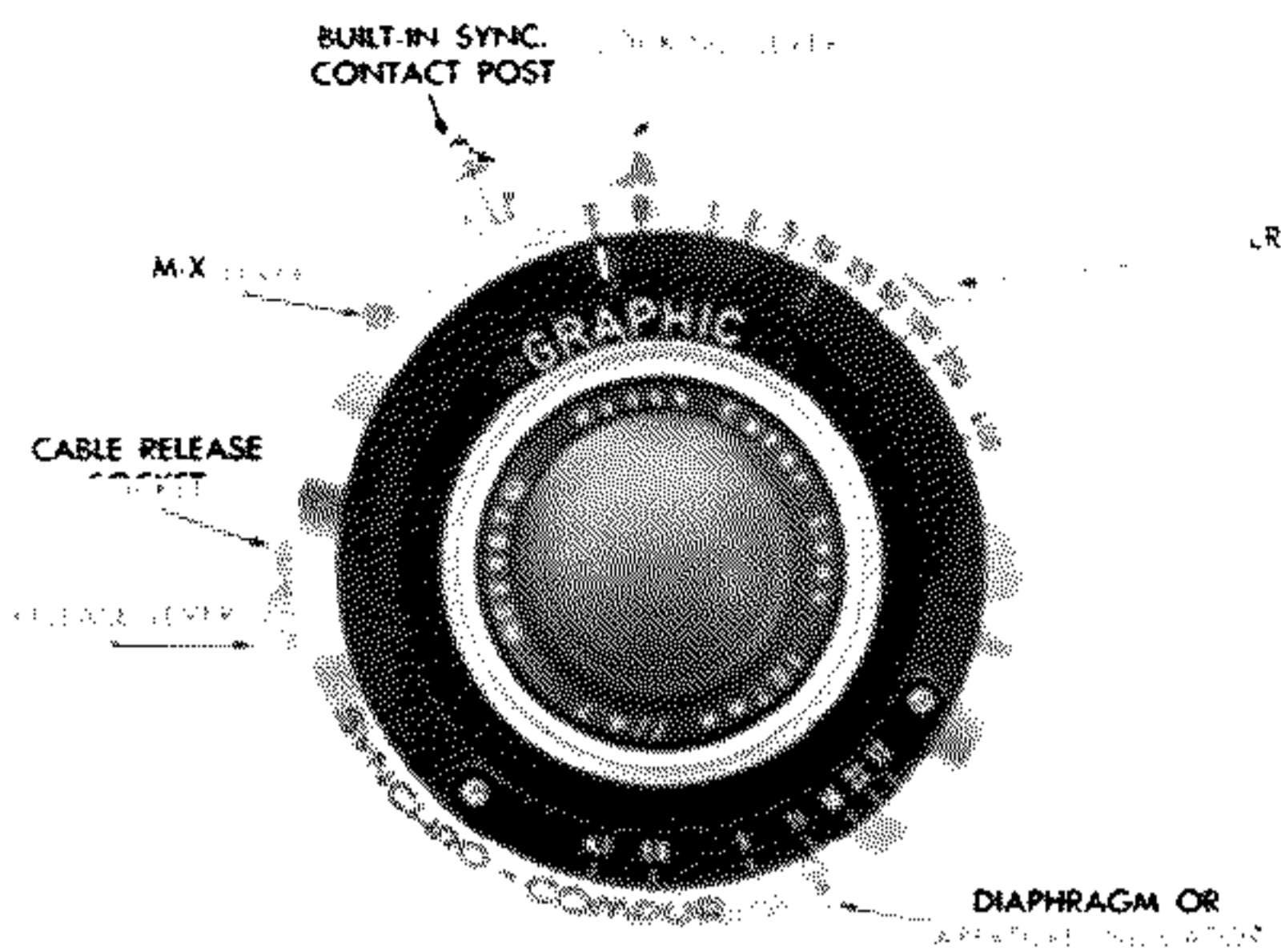
To Operate: If you have a Speed GRAPHIC, be sure the focal plane shutter is open. Set the shutter speed and aperture indicator (diaphragm) for the exposure required. Cock the shutter lever by moving to the right. (For flash synchronization with Type F or M lamps, also cock the synchronizer lever by moving as far as possible). Hold the camera steady and carefully squeeze the shutter or body release to make the exposure. For convenience when focusing with the ground glass, the "press focus button" may be used. Cock the shutter in the normal way. With the button held down, trip the release lever. To close, recock the shutter. Trip shutter as above.

