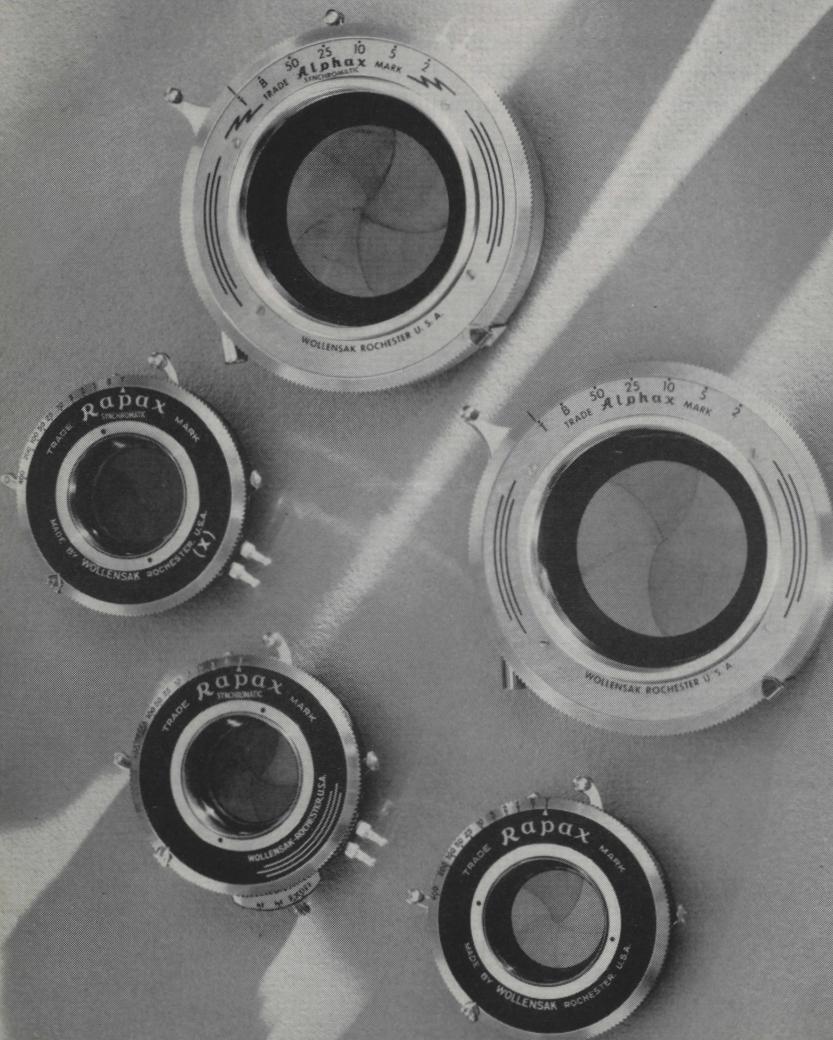


# Wollensak

SHUTTERS . . . WITH AND WITHOUT SYNCHRONIZATION



RAPAX  
FULL  
SYNCHROMATIC

RAPAX  
"X"  
SYNCHROMATIC

RAPAX  
NON-  
SYNCHROMATIC

ALPHAX  
SYNCHROMATIC

ALPHAX  
NON-  
SYNCHROMATIC

BARRELS,  
FLANGES and  
ACCESSORIES

# The SHUTTER FOR UNIFORM EXPOSURE . . .

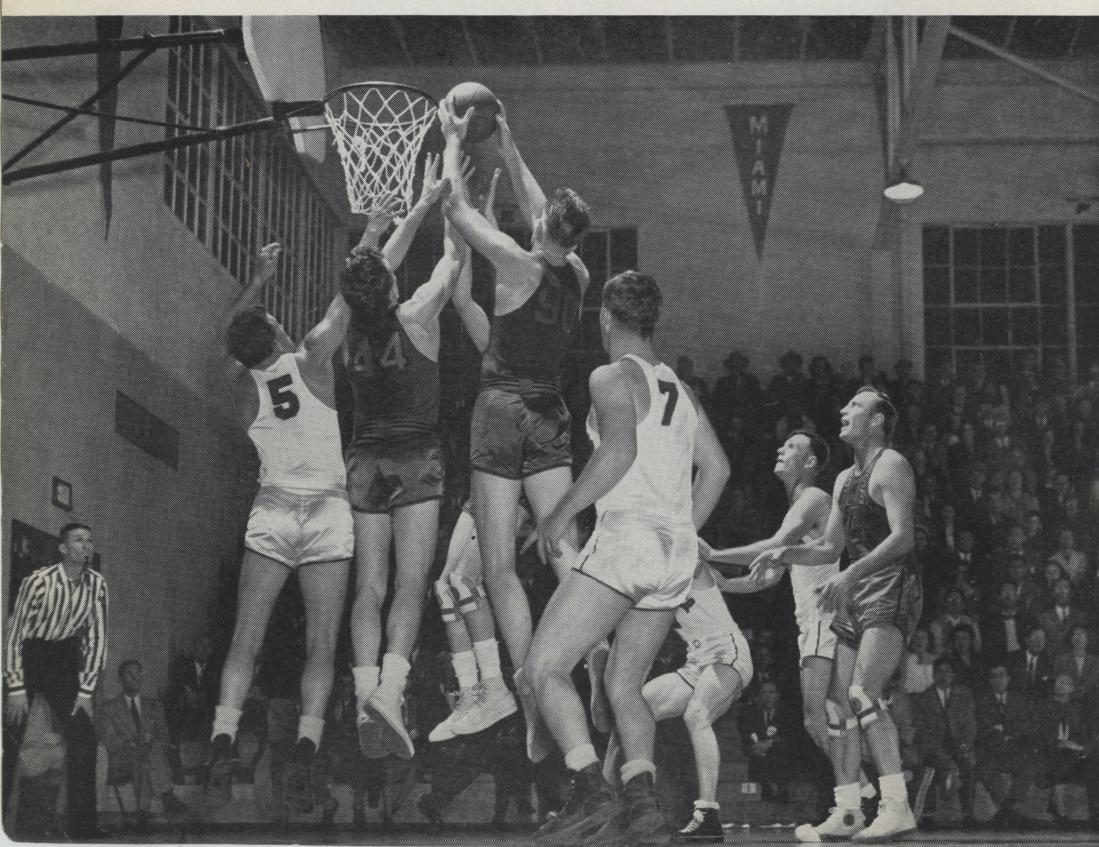
# Wollensak PRECISION-MADE RAPAX

## WHY YOU NEED A PRECISION-MADE SHUTTER

• A watch measures time in seconds. A shutter must go a step further; it must measure time in *fractions* of a second. Thus, you can see that a good shutter must be made with the greatest care by artisans.

Whether a professional or amateur, your work is affected critically by the accuracy of the shutter you use. If you set your shutter for a given speed, you want to feel certain you will get this same speed every time . . . today, next week . . . as often as you expose. If your shutter does not give *uniform* speeds, your black and white negatives will be under or over-exposed. Chances are, your color transparencies will be ruined.

That's why it is imperative that you choose your shutter with care. A good lens does not compensate for an unreliable shutter. Only a precision-made shutter that gives you *uniform* exposures will do if you are serious about the quality of your photography.



## WHY YOU'LL WANT A RAPAX

• *Accuracy . . . dependability . . . ease of operation . . .* these are the benefits of owning a Wollensak Rapax shutter. Originally designed during the war for rigorous combat duty, the Rapax has since proved its superiority in practically every field of photography.

The Rapax is a between-the-lens, rim-set shutter, with an accurately fitted train of gears and pinions, working in connection with a series of levers and carefully tempered springs. Nine speeds—1 second to 1/400 second—plus Bulb and Time are offered on all but the largest size; here the top speed is 1/200 of a second. Speeds are set by turning the outside knurled ring until the desired figure on the speed scale is opposite the pointer at the top of the shutter.