SUPERMATIC (X) SHUTTER

The Supermatic (X) Shutter is operated in the manner already described. The contact posts on the shutter are for Class, "X" (zero delay) high speed electronic flash units, and not standard flash lamps. For synchronization with standard flash lamps, and relay operated high speed units, a solenoid should be attached to the shutter and synchronized with its operation.

Body Release: This permits tripping the front shutter and the focal plane shutters of the Speed GRAPHICS. Set the selector slide at FRONT for tripping the front shutter, and BACK for tripping the focal plane shutter. Press in on the lower edge to move the slide up or down.





GRAPHIC SYNCHRO-COMPUR—Operating Instructions

The Graphic Synchro-Compur is a rim-set shutter with built-in synchronization and a full range of speeds from one second to 1/400th including Time and Bulb. The diaphragm markings or stops are engraved f/4.7-5.6-8-11-16-22-32.

Operation: The knurled rim or speed ring may be turned in either direction to set for the desired speed. At the 1/400th setting, extra effort may be needed because of the increased tension. Always set the speed before cocking the shutter.

Below the setting lever is another, the press focus lever, which when pushed in, will open the blades *after the shutter is cocked* to permit ground glass focusing. To close the blades pull out the press focus lever. Be sure the focal plane shutter is fully open (0) when using the front shutter.

The diaphragm may be set by moving the indicator or pointer. Determine the correct opening from a film exposure guide or meter or from experience. Hold the camera steady, especially at slow speeds.

Set for Time or Bulb exposures by moving the speed ring to T or B and then cocking the shutter. For Time, press the release lever once to open and once again to close. For Bulb, press once to open and let up when exposure is completed.

Time is used for relatively long exposures and Bulb for shorter exposures, but longer than one second. A cable release socket is just above the release lever and also in the body release. Use of a cable will minimize jar.

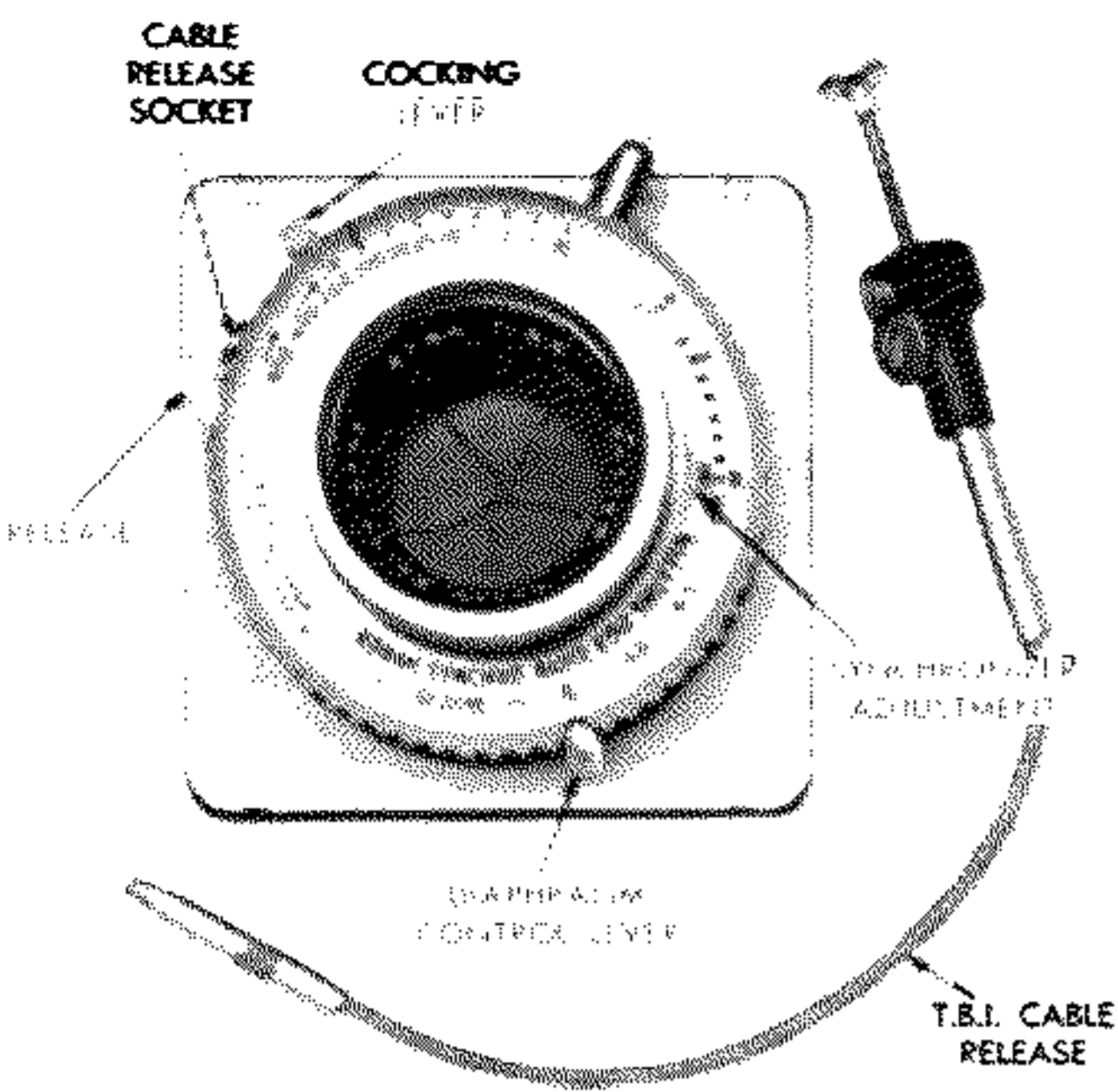
Flash Lamp Synchronization with Graphic Synchro-Compur: A green-tipped lever situated in the upper left quadrant of the shutter should be set on M for any of the following lamps.