Simple to use, the Rapax has only two operating levers. The setting lever "cocks" the shutter; that is, it puts the springs under proper tension for the desired speed. The release lever, when depressed, trips the shutter and makes the exposures. A socket is supplied for a cable release.

## PRESS-FOCUS LEVER for quick ground-glass focusing

• It is not necessary to revolve the speed ring to Time to open the shutter blades for focusing. Suppose, with the shutter cocked, you wish to quickly check your focus before exposing. Whether or not you are using flash, you merely depress the press-focus lever and the blades open. This can be done at any speed setting. After focusing, you lift the press-focus lever to close the blades. *Your shutter is still cocked and ready for the exposure.*

## Advantages of Internal Synchronization of Rapax Shutter Over Solenoid Synchronization

1. Internal Synchronization delivers maximum efficiency over the entire range of shutter. This is possible by the use of two synchronizer delay settings (Black "M" and Red "M"). The Black "M" setting is for fast shutter speeds of 1/100 and faster; the Red "M" setting for speeds of 1/50 and slower. One cannot get maximum synchronization efficiency at 1/50 second when the shutter is synchronized for speeds faster than 1/100.
2. Internal Synchronization is more consistent. Since the synchronizer delay system is mechanical, its performance is not dependent upon the condition of the batteries in the gun. Synchronization with a solenoid varies with condition of batteries and temperature changes.
3. Internal Synchronization is easy on the Batteries. Battery current is used to flash only the lamps and is not drained by solenoid coil.
4. Internal Synchronization can also be used in "Off the Camera" flash shots. One of the strongest arguments for the use of a solenoid as a synchronizer has been it permits off the camera shots—that is, the shutter is tripped from the gun which is held off the camera for better lighting effects. With some flash guns, this "off the camera" operation may be accomplished by using the solenoid as a remote tripper only and letting the internal synchronizer of the shutter do the synchronizing. This combines the advantages of both methods.

# The SHUTTER FOR FLASH PHOTOGRAPHY . . .

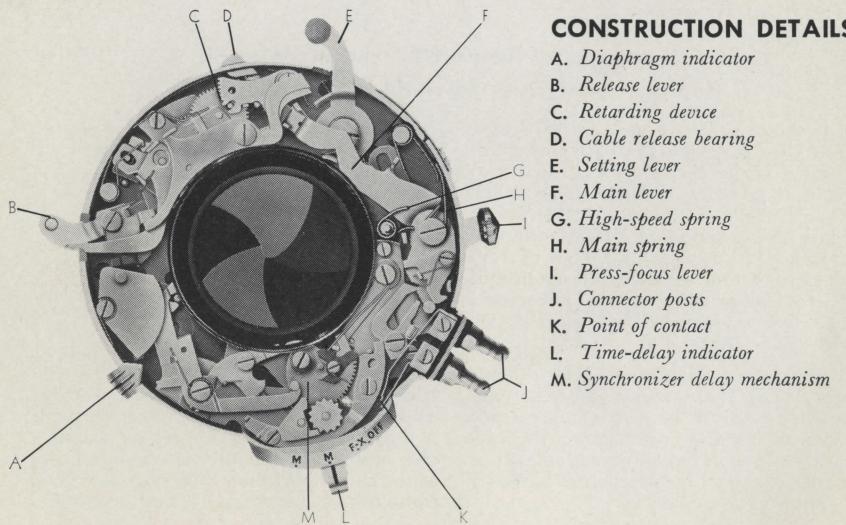
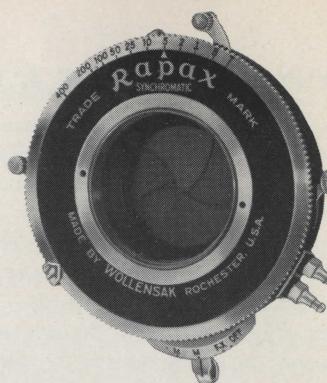
# Wollensak RAPAX SYNCHROMATIC

## RAPAX FULL SYNCHROMATIC

• This shutter offers completely automatic synchronization for high speed lamps, *plus* automatic synchronization of Class M (20-millisecond) and Class F (5-millisecond) lamps. The advantages of built-in synchronization over external synchronization, using a magnetic tripper, are: (1) more consistently accurate synchronization; (2) less current drain on battery; (3) convenience; (4) compactness.