Type M, No. 5, Press 25, *bayonet base*; No. 11, No. 22, No. 2, Press 40, etc., *screw base*.

Type F (SM and SF, gas filled), use 1/100th second or slower and the synchro lever on X. Cock shutter in the usual manner, attach connecting cord (No. 2808 36" Graflite-ASA Bayonet Koiled Kord) to the bayonet post on the top of the shutter and plug the other end into the battery case *shutter* outlet. Trip shutter by the body, cable or hand release on the shutter. Do not attempt to trip shutter by using button on the battery case. To use the button on the battery case, install and synchronize a solenoid and set the synchro lever of the shutter at X. Use No. 2703, 20-inch or No. 2704 36-inch Graflite solenoid connection cord or No. 2809, 36-inch Koiled Kord from the solenoid to the solenoid outlet in the battery case.

Electronic Flash: There are two basic types of electronic flash units. One is the zero type, such as Strobflash which has no delay and is the Class X. The flash tube is fired without delay as soon as the circuit is closed. Attach the connecting cord No. 2808 to the sync. contact post, set the M-X lever at X and cock the shutter. When the shutter is tripped the Strobflash will fire when the shutter is fully open.

The other type is tripped by a built in relay which must be used with a solenoid because of its long delay which corresponds to the delay of the solenoid. It is not recommended that the relay type be used with the Graphic Synchro-Compur inasmuch as the delay mechanism in the shutter may not hold the relay. If too long, it may cause arcing and pitting of the contacts. Frequent repairs or replacement of the contacts may be necessary. Use a relay type flash unit with the solenoid hook-up only.



THE KODAK SYNCHRO RAPID "800" SHUTTER

The "800" shutter is a rim-set, cocking shutter which has a range of ten speeds. Built-in synchronization is provided for type F, type M and high speed electronic flash units having zero delay.

Selecting Speeds: Turn the outer knurled ring until the index marker is opposite the shutter speed selected. A little more effort is needed to set the speed index opposite the "800" dot. To cock the shutter, move the cocking lever to the right—likewise for the diaphragm control lever.

The shutter may be released by pressing the body release or the cable release supplied. The T.B.I. cable release is for convenience in making time exposures, or for ground glass focusing.