Proper delay for each class of lamp is provided on an easy-to-read, easy-to-set scale at the bottom of the shutter. On this scale are a black "M," a red "M," a red "F" and black "X" combination and a black "OFF." The black "M" is used with shutter speed settings (marked in black) of 100 and faster for synchronizing Class M lamps. The red "M" and the red "F" are used with shutter speed settings (marked in red) of 50 and slower to synchronize the Class M lamps and the Class F lamps respectively. The black "X" setting is used at any shutter speed setting to synchronize the "X" type (zero delay) electronic high speed flash units.

There is no separate cocking lever for the synchronization mechanism. COCKING THE SHUTTER AUTOMATICALLY COCKS THE SYNCHRONIZER. This *greatly* simplifies flash picture taking, and eliminates the ominous possibility of neglecting to cock the synchronizer.



## RAPAX "X" SYNCHROMATIC

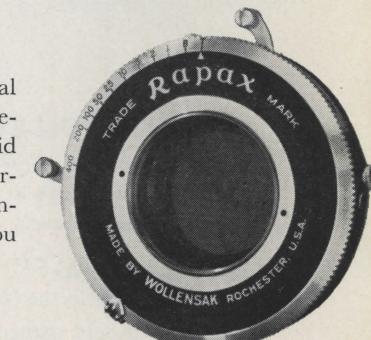
• This shutter offers built-in electrical contacts for flashing the "X" type (also known as "trigger" type, "O" type, and thyratron trigger type) electronic high speed lamps at any shutter speed. For ordinary flash lamps, the Rapax "X" Synchromatic is operated with a solenoid in the same manner as the Rapax Non-Synchromatic.

Using the Rapax "X" Synchromatic for high speed lamps is quite simple. The cord is connected from the circuit of the flash unit to the contact posts on the shutter. When the shutter is tripped the built-in contacts automatically close at the proper split second to synchronize the lamp at any shutter speed. You are assured of positive, unerring synchronization.



## RAPAX NON-SYNCHROMATIC

• This shutter has no internal synchronizer but is identical in all other respects to the Rapax Synchromatics just described. If you already have flash equipment for solenoid synchronization, this shutter will give you excellent performance. However, if you feel you may use one of the increasingly popular high speed flash units in the future, you will be wise to choose the Rapax "X" Synchromatic.



## RAPAX "M-F" SYNCHROMATIC

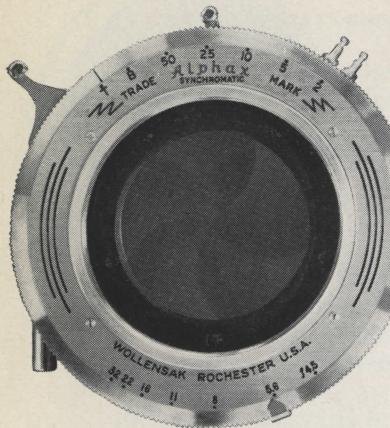
• Made for manufacturers of small cameras in the No. 0 and No. 1 sizes, this shutter offers a simplified type of internal synchronizer which is pre-set at the factory and has no external synchronizer selector lever. *It synchronizes Class F lamps at all speed settings and the Class M lamps at speed settings of 25 and slower.* It is *not* synchronized for "X" type electronic high speed flash.

## S P E C I F I C A T I O N S

Size	Maximum Diaphragm Opening		Lens Mount Thread Diam.		Speeds	Flange Diameter	
	Inch	mm	Front Inches	Rear Inches		Inside Inches	Outside Inches
0	$\frac{11}{16}$	17.2	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{1}{2}$ to $\frac{1}{400}$ plus T & B	$\frac{6}{4}$	$1\frac{29}{32}$
1	$\frac{25}{32}$	20	$\frac{31}{32}$	$1\frac{1}{32}$	1 to $\frac{1}{400}$ plus T & B	$1\frac{3}{16}$	$1\frac{11}{16}$
2	1	25.4	$1\frac{1}{4}$	$1\frac{1}{4}$	1 to $\frac{1}{400}$ plus T & B	$1\frac{21}{64}$	$1\frac{7}{8}$
3	$1\frac{13}{64}$	31	$1\frac{35}{64}$	$1\frac{37}{64}$	1 to $\frac{1}{200}$ plus T & B	$1\frac{43}{64}$	$2\frac{19}{64}$

# Wollensak ALPHAX SYNCHROMATIC

...The SHUTTER FOR LONGER FOCUS LENSES



## ALPHAX SYNCHROMATIC

● Professional photographers no longer need to fuss with external synchronizers. The No. 2, 3, 4 and 5 Alphax Synchromatics offer a built-in mechanism which assures positive automatic synchronization of most any popular type flash lamp. *See specifications for performance details.*

*There is no separate lever to cock the synchronizer.* The synchronizer automatically operates when the shutter is tripped. In fact, there is no cocking lever on the shutter at all. The operating lever is depressed by hand or cable release; the lamp flashes in synchronization with the shutter; the picture is taken. It's as simple as operating a box camera.

## ALPHAX NON-SYNCHROMATIC

● The Standard Alphax, without built-in synchronization, is available for those who do not expect to do flash work. This shutter is identical to the Alphax Synchromatic in every other respect.

## ALPHAX "M-F" SYNCHROMATIC

● This shutter in the No. 0 and No. 1 size is furnished to manufacturers of smaller sized hand-held cameras. Synchronization is pre-set at the factory and has no external synchronizer selector lever. *Class F lamps are in synchronization at all shutter*

*speeds, and Class M lamps at speed settings of 25 and slower.* It is not synchronized for "X" type electronic high speed flash.

## WOLLENSAK LENS BARRELS

● Here again "precision" is the watchword. Perfect concentricity is guaranteed to assure the best results from the photographic objective. Each barrel is supplied with iris diaphragms of non-warping metal to give long life and trouble-free performance.

Size	Maximum Diaphragm Opening		Lens Mount Thread Diameter		Flange Diameter	
	Inch	mm	Front Inches	Rear Inches	Inside, Inches	Outside, Inches
000	5/32	4	3 5/16	3 1/16	5/8	1 5/16
00	19/64	7	4 1/16	2 3/16	1	1 17/32
0	5/8	16	1	5 5/16	6 1/4	1 29/64
1	51/64	20	1 15/16	1 5/16	1 3/16	1 1/16
2	7/8	22	1 15/16	1 5/16	1 21/64	1 5/56
3	1 1/16	27	1 15/16	1 3/16	1 19/32	2 25/64
4	1 19/64	33	1 5/16	1 5/16	2	2 3/32
5	1 17/32	39	2 3/16	2 3/16	2 1/4	2 53/64
6	1 51/64	45	2 27/64	2 27/64	2 5/8	3 3/56
7	2 13/64	56	2 15/16	2 15/16	3 1/8	4 5/64
8	2 21/32	67	3 27/64	3 27/64	3 41/64	4 5/8
9	3 9/64	80	3 57/64	3 57/64	4 1/8	5 1/4
10	3 7/8	98	4 3/4	4 3/4	4 47/64	6 5/64