The cable release should be used when making pictures at speed slower than 1/50th second and the camera should be on a firm support such as a tripod.

FLASH SYNCHRONIZATION

The "800" shutter has built-in contacts with adjustable timing delay for class "F" (gas filled), class "M" (wire filled) lamps and the "X" type high speed electronic flash units having a "O" delay.

Attach the standard ASA bayonet connecting cord to the bayonet post on the shutter rim. When using class "F" lamps, set the selector on "F." Effective synchronization can be obtained with this type lamp at all speeds up to and including 1/400th second. Set the selector at "M" for the wire filled flash lamps. This provides a 20ms delay for the lamp to reach its effective light output (not recommended for Solenoid synchronization).

CAUTION: The lamps will flash and cause a serious burn if they are inserted in the reflector when the shutter is open.

HIGH SPEED ELECTRONIC FLASH

The "X" setting is provided for high speed electronic flash units having no time lag. It is merely necessary to set the selector on "X" and connect the cord from the post to the lamp. Tripping the shutter in the normal manner will fire the flash unit in synchronization with the shutter. This shutter is not made for use with electronic flash units which are triggered by relays or solenoids. Such units may destroy the shutter contacts.

Focal Plane Shutter: The focal plane shutter produces six accurately controlled speeds read directly in the shutter speed window. Shutter speeds are changed by (a) turning the winding key, (b) tripping or "running down" the shutter, (c) moving the speed control lever forward or backward. The shutter may be tripped without closing the synchronizer circuit by moving the selector slide up to TRIP and down again.

Time Exposure: Set the shutter at "T" with the speed control lever moved back. Trip once to open and once again to close the shutter.

Synchronization: The Focal Plane Shutter is synchronized at speeds of 1/1000 and 1/250 with only No. 31 and No. 2A lamps. Other lamps and electronic flash tubes can be used at the "Time" setting. The lamp will be fired as the shutter is tripped by the body release, but not by pressing the button on the battery case. Lamps will not be fired when the shutter is being cocked.

DROP BED: For wide angle photography, the bed of the camera may have to be dropped. Refer to the table following for the recommended position of the bed for the lenses listed. Always check the image on the ground glass at the back of the camera. Before dropping or raising the bed, be sure that the track is racked all of the way back into the camera body. In some instances an infinity stop for the wide angle lens will have to be located behind the front standard on the short section of the sliding track.

Exposure: The many types and speeds of films which may be used in your camera make it rather difficult to include adequate exposure data in this booklet. Film manufacturers furnish this with many films and can also supply exposure charts and guides for their films. An exposure meter is always helpful in obtaining good exposure.

Position of Bed When Wide Angle Lens is Used

<i>Lens</i>	<i>Crown "23"</i>	<i>Speed "23"</i>	<i>Crown "34"</i>	<i>Speed "34"</i>	<i>Crown "45"</i>	<i>Speed "45"</i>
65MM W.A.	Normal	—	Drop	—	—	—
80MM W.F. Ektar	Normal	Normal	Normal	Drop	—	—
90MM Optar W.A.	—	—	Normal	Normal	Normal	Drop
100MM W.F. Ektar	—	—	Normal	Normal	Normal	Normal

FRONT MOVEMENTS

The front standard of the camera can be raised, tilted or shifted. The lock nuts at the center of the sides are used when the lens is raised. The lock nuts at the base are used to tighten the tilt position. To shift the front standard laterally, loosen the front standard lock and depress the plate beneath it and move the standard. Then retighten the lock. These movements are used to center the image on the ground glass when it is not desirable to tilt or swing the camera

because of resulting unpleasant convergence of lines such as room or building corners. Special effects can also be obtained such as the photographing of large groups or areas from an elevation, bringing the entire area into sharp focus, even with a large lens opening, merely by tilting the lens forward a little.

The GRAFLEX Consumer Service Department will be pleased to answer questions relating to your GRAPHIC Camera and help you solve photographic problems. When writing to this Department, be sure to refer to the camera serial number and if possible, send in negatives with exposure data.

The registration card packed with your camera when it left the factory should be filled out completely and mailed promptly. It will help us to give you more complete service.

For your convenience GRAFLEX maintains completely equipped service facilities in the cities noted on the next page.