## ALPHAX

## SHUTTERS

Size	Maximum Diaphragm Opening		Lens Mount Thread Diameter		Flange Diameters	
	Inch	mm	Front Inches	Rear Inches	Inside Inches	Outside Inches
0	35/64	14	5 1/16	5 5/16	6 1/16	1 29/64
0	35/64	14	5 1/16	5 5/16	6 1/16	1 29/64
1	47/64	18.7	1 5/16	1 1/64	1 3/16	1 11/16
1	47/64	18.7	1 5/16	1 1/64	1 3/16	1 11/16
2	1	25.4	1 7/32	1 7/32	1 21/64	1 55/64
2	1	25.4	1 7/32	1 7/32	1 21/64	1 55/64
3	1 3/8	34.9	1 51/64	1 51/64	2	2 21/32
3	1 3/8	34.9	1 51/64	1 51/64	2	2 21/32
4	1 11/16	42.7	2 27/64	2 27/64	2 5/8	3 17/32
4	1 11/16	42.7	2 27/64	2 27/64	2 5/8	3 17/32
5	2 7/32	56.7	2 15/16	2 15/16	3 1/8	4 5/64
5	2 7/32	56.7	2 15/16	2 15/16	3 1/8	4 5/64

Type of Shutter	Speeds	Synchronized Speeds With		
		Class M	Class F	Class X
Alphax Non-Sync	1/10 to 1/200 plus T & B	.....	.....	.....
Alphax Sync	1/10 to 1/200 plus T & B	1/25 and slower	All speeds	.....
Alphax Non-Sync	1/10 to 1/200 plus T & B	.....	.....	.....
Alphax Sync	1/10 to 1/200 plus T & B	1/25 and slower	All speeds	.....
†Alphax Non-Sync	1 to 1/100 plus T & B	.....	.....	.....
†Alphax Sync	1 to 1/100 plus T & B	1/50 and slower	All speeds	All speeds
†Alphax Non-Sync	1 to 1/100 plus T & B	.....	.....	.....
†Alphax Sync	1 to 1/100 plus T & B	1/50 and slower	All speeds	All speeds
†Alphax Non-Sync	** 1/2 to 1/50 plus T & B	All speeds	All speeds	All speeds
†Alphax Sync	** 1/2 to 1/50 plus T & B	All speeds	All speeds	All speeds
†Alphax Non-Sync	** 1/2 to 1/50 plus T & B	All speeds	All speeds	All speeds
†Alphax Sync	** 1/2 to 1/50 plus T & B	All speeds	All speeds	All speeds

†Available upon request with press-focus lever.

\*\*Available upon request with speeds including 1 second.

# Wollensak MEANS UNIFORM QUALITY

## STANDARD FLANGES

Thread Diameter Inch	Thread Diameter Inch	Thread Diameter Inch
$\frac{5}{8}$ to 1	$2\frac{9}{16}$ to 3	$4\frac{1}{16}$ to $4\frac{1}{2}$
$1\frac{1}{16}$ to 2	$3\frac{1}{16}$ to $3\frac{1}{2}$	$4\frac{9}{16}$ to $5\frac{1}{2}$
$2\frac{1}{16}$ to $2\frac{1}{2}$	$3\frac{9}{16}$ to 4	

## LENS CAPS

- Wollensak lens caps are made to fit any Wollensak lens. They are of rigid chromed metal, lined with a velvet felt material. The cap fits snugly over the lens to keep out dust and moisture, and prevents accidental injury to the lens surface when not in use.

## ACCESSORIES

The following Wollensak accessories are available:

Diaphragm scales	7" cable releases
Wocote Lens Cleaning Tissue	10" cable releases
Wocote Lens Cleaner	18" cable releases
Electrical connecting cords for Rapax Synchromatic Shutters	30" cable releases

## ADVISORY SERVICE

- Your Wollensak dealer will be glad to demonstrate any Wollensak product and answer your questions. If there are any optical or shutter problems, however, which you wish to send to a Service Department, we will give them our prompt attention. This service involves no obligation.

## TWO-YEAR GUARANTEE

- Wollensak shutters are warranted to give satisfaction. If with proper care they fail to do so within two years after leaving our factory, repairs will be made free of charge if returned *directly to the factory*.

**Wollensak**  
MEANS FINE LENSES

OPTICAL CO. • ROCHESTER 5, N. Y.